

Research and Mentoring for Postbaccalaureates in Biological Sciences (RaMP)

PROGRAM SOLICITATION NSF 23-514

REPLACES DOCUMENT(S): NSF 22-506



National Science Foundation
Directorate for Biological Sciences
Division of Biological Infrastructure

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

February 16, 2023

January 18, 2024

IMPORTANT INFORMATION AND REVISION NOTES

New recruitment, selection, and retention and dissemination plans sections are required. BIO RaMP PIs must use the NSF Education and Training Application (ETAP) to manage postbaccalaureate applications and to collect participant demographic information.

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:

Research and Mentoring for Postbaccalaureates in Biological Sciences (RaMP)

Synopsis of Program:

The Research and Mentoring for Postbaccalaureates (RaMP) in Biological Sciences program invites the submission of proposals to establish networks to support full-time research, mentoring, and training for recent college graduates who have had few or no research or training opportunities during college in research fields typically supported by the Directorate of Biological Sciences (BIO). A strategic focus of the National Science Foundation is to foster the growth of a globally-competitive and diverse research workforce. To that end, proposals submitted to this program are expected to create strong evidence-based, inclusive and culturally-aware mentorship programs that will advance the goal of creating a competitive and highly representative science, technology, engineering and mathematics (STEM) workforce in the U.S. with a focus on the biological sciences. Projects are expected to train individuals for a range of potential career pathways in the biological sciences including: research-focused M.S. or Ph.D. graduate programs; entry-level positions in industry, federal, tribal, or state agencies, education and research centers, or not-for-profit science-based organizations; or other STEM careers.

Individuals from groups underrepresented in STEM, first generation college students, and students at under-resourced institutions frequently have limited opportunities to participate in the undergraduate research experiences that are necessary to be competitive for graduate programs or other STEM career pathways. This program will provide postbaccalaureate research experiences for cohorts of trainees, either in ongoing research programs, existing research networks, or in new research projects designed specifically for the RaMP networks.

Studies of capacity-building and training across diverse disciplines have emphasized the importance of inclusive training via cohort mentoring and networks of individuals working together towards a common purpose. Cohorts promote the development of long-term relationships, and networks foster the exchange of ideas and resources to pursue common goals and to address shared challenges. Proposals will use a network structure that generates a supportive and strong collaborative mentoring environment centered around a cohesive biological research

theme. The networks are expected to include diverse organizations and can be regional, national, or have an international component. The network will facilitate the recruitment and selection of postbaccalaureate research participants (hereafter, mentees) and mentors. Projects must provide inclusive and culturally-aware training to mentors in addition to providing professional development opportunities for all network members, including mentees, mentors, co-mentors, and other STEM professionals. Networks are expected to involve and facilitate communication and training among mentors and mentees from different organizations, institutions, and/or departments. Proposals submitted under this solicitation should focus on research-based inquiry projects that include analytical and technical training and professional development opportunities.

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.

- RaMP Working Group, telephone: (703) 292-8470, email: RAMP@nsf.gov

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

- 47.074 --- Biological Sciences

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant

Estimated Number of Awards: 10 to 12

Awards are contingent on availability of funds and the quality of proposals.

Anticipated Funding Amount: \$30,000,000

The solicitation will support RaMP networks to engage 8-12 postbaccalaureate participants per year for 3 years (each award is expected to support a total of approximately 30 postbaccalaureate participants). Each participant will be supported by a stipend of at least \$32,500 per year. Programs in areas with higher costs of living may adjust stipends to salary commensurate with the host institution's relevant payroll schedule. Mentors and co-mentors should be supported with professional development and mentoring training. Although support will be provided for 3 annual cohorts of mentees over 36 months, awards of up to 48 months are allowed to facilitate upfront work prior to the first cohort for network establishment, mentor training, mentee recruitment and selection, and plans for network assessment and evaluation.

Eligibility Information

Who May Submit Proposals:

Proposals may only be submitted by the following:

- Institutions of Higher Education (IHEs) - Two- and four-year IHEs (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Special Instructions for International Branch Campuses of US IHEs: If the proposal includes funding to be provided to an international branch campus of a US institution of higher education (including through use of subawards and consultant arrangements), the proposer must explain the benefit(s) to the project of performance at the international branch campus, and justify why the project activities cannot be performed at the US campus.
- Non-profit, non-academic organizations: Independent museums, observatories, research labs, professional societies and similar organizations in the U.S. associated with educational or research activities.

Who May Serve as PI:

The PI will be responsible for overseeing all aspects of the award. Additional network members may be designated as co-Principal Investigators if developing and operating the RaMP network would involve shared responsibility and well-justified close collaboration. Other anticipated members of the leadership team or research supervisors (mentors) are considered non-co-PI Senior Personnel.

Limit on Number of Proposals per Organization:

There are no restrictions or limits.

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

There are no restrictions or limits.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Letters of Intent:** Not required
- **Preliminary Proposal Submission:** Not required
- **Full Proposals:**
 - Full Proposals submitted via Research.gov: *NSF Proposal and Award Policies and Procedures Guide (PAPPG)* guidelines apply. The complete text of the PAPPG is available electronically on the NSF website at: https://www.nsf.gov/publications/pub_summ.jsp?

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

B. Budgetary Information

- **Cost Sharing Requirements:**

Inclusion of voluntary committed cost sharing is prohibited.

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

Not Applicable

- **Other Budgetary Limitations:**

Not Applicable

C. Due Dates

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

February 16, 2023

January 18, 2024

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:

Standard NSF reporting requirements apply.

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I. INTRODUCTION

There is growing recognition of the need to develop strong and inclusive research training pathways to facilitate the growth of a competitive STEM workforce representative of the U.S. population. Increased inclusion through cohort mentoring and culturally-aware mentor-training in STEM produces a more diverse workforce and innovative research outcomes that ensure that science benefits all members of our society. With this program, the NSF Directorate for Biological Sciences seeks to remedy the loss of diverse talent that occurs between the attainment of a STEM undergraduate (baccalaureate) degree and entry into a STEM career pathway.

Research experiences constitute one of the most effective ways to attract, retain, and support career transitions of students in STEM. Research opportunities, however, are not equally available to all students, and students at smaller and/or under-resourced institutions can have limited field and laboratory research experiences or opportunities. The Research and Mentoring for Postbaccalaureates (RaMP) in Biological Sciences program is intended to provide research-based training at this critical academic transition. The program funds networks that offer strong research, mentoring, technical skills, and professional development training opportunities in an inclusive and culturally-appropriate cohort environment for recent graduates with limited or no research opportunities during college, with the goal to increase their competitiveness to entry-level positions in industry, federal, tribal, or state agencies, education and research centers, or not-for-profit organizations or other STEM careers. This program also recognizes the importance of supporting mentors themselves, including culturally-aware training opportunities that best support diverse mentees.

II. PROGRAM DESCRIPTION

The National Science Foundation's (NSF) Directorate for Biological Sciences (BIO) created the RaMP program to support networks that provide recent baccalaureates (mentees) the opportunity to spend one year developing and executing research projects and receiving effective and culturally-aware mentoring throughout their experiences in order to help transition to the next stage in their career. The RaMP program supports projects for mentoring and training cohorts of 8-12 postbaccalaureate graduates per year for 3 years. RaMP activities should include: high-quality research experiences of postbaccalaureate mentees; engagement with mentors; a research network of participants with a strong science theme; a range of research settings; inclusive and culturally-aware training of the mentors themselves; inclusive mentorship strategies; evaluation and dissemination plans; and professional development opportunities that prepare the postbaccalaureate participants for a range of competitive research and research-related careers within and outside academia. The network must facilitate collaboration, communication, professional development, and training opportunities to all network members and partner organizations. The RaMP networks are intended to support robust research experiences in science topics typically supported by the Directorate of Biological Sciences and involve participants in potentially transformative career experiences.

The mentee research experience should encourage and develop the mentees independence and competence as a researcher and provide an opportunity to acquire the requisite technical, analytical, and interpersonal skills necessary to thrive in conducting collaborative research in biology. Postbaccalaureates will be paired with trained mentors throughout the program and will benefit from professional development and networking opportunities and additional mentoring offered by the network. Mentees must have a baccalaureate degree in a biology-related field before the start of the fellowship and show a demonstrated need for additional training and mentorship; and mentors must be trained in inclusive and culturally-aware mentoring to effectively mentor diverse cohorts of students. Each proposal must provide a strategic plan for the recruitment and selection of a diverse pool of participants, and the strategy for mentoring trainees. Ideally, the projects will involve independent research by the mentee, typically in a collaborative environment, with the support, mentorship, and guidance required at this early career stage by mentors, co-mentors, and other network members.

Networks should be structured to support 8-12 postbaccalaureate mentees per year (mentees may only be supported with a stipend for 1 year) with annual stipends of a minimum of \$32,500 per participant. Programs in areas with higher costs of living may adjust stipends to salary commensurate with host institutions relevant payroll schedule. Networks must place emphasis on strategies for future success of postbaccalaureates by: a) enhancing critical thinking, creativity, interpersonal skills, and overall research skills in a safe research environment with ethically sound research practices; b) improving participants' transition to graduate level programs, industry, federal, tribal, or state agencies, education and research centers, not-for-profit science-based organizations, or other STEM careers; c) providing training in a cohort and network environment with common scientific and professional goals; d) creating an environment that increases participants' science identity, self-efficacy, and sense of belonging in STEM through mentors that have been trained to do so; and e) providing inclusive and comprehensive experiences to develop the next generation of diverse leaders in biological sciences. Programs should build on participants' strengths and the benefits of diverse and supportive research experiences that foster the development of cohort-based relationships between the network of team members (virtual or in person).

The RaMP networks may be regional or national or may have international components. It is expected that a proposed network will involve investigators (mentors and co-mentors) from diverse organizations, which can include a variety of institutions of higher education, industry, federal, tribal, and state agencies, not-for-profit science-based organizations, or research and teaching centers.

NSF is committed to the inclusion of all people and institutions in the research enterprise because all are vital to the nation's health, security, and global leadership in STEM. The nation's changing demographics make this commitment all the more timely. Therefore, to be competitive, proposers must be intentional regarding broadening participation in their projects through efforts to promote diversity, equity, and inclusion of individuals and institutions traditionally underrepresented in STEM. NSF is also interested in ensuring the inclusion of individuals from diverse social categories and/or identities including but not limited to: race, ethnicity, gender, sexual orientation, socio-economic status, disability status, veteran status, or geography—recognizing that underrepresentation can vary by career stage and discipline and that there are additional considerations of intersectionality. Proposals submitted to this solicitation are strongly encouraged to involve PIs, co-PIs, postdoctoral fellows, students, and other personnel who are members of these groups. NSF also recognizes that STEM research and education occurs at a wide range of institutions.

NSF highly encourages participation of institutions of higher education (IHEs), non-IHEs, as well as business and industry participation from organizations that serve (enroll, educate, and graduate) individuals who are members of groups underrepresented and/or underserved in STEM education programs and careers. These IHEs include mission-based institutions such as Historically Black Colleges and Universities (HBCUs), Tribal Colleges and Universities (TCUs), and institutions that primarily serve persons with disabilities as well as Predominantly Undergraduate Institutions (PUIs), Minority-Serving Institutions (MSIs), Hispanic Serving Institutions (HSIs), and women's colleges. NSF welcomes single institution and multi-institutional collaborative proposals from all types of institutions and encourages authentic and substantive collaborations and partnerships across diverse geographies and types of institutions. Proposals from EPSCoR jurisdictions are especially encouraged.

RaMP proposals should consider specific benefits to both mentees and mentors. Benefits to mentors should include formal training in inclusive and culturally-aware mentorship and networking before the start of the program, collaboration-building with other network mentees and mentors, and other valuable activities, such as leadership training, conflict management, teamwork, and the acquisition of skills that may increase institutional capacity to better support the training of

future mentees.

It is expected that the networks develop an evidence-based mentoring strategy^[1] that is grounded in established practices that will help meet the network goals. RaMP networks are encouraged to leverage established programs such as NSF INCLUDES (Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science) or other broadening participation programs (<https://www.nsf.gov/od/broadeningparticipation/bp.jsp>). Networks are strongly encouraged to leverage available resources to facilitate training of participants, mentors and co-mentors (e.g., faculty teams, postdoctoral associates, and advanced Ph.D. students).

A successful RaMP proposal must follow the PAPPG guidelines for proposal preparation, required sections and documents, and must address Intellectual Merit and Broader Impacts. In addition to the PAPPG required section labeled **Broader Impacts**, the Project Description must include the following sections: (1) A **Science Theme** that provides a compelling basis for investigating a biological phenomenon and provides opportunities to mentees at this early career stage to develop a science community with their peers and mentors with common scientific interests; (2) A **Network Structure and Collaborative Framework** that encourages an understanding of the value of team-based and network-based research practices; (3) A **Recruitment, Selection and Retention Plan** with clear goals to broaden participation in biology; (4) A **Mentoring Program Plan** that emphasizes culturally-aware and inclusive mentoring of diverse researchers and values the role of intentional mentoring in influencing career-paths of early professionals; (5) An **Evaluation and Assessment Plan**; and (6) A **Project Outcomes and Dissemination Plan**. The organization of the network must include PI/co-PI(s), coordinator(s), mentors and co-mentors, postbaccalaureate participants, and an assessor. Proposals are expected to include investigators from diverse organizations and partner institutions. Letters of collaboration with partners or other entities should be included as supplementary documents. See Section V below for details on how to prepare these areas of consideration for review.

1 National Academies of Sciences, Engineering, and Medicine. 2019. *The Science of Effective Mentorship in STEM*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25568>.

III. AWARD INFORMATION

Estimated program budget, number of awards and average award size/duration are subject to the availability of funds. For FY 2023, it is estimated that \$30 million will be available to fund approximately 10-12 awards.

IV. ELIGIBILITY INFORMATION

Who May Submit Proposals:

Proposals may only be submitted by the following:

- Institutions of Higher Education (IHEs) - Two- and four-year IHEs (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Special Instructions for International Branch Campuses of US IHEs: If the proposal includes funding to be provided to an international branch campus of a US institution of higher education (including through use of subawards and consultant arrangements), the proposer must explain the benefit(s) to the project of performance at the international branch campus, and justify why the project activities cannot be performed at the US campus.
- Non-profit, non-academic organizations: Independent museums, observatories, research labs, professional societies and similar organizations in the U.S. associated with educational or research activities.

Who May Serve as PI:

The PI will be responsible for overseeing all aspects of the award. Additional network members may be designated as co-Principal Investigators if developing and operating the RaMP network would involve shared responsibility and well-justified close collaboration. Other anticipated members of the leadership team or research supervisors (mentors) are considered non-co-PI Senior Personnel.

Limit on Number of Proposals per Organization:

There are no restrictions or limits.

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

There are no restrictions or limits.

Additional Eligibility Info:

Note that institution types, other than those listed in the "Who May Submit Proposals" section, are allowed to receive subawards through an eligible institution, but there are limitations on what can be supported by those subawards. The PI should discuss with a program officer any plans to incorporate a subaward to an institution not eligible to submit directly to this solicitation.

Eligible Participants: Postbaccalaureate participants supported with NSF funds must be U.S. citizens, U.S. nationals, or permanent residents of the United States. Participants must have a baccalaureate college degree before participating in the program (applicants must apply to the program before or within four years of graduation, with extensions allowed for family, medical leave, or military service). Individuals currently enrolled or accepted into a graduate program are not eligible.

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.

Although RaMP networks are expected to involve mentors from multiple sites and organizations, a single organization must serve as the submitting organization for each proposal. Of the two types of collaborative proposal formats described in the PAPPG, this solicitation allows only a single proposal submission with subawards administered by the lead organization if needed.

Cover Sheet: Research.gov Users: The Prepare New Proposal setup will prompt you for the program solicitation number (located on the first page of this document). From 'where to apply', select Directorate for Biological Sciences, Division of Biological Infrastructure (DBI), Human Resources. Grants.gov users: The program solicitation will be pre-populated by Grants.gov on the NSF Grant Application Cover Page. Refer to Section VI.1.2. of the NSF Grants.gov Application Guide for specific instructions on how to designate the NSF Unit of Consideration. Beginning Investigators (individuals who have not been a Principal Investigator [PI] or co-Principal Investigator [co-PI] on a Federally funded award with the exception of doctoral dissertation, postdoctoral fellowship or research planning grants) listed as Lead PI must check the box for "Beginning Investigator" on the proposal Cover Sheet.

Title of Proposed Project: Begin the title of the proposed project with the label "RaMP:" and carefully choose a project title that will permit prospective postbaccalaureate participants to easily identify the focus of the network.

Project Description: The Project Description must follow the PAPPG (II.D.2.d) guidelines for required sections and documents and must address Intellectual Merit and Broader Impacts (see also specific solicitation review criteria under section VI). **The Project Description is limited to 15 pages and must include the following named sections that describe the RaMP network:**

1. **Science Theme:** As part of the Intellectual Merit of the proposal, projects must include a clearly articulated and cohesive science theme that fits within or integrates among the core research areas of the NSF BIO Directorate. The description should include the underlying conceptual framework, hypotheses, and research questions when appropriate. Research projects must focus primarily on BIO core research areas that enable discoveries for understanding life. BIO- supported research advances the frontiers of biological knowledge and proposals that creatively integrate diverse subdisciplines of biology are encouraged. Proposals must demonstrate capacity to involve participants in advanced, creative, and potentially transformative training and research opportunities with the support, mentorship, and guidance of mentors, co-mentors, and other network members required at this early career stage.
2. **Network Structure and Collaborative Framework:** The RaMP proposals should describe the network design and vision. Networks may be regional or national or may have international components. It is expected that a proposed network will involve investigators (mentors and co-mentors) from diverse organizations, which can include a variety of institutions of higher education, industry, federal, tribal, and state agencies, and research and teaching centers. Proposals are encouraged to include evidence demonstrating that the network institutions or research groups have highly qualified mentors and co-mentors who have demonstrated commitment to inclusive mentoring and broadening participation. The proposal must describe the activities to facilitate networking, professional career opportunities, and dissemination of research products. The RaMP network structure is expected to increase scientific impact of project participants by advancing biological research, facilitating increased collaboration and communication, increasing training opportunities, and providing peer support for postbaccalaureate mentees and their mentors. The network should also include plans to expand to interested parties outside of the initial participants in the proposed network. The network is required to schedule at least one annual meeting for mentees, mentors, co-mentors, and other network participants to present research outcomes and to facilitate networking opportunities and professional development of all network members. There should be clearly developed mechanisms for communication and transparency among collaborating units. Network members should have full access to virtual communication resources that include computational and data storage facilities as well as file-sharing capabilities. Proposers should describe plans for the orientation of all participants in the network (including mentees, mentors, co-mentors, graduate students, and network partners) to agree upon expectations of behavior to ensure a safe and respectful environment for all participants and to review the organization's policy or code of conduct addressing sexual harassment, other forms of harassment, and sexual assault, including reporting and complaint procedures. For additional information, see the NSF policies at <https://www.nsf.gov/od/odi/harassment.jsp>.

We encourage activities that aim to expand the network through efforts at broadening participation, including best practices that increase the participation of individuals from underrepresented groups in biological sciences. Networks may include plans to improve cohort training practices and mentoring programs at participating institutions and network partners, expand institutional research capacity, and reduce factors that limit career transitions and training opportunities for college graduates.

Each RaMP project must include the following organizational structure/individuals:

- **Principal Investigator (PI, co-PIs):** The Principal Investigator will serve as the intellectual leader of the project, taking primary responsibility for overseeing the project by ensuring it meets its milestones, that all component parts are integrated, and that there is effective communication across all levels of the network. Proposals should describe the PI's experience in mentoring programs and plans for building a community of inclusive mentors through culturally-aware mentoring to enable the training of diverse students. The PI is designated as the

contact for the project and along with any co-PIs is expected to provide leadership in coordinating and integrating the activities of the network. Strong and inclusive central leadership, clear communication plans, and delineation of responsibilities are essential for successful network function (see Project Management Plan section). A team-based and collaborative leadership structure with individuals from different institutions is encouraged; therefore co-PIs may be indicated with additional roles and responsibilities that are described and differentiated from other roles.

- **Project Coordinator:** The Coordinator is expected to coordinate communication for the project; to coordinate training and professional development opportunities for mentees; to coordinate mentor-training; to execute mentee recruitment, selection, and retention; and to ensure that continued project evaluation and assessments occur. This role may be filled by a single individual or, in rare cases, multiple individuals. Coordination is a critical element of the program and should include a sustainable commitment by those involved in the process for the entirety of the proposed project and clear plans when transitions are necessary. It is acceptable that some of the duties described here are handled by co-PIs as long as there are clear roles and responsibilities and a clear strategy for coordination across the leadership team.
 - **Mentors and co-mentors:** Mentors have the primary role in the network for leading the training and mentorship of postbaccalaureate participants each year. Networks may include and facilitate collaborations among researchers, institutions, or organizations, including universities, field stations, national laboratories, industry, government agencies, non-governmental organizations, private sector institutions and teaching and research centers. Mentors may work with co-mentors, who may include postdoctoral scholars, collaborators, and/or advanced Ph.D. students; however all individuals who serve as a mentor or co-mentor are expected to be trained in inclusive and culturally-aware mentoring strategies. Mentors are responsible for overseeing the participants' training and coordinating activities with the co-mentors who work under the mentors' direction. High-quality mentoring of participants is a demanding time commitment; thus, incentives and strong support for mentors and co-mentors in this role are expected. Proposed activities should provide clear benefits to the mentors, co-mentors, and other STEM professionals in the research network. Proposals must include a description of mentor training (existing training programs or new) as well as how mentors will engage with mentees. There must be clear linkages with the proposal science theme and NSF BIO's supported research areas. Evidence of commitment from mentors and participant institutions to mentees should be described. The network must ensure that mentors and co-mentors receive formal training prior to being assigned a mentee and must outline strategies for the recruitment, training, and inclusion of new mentors for the new cohorts of mentees. Approximately 8-12 mentors should be identified in the proposal with a specific plan to add and train new mentors for the second and third cohort of postbaccalaureate participants (a list of mentors and co-mentors must be submitted as a combined RaMP Participant List document - see proposal preparation instructions). Mentors and co-mentors (along with the Project Coordinator if named at the time of submission) must be listed as Senior Personnel with Biographical Sketches, Current and Pending Support, and Collaborators and Other Affiliations Information included in the Senior Personnel section of the proposal.
 - **Postbaccalaureate Participants (mentees):** Participants receiving stipend support must be U.S. citizens, U.S. nationals, or permanent residents of the United States. Participants must be appointed for one full year. Participants must have a baccalaureate college degree in a relevant field before the start of the fellowship (applicants must apply to the program before or within four years of graduation, with extensions allowed for family, medical or military leave). The program goal is to offer opportunities to those who had little or no research experiences during college to facilitate entry into the STEM workforce. Individuals accepted into or already participating in graduate programs are not eligible.
 - **Assessor:** It is expected that an independent assessor will work with the project coordinator, PI, and co-PIs to perform both formative and summative assessments of the mentees, mentors and co-mentors to ensure project goals are being met and to allow for course-corrections throughout the program. The assessor can be from the same institution or outside the lead institution, but must be independent of project participants.
3. **Recruitment, Selection, and Retention Plan:** It is expected that proposers develop and describe a convincing and well-conceived strategy for mentee recruitment, selection, and retention using evidence-based practices grounded in research. Recruitment plans must demonstrate national-level efforts to attract diverse, eligible applicants. Networks are expected to provide opportunities to postbaccalaureate participants with limited prior training and research experience, including individuals from traditionally underrepresented groups, first generation students, and college graduates of lower-resourced institutions. This section should clearly address selection criteria, methods to pair students with research mentors and co-mentors, and logistical support to facilitate transitions into the program, all supported by inclusive best practices with the goal of broadening participation. All RaMP projects must use the NSF Education and Training Application system (ETAP - <https://www.nsfetap.org>) to manage postbaccalaureate applications and collect participant demographic information. The recruitment plan must outline specific efforts for the recruitment of participants from diverse social categories and/or identities including but not limited to: race, ethnicity, gender, sexual orientation, language, socio-economic status, disability status, veteran status, or geography. This section should also describe strategies for the recruitment and selection of mentors and other network participants.
4. **Mentoring Program Plan:** Projects should increase mentees' competency for future research-based or science-based careers related to current and future job market opportunities, including eligibility for graduate programs or competitive jobs in biological sciences. Proposals must describe a generalized mentoring program plan that includes individualized career-goal planning as well as use of mentoring compacts (i.e., agreements) for each mentee-mentor pair that describes clear expectations related to workload and hours of participation, credit attribution of research products and publications, ethical conduct guidelines, problem-mediation strategies, and benchmarks of progress. Plans must include details of proposed research and professional development activities, including how they will gather information from mentees to align the professional development activities with individual future career goals of mentees. Inclusive and culturally-aware mentorship should be at the core of the program using evidence-based and effective implementation of successful mentoring models. The program should include mentee-mentor activities and training supported by inclusive and culturally appropriate research-based best practices. Proposals must describe plans for building and sustaining professional relationships among participants, mentors, and co-mentors centered on the shared scientific and training goals and values. PIs are encouraged to provide opportunities for mentees to interact with other role models, including doctoral students, postdoctoral fellows, and diverse researchers from federal, tribal and state agencies, non-profit organizations, not-for-profit science-based organizations, and industry as well as research and teaching centers or institutes. It is expected that project mentoring plans will include training in all important components of research and professional work including skills in: technical and analytical activities, communication, team science, ethics, project management, leadership, and interpersonal interactions. Plans should also include deployment of a policy or code of conduct that addresses sexual harassment, other forms of harassment, and sexual assault. Finally, the plan must provide a detailed description of how mentors will be trained in culturally-aware mentoring (prior to mentee-assignment). Use of existing mentoring training programs or development of new ones is acceptable, but details must be provided.

Intellectual Contribution and Credit: The proposal should include a clear plan for the management of the rights of and credit to project mentees related to research products, including but not restricted to: data, tools, methods, code, models, manuscript authorship as authors or coauthors, and other intellectual contributions of mentees in the research programs in which they will be working. This information should complement, rather than overlap with, the Data Management Plan and explain how the project participants will collaboratively ensure a fair and equitable assignment of credit to all project participants based on agreed-upon criteria for contribution. Because different sub-disciplines and disciplines can have vastly different expectations related to credit, the proposers need to document how they will address these important policies for mentees who will be active contributors in research and so must receive credit. The research experiences are expected to provide clear opportunities for mentees to participate in manuscript development as part of their research experience with credit as authors or coauthors in publications as appropriate.

5. **Broader Impacts:** Outcomes of the project relevant to Broader Impacts must be highlighted in this section. We encourage activities that aim to expand

the network efforts, including best practices that increase the participation of underrepresented groups in biological sciences. Specific broader impacts may include plans to improve cohort training practices and mentoring programs at participating institutions and network partners, expand institutional research capacity, and reduce factors that limit career transitions and training opportunities for college graduates.

6. **Evaluation and Assessment Plan:** Proposals must describe a plan to measure the success of the project in achieving its goals, particularly the degree to which: (1) postbaccalaureate mentees have developed research and professional skills and expanded their knowledge in their research area; (2) the mentees have made progress in moving forward toward or deciding on their career pathway after their RaMP experience; and (3) the mentors are being effective in their roles and have access to the resources they need for effective mentoring. Evaluation should include formative assessments of both mentees and mentors throughout the project to ensure that it is progressing satisfactorily according to the project plan and may involve pre-project and post-project measures. In addition, it is highly desirable to have a structured means of tracking participants beyond completion of the program, with the aim of gauging the degree to which the network has influenced the participants' career paths. It is expected that an independent evaluator conducts the evaluation and assessment of the RaMP network. Proposals must follow the PAPGG with respect to Institutional Review Board (IRB) requirements. Data management for the evaluation and assessment plan must be described in the data management plan document (see supplementary documents).
7. **Project Outcomes and Dissemination Plan:** Projects are encouraged to document and describe the outcomes of their program strategies in achieving its goals for broad dissemination for other interested community members through appropriate venues such as social media, traditional media, peer-reviewed publications, professional society communications, websites, presentations, workshops, and other appropriate strategies to extend the reach of the program.

Budget Guidelines: The maximum request per eligible network is \$3,000,000 for up to 48 months to facilitate network establishment, mentor training, mentee recruitment and selection, and network assessment and evaluation at the outset of the funding period in addition to the training and mentoring of 3 cohorts of participants.

All support costs for participants should be listed on Line F, "Participant Support," of the budget.

- Postbaccalaureate participant stipends should be a minimum of \$32,500 per year for each of the postbaccalaureate participants. Programs in areas with higher costs of living may adjust stipends to salary commensurate with the host institution's relevant payroll schedule. Stipend cost may include fringe benefits to cover individual or family health insurance. New participants supported with stipends will be recruited during each year of the project. Individual participants can only be supported for one year.
- Mentee-support research funds, up to \$10,000 per participant per year, may be requested to cover research expenses under participant cost materials. Mentee-support professional development funds may be requested to support professional development that includes: training or workshops, travel to a national conference to present research outcomes or to enhance research training with a collaborator at a different institution (exchange visits) or in a non-academic setting to acquire new skills (e.g., industry laboratories, industry research and development groups, startup businesses, etc.). Programs may consider mechanisms to facilitate early support from stipends in order to facilitate participant needs.

Support costs for PI, co-PIs, Senior Personnel and other network members should be listed in the appropriate sections of the budget.

- Salary and fringe benefits support for a program coordinator to implement and direct the program is allowable.
- Salary for lead PI or co-PI(s) and other staff is allowed following limits in the PAPGG. Duties and responsibilities of the Program Coordinator, PIs, co-PI(s), Assessor, and others should be clearly described in the budget justification.
- Funds to support mentors and co-mentors for training, networking, and attendance to a national conference with the mentees are allowed.
- Mentors and their co-mentors may be provided up to a total of \$10,000 dollars per year in order to support their time commitment to mentoring, training and professional development activities.
- The network should schedule an annual required meeting for mentees, mentors, co-mentors, and other network participants to present research outcomes and to facilitate networking opportunities and professional development of all network members. Although preference is given for in-person meetings, well-justified use of online communication can be substituted as needed in the networking design.
- Funds are expected to be used to support formal evaluation and assessment activities and workshop development, and/or other related costs that incur direct costs.
- Awards of up to 48 months are allowed to facilitate network establishment, mentor training, mentee recruitment and selection, and preparation for network assessment and evaluation prior to the initiation of the first cohort of mentees.
- IACUC and IRB requirements: Proposals should follow the PAPGG for IACUC (Institutional Animal Care Committee) and IRB requirements.

Data Management Plan: The PAPGG requires the inclusion of a Data Management Plan with all full proposal submissions. The Data Management Plan can be no longer than two pages and must be inclusive of the entire project. All participant projects must ensure that data and biological materials are collected, archived, digitized, and made available using methods that allow current and future investigators to access data and material. Funded projects must disseminate project data broadly, using widely accepted electronic data standards, and a named publicly accessible data site. Investigators are strongly encouraged to make use of appropriate community infrastructure for data management and provide necessary training to project participants. Description of data management as part of the evaluation and assessment plan must be included. The Directorate for Biological Sciences provides additional context and guidance to PIs on the preparation of Data Management Plans here: <https://www.nsf.gov/bio/biodmp.jsp>. Proposals without this document will be Returned without Review.

Postdoctoral Research Mentoring Plan (if applicable): This one-page document should describe the mentoring of all postdocs in the project, including those at collaborating institutions and serving as co-mentors.

Supplementary Documents: The following documents are uploaded as Other Supplementary Documents:

- **Project Management Plan (with clearly defined and measurable objectives):** The Project Management Plan should (1) explain the organizational structure, (2) articulate how the leadership and coordinators will facilitate participant communication and interactions with other members of the network, (3) present a code of conduct policy, and (4) provide a timeline that specifies milestones and expected completion dates. The plan should include provisions for flexibility to allow the structure of the network and participant group to change over time as membership and the network's focus evolve. The Project Management Plan must describe specific roles of the Coordinator and network strategies to facilitate communication (virtual and in person) and interactions among all network members and the inclusion of network partners. The Project Management Plan should also include a timeline with expected completion dates for network establishment, mentor training, mentee recruitment and selection, professional development activities, mentoring activities, and project evaluation. The Project Management Plan must be no more than three pages in length. Proposals without this document will be Returned without Review.
- **Letters of Collaboration:** Supplementary Documents may include letters of collaboration from individuals or organizations that are integral to the proposed project but are neither senior personnel nor supported by subawards. This may include subsidiary involvement in some aspect of the project, cooperation on recruitment, mentoring, or training efforts. Letters of collaboration must focus solely on affirming that the individual or organization is willing to collaborate on the project as specified in the Project Description or the Facilities, Equipment and Other Resources section of the proposal. No additional description of research activities or endorsements of the potential value or significance of the project may be included. Each letter of collaboration must be signed by the designated collaborator. Requests to collaborators for letters of collaboration should be made by the PI well in

advance of the planned proposal submission date because they must be included at the time of the proposal submission. PIs should use the recommended template for letters of collaboration from the PAPPG (Chapter II.C.2.d(iv)).

Single-Copy Documents:

- **Suggested Reviewers:** PIs are encouraged to provide a list of suggested reviewers, including the individuals' names, institutions, areas of expertise, email addresses, and URLs if available. Please ensure no one on this list has a conflict with the proposal.

Other Required Documents:

- **Combined RaMP Participant List Document:** The template found at https://www.nsf.gov/bio/dbi/RaMP_Participant_List.xlsx, contains two tabs. Please read the Instructions carefully and follow guidance. Using the template, compile an Excel Workbook that identifies RAMP network Senior Personnel (including mentors and co-mentors). Following the Instructions provided in the template, the completed Excel Workbook should be emailed to RaMP@nsf.gov immediately after you submit your proposal, but no later than 5pm EDT on the Tuesday of the week following the deadline (e.g., no later than 5 pm EDT on February 21st in 2023). This document is for the NSF internal review process. Proposals from PIs who fail to submit the required Excel document by 5PM EDT on the Tuesday of the following week will be immediately returned without review. Do not use the temporary proposal number to fill out the template. You must use only an assigned NSF Proposal ID, which should be seven digits long and will start with the fiscal year numbers (e.g., for FY23, all the Proposal ID's will start with "23"). Do not send in the RAMP participant list until you have been assigned the official NSF Proposal ID at the time of submission. Include the NSF proposal ID in the subject line and file title.

B. Budgetary Information

Cost Sharing:

Inclusion of voluntary committed cost sharing is prohibited.

C. Due Dates

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

February 16, 2023

January 18, 2024

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/ProposalPreparationandSubmission.html. For Research.gov user support, call the Research.gov Help Desk at 1-800-673-6188 or e-mail rgov@nsf.gov. The Research.gov Help Desk answers general technical questions related to the use of the Research.gov system. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this funding opportunity.

For Proposals Submitted Via Grants.gov:

Before using Grants.gov for the first time, each organization must register to create an institutional profile. Once registered, the applicant's organization can then apply for any federal grant on the Grants.gov website. Comprehensive information about using Grants.gov is available on the Grants.gov Applicant Resources webpage: <https://www.grants.gov/web/grants/applicants.html>. In addition, the NSF Grants.gov Application Guide (see link in Section V.A) provides instructions regarding the technical preparation of proposals via Grants.gov. For Grants.gov user support, contact the Grants.gov Contact Center at 1-800-518-4726 or by email: support@grants.gov. The Grants.gov Contact Center answers general technical questions related to the use of Grants.gov. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this solicitation.

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

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 Plan and the Postdoctoral Researcher Mentoring Plan, as appropriate.

Additional Solicitation Specific Review Criteria

Additional merit review considerations apply. Please see the full text of this solicitation for further information.

In addition, reviewers will be asked to evaluate proposals for:

- A coherent network structure that is designed to leverage a range of expertise and institutions to achieve the goals of this program and optimize the networking opportunities for all participants and that is well integrated with the science theme and cohort-structure of the mentees to create a cohesive training environment.
- A well-developed participant recruitment, selection, and retention plans with effective strategies for broadening participation.
- An effective, evidence-based inclusive and culturally-aware program for mentor-training that is well integrated into the entire project.
- An effective, evidence-based plan for mentoring of trainees that includes such factors as individualized components; clear expectations; training in critical thinking and interpersonal interactions; authentic research experiences; a sense of identifying and belonging to the cohort; culturally appropriate practices; fair assignment of research credit; and professional development.
- The effectiveness of the plans to evaluate and assess project progress and outcomes and for project dissemination.

B. Review and Selection Process

Proposals submitted in response to this program solicitation will be reviewed by Ad hoc Review and/or Panel 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 applicants whether their proposals have been declined or recommended for funding within six months. Large or particularly complex proposals or proposals from new awardees may require additional review and processing time. The time interval begins on the deadline or target date, or receipt date, whichever is later. The interval ends when the Division Director acts upon the Program Officer's recommendation.

After programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements 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:

In addition to the evaluation required as part of the project, awardees may be required to participate in NSF-sponsored across-the-sites evaluation and assessment activities. These activities will be conducted by NSF or its contractor(s) and necessitate access to project-related documents, staff, activities, and data. They may occur at any time during the grant period or shortly after the grant ends. Participation may include, but is not limited to, responding to inquiries (including surveys), engaging in interviews and focus groups, and providing requested data. NSF may arrange site visits or reverse site visits of during the lifetime of the awards.

C. Reporting Requirements

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

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

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

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

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:

- RaMP Working Group, telephone: (703) 292-8470, email: RAMP@nsf.gov

For questions related to the use of NSF systems contact:

- NSF Help Desk: 1-800-673-6188
- Research.gov Help Desk e-mail: rgov@nsf.gov

For questions relating to Grants.gov contact:

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

IX. OTHER INFORMATION

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

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

ABOUT THE NATIONAL SCIENCE FOUNDATION

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

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

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