



Targeted Infusion Projects (NSF 23-563) Proposal Preparation Guidance Webinar

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**HISTORICALLY BLACK COLLEGES AND UNIVERSITIES -
UNDERGRADUATE PROGRAM (HBCU-UP)**

**DIVISION OF EQUITY FOR EXCELLENCE IN STEM (ESS)
DIRECTORATE FOR STEM EDUCATION (EDU)
NATIONAL SCIENCE FOUNDATION**

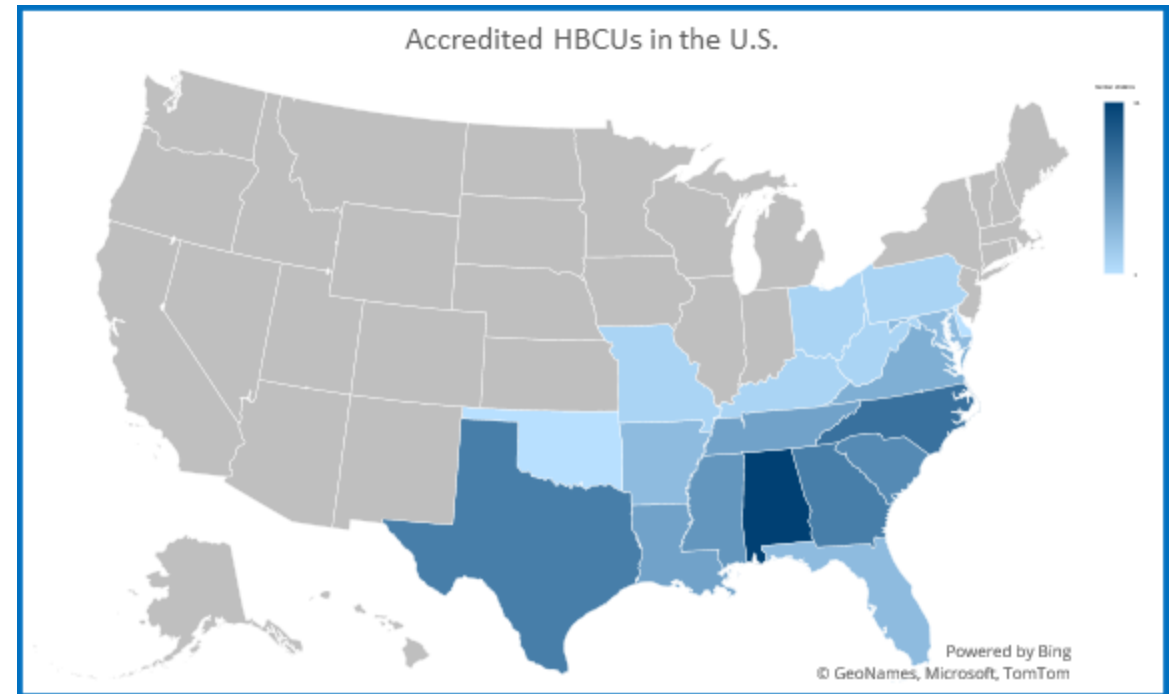
Agenda

- HBCU-UP Program Overview
- Targeted Infusion Projects Overview
- Proposal Preparation and Submission Guidelines
- Merit Review Process
- For Your Consideration



Historically Black Colleges and Universities – Undergraduate Program Overview

The Historically Black Colleges and Universities Undergraduate Program (HBCU-UP) is committed to enhancing the quality of undergraduate science, technology, engineering, and mathematics (STEM) education and research at HBCUs as a means to broaden participation in the Nation's STEM workforce.



HBCU-UP Overview *cont.*

Supports development, implementation, and the study of evidence-based, innovative models and approaches to prepare HBCU undergraduates for the STEM workforce.

- ✓ **Innovation in instruction and curriculum development**
- ✓ **STEM research experiences for undergraduates**
- ✓ **Critical transitions (K-12 to undergraduate, 2-year to 4-year, retention from freshman to sophomore, undergraduate to graduate)**
- ✓ STEM faculty professional and leadership development
- ✓ Enhance STEM faculty research
- ✓ **Research capacity building**
- ✓ Broadening participation research in STEM Education
- ✓ **STEM teacher preparation**



HBCU-UP Funding Tracks (NSF 23-563)

- Research on Broadening Participation in STEM (BPR)
- Research Initiation Awards (RIA)
- Targeted Infusion Projects (TIP)
- Implementation Projects (IMP)
- Broadening Participation Research Centers (BPRC)
- Other Funding Opportunities (PAPPG Chapter II)
 - Conference, Planning, Rapid Response Research (RAPID), and Early-Concept Grants for Exploratory Research (EAGER)



How do you seek to advance STEM Education and Research?

Faculty Research

- Research on Broadening Participation in STEM
- Research Initiation Awards

Institutional Change

- Targeted Infusion Projects
- Implementation Projects

National Impact

- Broadening Participation Research Centers



Targeted Infusion Projects (TIP) Overview

- Projects targeted to meet a short-term, well-defined goal to improve the quality of, and make innovations in, undergraduate STEM education
- Number of awards: up to 25 in FY 2024
- Project Length: Two to three years
- Award size: Up to \$400,000
- Restrictions: Equipment costs may not exceed 30% of the total budget requested
- The Principal Investigator (PI) for these projects should be the individual who will direct the implementation of the TIP activities



TIP Overview *cont.*

- Eligibility: HBCUs that are accredited and offer undergraduate educational degree programs in STEM
 - Proposals from HBCUs actively engaged in developing undergraduate STEM programs are encouraged
- An eligible institution can submit no more than two TIP proposals per year and can only have one active TIP for any given department or unit
- Although TIPs are typically focused on one activity within a single STEM department, inter- and cross-disciplinary projects are also encouraged



TIP Overview *cont.*

- Targeted Infusion Projects could create or adapt innovative learning experiences and pedagogies in STEM fields
- Projects could develop creative uses of cyberlearning, specifically learning with cyberinfrastructure tools
- Projects could enhance academic infrastructure by updating curriculum, modernizing laboratory research equipment, or improving the computational network array for research and education



TIP Overview *cont.*

- Projects could enhance existing degree programs, establish new degree programs or concentrations, secure specialized accreditation or certification, or infuse STEM programs with disciplinary field advances and evolving workforce requirements
- Projects could build explicit collaborations between STEM disciplines and teacher education programs
- Projects that develop faculty expertise, promote implementation of educational innovations, or link to the preparation of future K-12 teachers are encouraged

**Project development must be guided by
research on teaching and learning**



Proposal Preparation Instructions and Submission Guidelines

- The HBCU-UP program solicitation, NSF 23-563, is available at: [Historically Black Colleges and Universities Undergraduate Program \(HBCU-UP\) | NSF - National Science Foundation](#)
- The Proposal and Award Policies and Procedures Guide (PAPPG) is available at: [PAPPG \(NSF 23-1\) dated January 30, 2023](#)
 - This guide gives you step by step instructions on proposal preparation in Chapter II.



Important Proposal Submission Details

Letter of Intent

September 12,
2023*

*Second Tuesday in September,
Annually Thereafter

Full Proposal

November 9,
2023*

*Second Thursday in November,
Annually Thereafter

- LOIs are required for TIP full proposal submissions
- ALL full proposals should be submitted via [research.gov](https://www.research.gov)
- Associate LOI ID with full proposal (insert in box)

Related Letter of Intent

Refer to funding opportunity [NSF 20-559](#) to determine letter of intent requirements. If needed, enter a letter of intent ID number that uses the same solicitation as this proposal.

Letter of Intent ID Number (e.g., L7654321)



NSF Proposal Content

- Cover Sheet and Certifications
- Project Summary
 - Both intellectual merit and broader impacts described
- Table of Contents (Automatic)
- Project Description (up to 15 pages)
- References Cited
- Biographical Sketches (new format – SciENCv FAQ)
- Budgets and Budget Justification
- Current and Pending Support (new format)
- Facilities, Equipment and Other Resources



NSF Proposal Content *cont.*

- Special Information/Supplementary Documents
 - Mentoring Plans
 - Undergraduate/Graduate student and/or Post-Doctoral researcher (if applicable)
 - Data Management Plan
 - Letters of Support and Collaboration (PAPPG guidelines)
 - Quotes for equipment (>\$5,000)
 - Program specific documents (if applicable)
- Single Copy Documents
 - List of Suggested Reviewers (optional)
 - Collaborators and Other Affiliations



Proposal Preparation Instructions

Cover Sheet

Please begin the project title with “**Targeted Infusion Project: Followed by the title**”.

Be sure to check all boxes that apply. Each box refers you to a section in the PAPPG, if you have questions.

Project Summary

Each proposal must contain a summary of the proposed project not more than one page in length. The Project Summary consists of an **overview**, a statement on the **intellectual merit** of the proposed activity, and a statement on the **broader impacts** of the proposed activity.



Proposal Preparation Instructions *cont.*

Project Description

- 15-page limit
- The Project Description for NSF proposals must contain, as a separate section within the narrative, a discussion of the **intellectual merit and broader impacts** of the proposed activities. This should **not** be merely a repeat of the statements from the project summary, but an expansion of these statements
- In addition, where applicable, Intellectual Merit and Broader Impact activities **must** be described in two separate sections in the summary of **Results from Prior NSF Support**



Proposal Preparation Instructions *cont.*

Project Description *cont.*

- Projects must describe and make a strong case for how a project advances the knowledge base in STEM education through research, evaluation or a combination of research and evaluation processes
- The theoretical and empirical justification for the proposed project must be clearly articulated
- Describe the overall goal(s) and objectives of the project. The objectives must be clearly stated, measurable, and achievable within the proposed timeline
- Describe the benefits of achieving the goal(s) to the STEM education and research at the institution



Proposal Preparation Instructions *cont.*

Project Description *cont.*

- Baseline data should be included to provide context for the impact of the Targeted Infusion Project
- Describe the evidence-based strategies and activities that will be undertaken to achieve the goal(s). The strategies and activities must clearly be related to achieving the goal(s). This is the core of the project description
- Since institutions have different policies and procedures, such as for new degree program approval, explain how the project timelines reflect all institutional requirements



Proposal Preparation Instructions *cont.*

Project Description *cont.*

- Equipment and supplies – Please explain how:
 - Recurring costs, such as lab supplies for a newly created laboratory course, will be supported after the project ends
 - Long-term maintenance of new equipment will be supported after the project ends
- Provide a management plan for the project that will ensure that the activities, the evaluation, and the required reporting will be implemented on time and within budget
- Describe the plans to communicate the knowledge gained (including the results and outcomes of the project) to other professionals in STEM education and research, both during and after the project



Proposal Preparation Instructions *cont.*

Project Description *cont.*

- It is expected that each TIP will include a formative and summative evaluation plan. The evaluation plan must be linked to the goals and objectives
- An evaluator external to the project **is required**. The evaluator's credentials must be included
- Address institutional support for, and sustainability of, the project



Proposal Preparation Instructions *cont.*

Additional Proposal Preparation Instructions

- Include references cited in the proposal. Follow PAPPG guidelines. Be sure your references reflect the most current state of the research in your field, and you are citing them properly in the proposal
- Include biographical sketches in SciENCv Format, required beginning October 23, 2023
- Include current and pending support, as well as *facilities, equipment and other resources* pages and use NSF format
 - **Enter this proposal as pending support**



Proposal Preparation Instructions *cont.*

Budget and Budget Justification

- Use the PAPPG ([NSF 23-1](#)) and section IV. B. of the solicitation as a guide in preparing the budget
- Include a clear and detailed budget justification with your budget. The budget justification must correspond to the budget line items. All costs must be fully explained
- Write out clearly in your budget justification that you used the federally negotiated indirect cost rate of **xx%** and describe to which budget items this rate applies
- Targeted Infusion Projects should budget for the PI with the most day-to-day contact with the project to attend a 2-day grantee meeting in the Washington, DC area each year of the project



Proposal Preparation Instructions *cont.*

Facilities, Equipment & Other Resources

- Provide a description of available facilities and priorities for their use, if applicable. Please note that this section is a required part of the proposal
- This is the section where you may describe institutional support provided to your project. Such as, for example, the fact that the university will provide maintenance and utilities for a laboratory
- Do not provide any \$ amounts – voluntary committed cost sharing is not allowed



Proposal Preparation Instructions *cont.*

Supplementary Documentation

- In the special information/supplementary documentation section of the proposal, include the following information only:
 - Letter of support
 - Quotes for equipment (> \$5,000)
 - Data management plan
 - Postdoctoral researcher and/or undergraduate/graduate student mentoring plans
 - The evaluator's credentials

NOTE: The supplementary documentation section of the proposal may not be used to continue the project description.



Proposal Preparation Instructions *cont.*

Supplementary Documentation *cont.*

- **Data Management Plan:** All proposals must describe plans for data management and sharing of the products of research or assert the absence of the need for such plans. The data management plan will be reviewed as part of the intellectual merit or broader impacts of the proposal, or both, as appropriate. Information can be found at:
 - <https://www.nsf.gov/bfa/dias/policy/dmpdocs/ehr.pdf>
 - Other Resource: <https://dmptool.org>
- **Postdoctoral Researcher and/or Undergraduate/Graduate Student Mentoring Plan:** Each proposal that requests funding to support postdoctoral researchers, undergraduate or graduate students must include, as supplementary documents, a description of the mentoring activities that will be provided for such individuals



NSF Merit Review Criteria

- When evaluating NSF proposals, reviewers should 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 would accrue** if the project is successful
- Two criteria are to be given all due consideration during the review and decision-making processes: *each criterion is necessary but neither, by itself, is sufficient*
 - **Intellectual Merit:** The Intellectual Merit criterion encompasses the potential to advance knowledge
 - **Broader Impacts:** The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes

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



Intellectual Merit & Broader Impacts

What is the potential for the proposed activity to:

- Advance knowledge and understanding within its own field or across different fields (**Intellectual Merit**)?
- Benefit society or advance desired societal outcomes (**Broader Impacts**)?

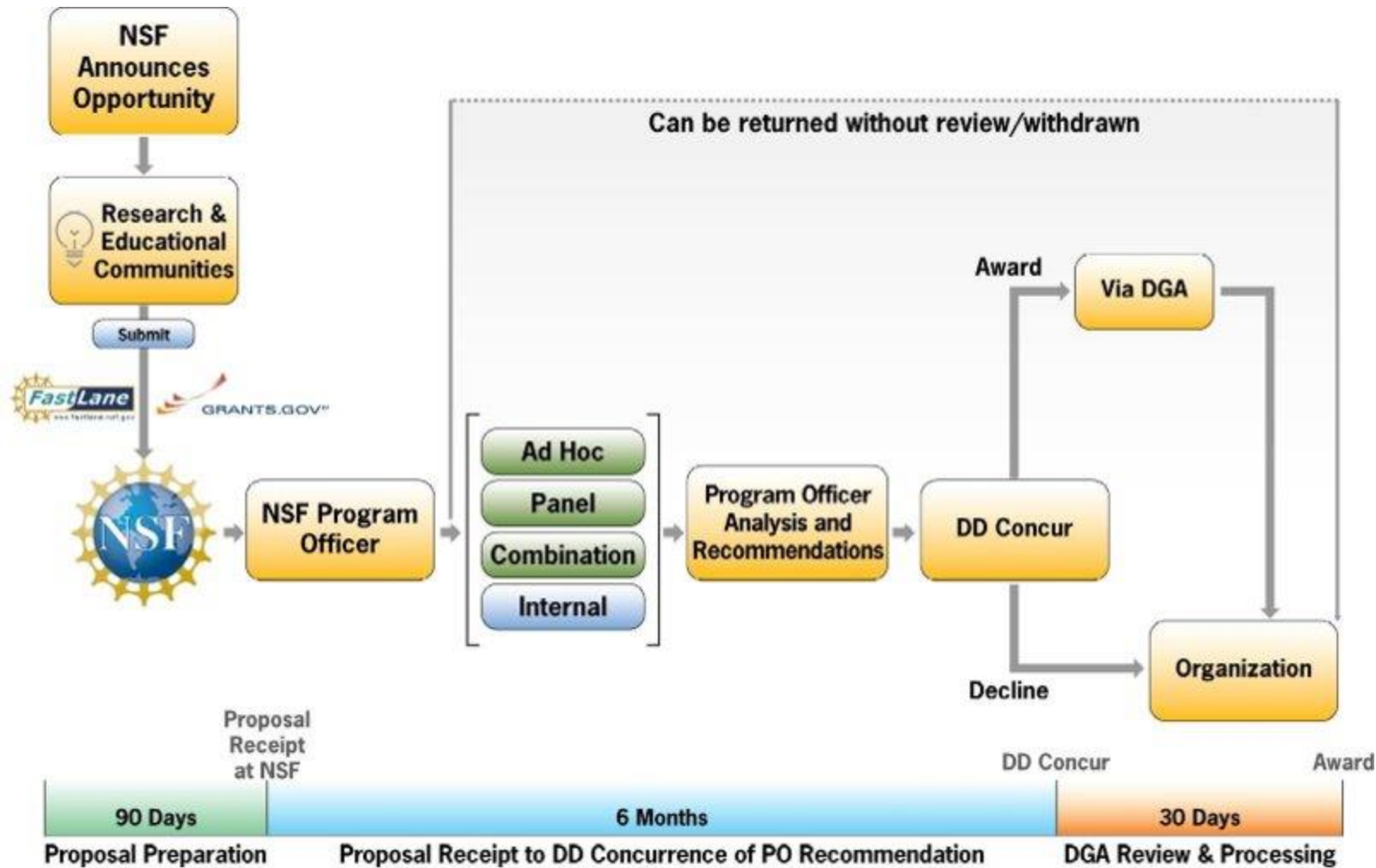


The following elements should also be considered in the review for both Intellectual Merit and Broader Impacts:

1. To what extent do the proposed activities suggest and explore creative, original, or **potentially transformative** concepts?
2. 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?
3. How **well qualified** is the individual, team, or organization to conduct the proposed activities?
4. Are there **adequate resources** available to the PI (either at the home organization or through collaborations) to carry out the proposed activities?



Proposal Processing: Average Duration



Common Concerns Leading to Declined Proposals

- Lack of organization of the proposal
- Lack of clarity or detail in the narrative
- Lack of adequate justification for the proposed project
- Lack of clear goals and objectives
- Lack of description of activities to be implemented
- No or little evidence of institutional support
- Sustainability not addressed
- Dissemination plan is generic and vague



Common Concerns Leading to Declined Proposals *cont.*

- Evaluation plan is generic and vague and does not link to goals and objectives
- Underdeveloped data management plan
- Weak letters of support and/or no letters of support
- If students are in budget, no discussion on how students will be engaged or the project's impact on students
- Proposal was not proof-read and has typos, font issues, illegible tables or charts
- Underdeveloped or weak Broader Impacts component



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 - To subscribe:
 - 1)Send an e-mail to LISTSERV@LISTSERV.NSF.GOV
 - 2)Leave the subject line blank
 - 3)The body of the message should say: subscribe HBCU 'your full name'
- Example of the body of your message:
 - Subscribe HBCU Percy Julian
- General Questions:
 - HBCU_UP@nsf.gov



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