NSF HBCU UP
RESEARCH INITIATION AWARDS (RIA)
PLANNING GUIDE

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Founded in 2003, Hanover has over 300 employees, including a high-caliber staff of researchers, survey experts, analysts, statisticians, and grant professionals. Hanover provides grant development and strategic advising support to education and healthcare organizations. Our grants professionals deliver customized proposal review, revision, and production support, while also helping to align their needs and strategic priorities to funding trends and federal, state, and foundation grant opportunities.

1. OVERVIEW

The Historically Black Colleges and Universities Undergraduate Program (HBCU UP) is committed to enhancing the quality of undergraduate STEM education and research at HBCUs as a means to broaden participation in the nation's STEM workforce. To this end, HBCU-UP provides awards to develop, implement, and study evidence-based innovative models and approaches for improving the preparation and success of HBCU undergraduate students so that they may pursue STEM graduate programs and/or careers. **Research Initiation Awards (RIA)**, which provide support for STEM faculty with no prior or recent research funding to pursue research at the home institution, a NSF-funded research center, a research-intensive institution, or a national laboratory. Project durations of up to three years to perform scientific research are supported. The project should further the faculty member's research capability and effectiveness, improve research and teaching at the home institution, and involve undergraduate students in research experiences. RIAs are for faculty who are starting to build or are rebuilding a research program. *Faculty members who hold or have held an external research award within the last three years are not eligible for the Research Initiation Award.*

- **Letter of Intent Due Date:** Research Initiation Awards due July 24, 2018.
- **Full Proposal Deadline(s) (due by 5 p.m. submitter's local time):** Research Initiation Awards due October 2, 2018.
- **Who May Serve as PI:** The Principal Investigator for a **Research Initiation Award** must be a faculty member in a STEM or STEM education discipline at the HBCU. Co-Principal Investigators and senior personnel are not permitted.
- **Proposal Formatting Information.** NSF's Proposal and Award Policies and Procedures Guide (NSF 18-1) (PAPPG) provides specific guidance for proposal content and formatting requirements. In addition to the PAPPG, the 2018 HBCU UP funding announcement contains additional instructions that take precedence for applications to this program.

2. LETTER OF INTENT COMPONENTS AND PROCESS

Letters of Intent are required to be submitted via NSF FastLane by July 24, 2018. Submission by an Authorized Organizational Representative (AOR) is required. A Minimum of 1 and Maximum of 4 Other Senior Project Personnel are permitted. AN institution may submit multiple Letters of Intent. The Letter of Intent should include the following information:

- The type of proposal that will be submitted (Research Initiation Award)
- The project title
- The PI name and Co-PI names, department, institution, phone, fax and email, and the PI listed as point of contact. The PI should be listed as the point of contact. Research Initiation Award letters of intent should list only the PI under Senior Project Personnel
- The submitting institution name
- A project synopsis (no more than 500 words) that describes the proposed research and/or implementation activities

3. APPLICATION COMPONENTS AND PROCESS

The application can be submitted online either via the Grants.gov or NSF FastLane system. Note that there are significant functional benefits to using NSF's FastLane and that *Hanover strongly recommends that all PIs and applicants submit using the FastLane system*.[1] General NSF formatting requirements are 1" margins, single spaced (no more than 6 lines per inch) using Arial, Courier New, or Palatino Linotype at a font size of 10 points or larger; Times New Roman at a font size of 11 points or larger; or Computer Modern family of fonts at a font size of 11 points or larger. The NSF PAPPG and the HBCU UP funding announcement provide additional instructions for the following specific proposal components:

COVER SHEET - Begin the project title with "Research Initiation Award:"

PROJECT SUMMARY – 1 page limit. 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. The overview includes a description of the activity that would result if the proposal were funded and a statement of objectives and methods to be employed. The statement on intellectual merit should describe the potential of the proposed activity to advance knowledge. The statement on broader impacts should describe the potential of the proposed activity to benefit society and contribute to the achievement of specific, desired societal outcomes. The Project Summary should be written in the third person, informative to other persons working in the same or related fields, and, insofar as possible, understandable to a scientifically or technically literate lay reader. It should not be an abstract of the proposal. **Proposals that do not contain the Project Summary, including an overview and separate statements on intellectual merit and broader impacts will not be accepted by FastLane or will be returned without review.**

PROJECT DESCRIPTION - 15 page limit. The Project Description must contain, as a separate section within

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[1] Although submission via Grants.gov is allowed, we strongly recommend that HBCU UP applicants only use FastLane to avoid some of the reviewer biases displayed against Grants.gov users in the past.

the narrative, sections labeled "Intellectual Merit" and "Broader Impacts". These sections should further describe the intellectual merit and the broader impacts of the proposed work. Per the guidance in the PAPPG, results from prior NSF support must be provided for PIs and co-PIs who have received NSF support, including an award with an end date in the past five years. Results related to Intellectual Merit and Broader Impacts are described under two separate, distinct headlines.

The Project Description for a Research Initiation Awards proposal should also include the following:

- Provide a brief description of the PI's overall research and education goals.
- Provide a clear outline of the general plan of work, including the research questions or hypotheses, the broad design of activities to be undertaken, and, where appropriate, a clear description of experimental methods and procedures. Proposers should address what they 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. The project activities may be based on previously established and/or innovative methods and approaches, but in either case must be well justified.
- Identify the relationship of the proposed activities to the PI's projected longer term research goals.
- Provide a discussion of how those activities will benefit the research capacity at the institution.
- Provide a discussion of how undergraduate students will be involved in this research.
- Supply a plan for dissemination of this research.
- Supply a plan for how the progress of the research will be assessed.

REFERENCES CITED - Provide the references cited in the proposal.

BIOGRAPHICAL SKETCHES - Outline the experiences of the PI and co-PIs (two-page limit each person) using the PAPPG guidelines.

BUDGET FORM AND JUSTIFICATION DOCUMENTS

CURRENT AND PENDING SUPPORT- Use the formats provided in FastLane. Enter this proposal as pending support.

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. If not applicable, the proposer should enter "Not applicable" in the Facilities, Equipment, and Other Resources section of the proposal. Collaborators & Other Affiliations (COA) information specified in the PAPPG should be submitted using the instructions and spreadsheet template found on the Collaborators and Other Affiliations Information website athttps://www.nsf.gov/bfa/dias/policy/coa.jsp.

SUPPLEMENTARY DOCUMENTS
- DATA MANAGEMENT PLAN - Must be included as a supplementary document and should describe how the proposal will conform to NSF policy on the dissemination and sharing of research results. The plan should be commensurate with the scope and size of the proposal. Information can be found athttps://www.nsf.gov/bfa/dias/policy/dmp.jsp .

- POSTDOCTORAL RESEARCHER MENTORING PLAN - Must be included as a supplementary document if funding to support a postdoctoral researcher is requested.
- STUDENT MENTORING PLAN - HBCU-UP requires that proposals requesting funding to support students must include, as a supplementary document, a description of the mentoring activities that will be provided for such individuals. Mentoring plans for undergraduate students should be separate and different from mentoring plans for any graduate students that are involved in the project. Mentoring plans should not only speak to research mentoring for the students, but how the PIs will mentor and work with the students to achieve the next level in their scholastic or professional careers.

Supplementary Documents for a Research Initiation Awards proposal should also include the following:

- A letter of commitment from the PI's Department Chair or Dean stating that the PI will have institutional support in terms of allowance for release time, travel for research purposes, and access to existing research facilities.
- A mentoring plan for the PI from the Department Chair, Dean, or a senior faculty member. Note: if the letter of commitment and the mentoring plan are written by the same person, one document can be submitted.
- A letter of collaboration and mentoring plan from the PI's research collaborator.
- A mentoring plan from the PI for the undergraduate students that are involved in the project and the graduate students that may be involved in the project.

Review Process: Applications are reviewed by an NSF program officer and usually three to 10 external *ad hoc* or panel reviewers through an NSF merit review process that incorporates consideration of both the technical aspects of a proposed project and its potential to contribute more broadly to advancing the NSF's mission. [2] In addition to any program-specific criteria, reviewers will be asked to evaluate all proposals against two criteria:

- Intellectual Merit – the potential to advance knowledge; and
- Broader Impacts – the potential to benefit society and contribute to the achievement of specific, desired societal outcomes.

4. RECOMMENDED TASKS FOR HBCU UP RIA PROJECT AND PROPOSAL DEVELOPMENT

STEP 1 – CONTACT INSTITUTIONAL AND EXTERNAL STAKEHOLDERS/COLLABORATORS

PIs should contact and consult with institutional stakeholders that will assist the project to plan effective use and leveraging of existing institutional resources to develop the RIA project and the proposal. Examples of institutional and external stakeholders who might assist investigators will development of successful RIA projects and proposals include:

- Dean of Students

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[2] See the following link for a [comprehensive description of the NSF's merit review process](#).

- Director of Counseling/Advising and Student Support Services (and team)
- Student services representation across campuses
- Enrollment Management, including the admissions, registration, and financial aid offices
- Career and Academic Planning Centers
- The Chief Academic Officer, Dean, Department Chair, Center Directors, etc.
- Institutional Research staff
- Representatives of external stakeholders, e.g. local LEAs, NGOs, PTAs, industrial partners, governmental agencies, etc.

Investigators should obtain letters of collaboration from stakeholders that will play important, significant roles in supporting the RIA.

STEP 2 – ARTICULATE THE HBCU UP PROJECT VISION

The next set of questions serves to guide project and proposal development; they should help articulate the vision for the HBCU UP RIA project.

Planning Question 1: *What does the institutional data and relevant literature show in terms of the need for the RIA research and education project?*

What does institutional data and the relevant academic literature suggest regarding the need for the proposed RIA project and the proposed research and educational activities? HBCU-UP is particularly interested in building knowledge in areas related to the following questions:

- What are the underlying issues affecting the participation and success of African American students in STEM undergraduate education?
- What replicable models of successful STEM programs at HBCUs can be developed, described, and adopted by other HBCUs and other institutions that serve underrepresented minority students?
- What are effective methods of increasing the capacity of HBCUs to produce more STEM graduates who are highly qualified for the STEM workforce or graduate school?
- What models of collaborations and partnerships have the greatest short- and long-term positive impact for the HBCU institution, faculty, and/or students?

Planning Question 2: *What are the project's objectives?*

What are the investigator's vision, goals, and targeted outcomes for the proposed research initiation project? What methods will be used? What are the expected outcomes? How is this proposed project novel and potentially transformative for the investigator, the institution, and the discipline? What literature supports the need for the proposed research informing the RIA project?

Planning Question 3: *What is the project's management plan?*

How will you manage the project across the two years of RIA support? How will you structure and implement research activities and manage research assistants at various levels (e.g. undergrads, grad students, and post-docs? How will you work with your internal and external collaborators? How will you collect and manage data generated by the project? What is the plan for disclosing and disseminating

research outcomes? How will you ensure proper and efficient administration of the project—including the organizational placement of the project; the time commitment of key project staff; and the specific plans for financial management, student records management, data collection, and personnel management? How will the success of the project be evaluated?

Planning Question 4: *What institutional resources, including education programs, equipment and facilities, and centers or offices support your project?*

What facilities, equipment, supplies, personnel, and other your institutional cash and in-kind resources will be committed to supplement the grant and enhance the project?

Planning Question 5: *How is the budget of the proposed HBCU UP RIA project reasonable, cost-effective, and adequate to support the project?*

Budget requests should be reasonable and appropriate to conduct the proposed work. Hanover can provide only general guidance on budget development. It recommends that proposers work closely with your institution's financial and sponsored projects offices to develop the project budget using institutional and NSF budget templates.

Planning Question 6: *How does the project evaluation plan enable the investigator(s) to evaluate the success and/or effectiveness of the project?*

Are the evaluation methods appropriate to the project? Do the evaluation methods include both quantitative and qualitative evaluation measures? Do the evaluation methods examine, in specific and measurable ways, using appropriate baseline data, the success of the project in improving the investigator's research capabilities and actual discoveries?

5. USEFUL LINKS FOR CONTACT AND PLANNING PURPOSES

COGNIZANT HBCU UP PROGRAM OFFICER(S):

Proposers are strongly encouraged to reach out to program officers to discuss ideas and requirements for HBCU UP projects. Please note that the following information is current at the time of publishing. See program website for any updates to the points of contact:

- Toni Edquist, Program Specialist, EHR/HRD, telephone: (703) 292-4649, email: tedquist@nsf.gov
- Earnestine Easter, Program Director, EHR/DGE, telephone: (703) 292-8112, email: epsalmon@nsf.gov
- Andrea Johnson, Program Director, EHR/HRD, telephone: (703) 292-5164, email: andjohns@nsf.gov
- Clytrice L. Watson, Program Director, EHR/HRD, telephone: (703) 292-4775, email: clwatson@nsf.gov
- Claudia Rankins, Program Director, EHR/HRD, telephone: (703) 292-8109, email: crankins@nsf.gov
- Randy Phelps, Staff Associate, OIA, telephone: (703)292-5049, email: rphelps@nsf.gov

HBCU-UP welcomes proposals that will pair well with the efforts of NSF INCLUDES (https://www.nsf.gov/news/special_reports/nsfincludes/index.jsp) to develop STEM talent from all sectors and groups in our society. Collaborations are encouraged between HBCU-UP proposals and existing NSF INCLUDES projects, provided the collaboration strengthens both projects.

OTHER HELPFUL RESOURCES:

1. National Science Foundation, National Center for Science and Engineering Statistics. 2017. Women, Minorities, and Persons with Disabilities in Science and Engineering: 2017, Special Report NSF 17-310. Arlington, VA. Available from https://www.nsf.gov/statistics/wmpd/.

2. U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics. 2014. Digest of Education Statistics. NCES 2016-006. Washington, DC. Available from: https://nces.ed.gov/pubs2016/2016006.pdf.

3. McKinsey Global Institute. 2011. Big data: The next frontier for innovation, competition, and productivity. Available from: http://www.mckinsey.com/insights/business_technology/big_data_the_next_frontier_for_innovation.

4. National Academies of Sciences, Engineering, and Medicine. 2016. *Barriers and Opportunities for 2-Year and 4-Year STEM Degrees: Systemic Change to Support Students' Diverse Pathways*. Washington, DC: The National Academies Press. Available from: https://doi.org/10.17226/21739.

5. Members of the Committee on Underrepresented Groups and the Expansion of the Science and Engineering Workforce Pipeline. 2010. NAS Report. Expanding Underrepresented Minority Participation: America's Science and Technology Talent at
the Crossroads. ISBN: 0-309-15969-5. Available from: http://www.nap.edu/catalog/12984.html.

6. National Academies of Sciences, Engineering, and Medicine. 2017. *Undergraduate Research Experiences for STEM Students: Successes, Challenges, and Opportunities*. Washington, DC: The National Academies Press. Available from:
https://doi.org/10.17226/24622.

7. National Research Council. 2012. Discipline-based Education Research: Understanding and Improving Learning in Undergraduate Science and Engineering. Washington, DC: National Academies Press. Available from: http://www.nap.edu/catalog.php.

8. Committee on Equal Opportunities in Science and Engineering. 2013. 2011 2012 Biennial Report to Congress: Broadening Participation in America's STEM Workforce. Available from:

https://www.nsf.gov/od/iia/activities/ceose/reports/Full_2011-
2012_CEOSE_Report_to_Congress_Final_03-04-2014.pdf.

These links provide a wealth of information about HBCU UP from the perspective of past reviewers and program officers.

- The NSF HBCU UP webinar slides include information on the chair's letter, and you can find an excellent annotated example:
  http://rds.ucmerced.edu/sites/rds.ucmerced.edu/files/event/templatedeptletter.pdf.

- Although written in 2007, NSF still offers this e-book as a resource:
  http://aries.imse.ksu.edu/nsf/NSF2014/subfolder/HBCU UP.pdf

- http://aries.imse.ksu.edu/nsf/NSF2015/subfolder/Gurpreet%20Singh.pdf

- NSF HBCU UP webinar slides: https://www.nsf.gov/mps/dms/HBCU
  UP_and_pecase_information/HBCU UP_webinar_slides_2015.pdf

- Example proposals with reviewer comments (from 2013):
  https://thmatters.wordpress.com/funding-opportunities-and-tips/HBCU UP-examples-
  proposalscomments/

- PDF with funded HBCU UP examples and annotation by a grant consultant (NOTE: due to the age of some examples, some elements of the structure are not appropriate for new submissions—most of these changes are noted in the consultant's comments, but always follow the most current NSF GPG and program solicitation): http://research.utsa.edu/wp-
  content/uploads/2015/02/HBCU UP-Workshop-Handouts-April-2015.pdf