

National Science Foundation



N A N O S C I E N C E
TRANSFORMING STEM EDUCATION
AT
HAMPTON UNIVERSITY

HBCU-UP ACE NANOHU PROGRAM

**REQUEST FOR PROPOSAL
#NANOHU2017-2018**

**FACULTY RESEARCH STARTUP AWARDS
IN
NANOSCIENCE
2017-2018**

**NanoHU Program Office
Turner Hall, Room 110, Hampton University**

**Contact: Mr. Brandon C. Parker (757) 728-6705
Dr. Michelle Claville (757) 727-6705
Email: NanoHU@hamptonu.edu**

New investigators are encouraged to apply

Non-STEM Faculty collaborative partnership with STEM Faculty encouraged



(Funding provided by the National Science Foundation under cooperative agreement number HRD – 1238838)

To learn more about NanoHU, visit <http://nanohu.science.hamptonu.edu>

COVER SHEET FOR PROPOSAL TO THE HBCU-UP ACE NANOHU PROGRAM

PROGRAM ANNOUNCEMENT/SOLICITATION NO./CLOSING DATE/

NanoHU #NANOHU2017-2018

February 13, 2017

FOR USE BY HBCU-UP ACE

PROPOSAL NUMBER

FOR CONSIDERATION BY:

HBCU-UP ACE NanoHU PROGRAM

DATE RECEIVED		NUMBER OF COPIES			
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NAME OF SUBMITTING DEPARTMENT(S)	MAILING ADDRESS OF SUBMITTING DEPARTMENT(S), INCLUDING 9 DIGIT ZIP CODE

TITLE OF PROPOSED PROJECT: HBCU-UP ACE NanoHU:

REQUESTED AMOUNT		REQUESTED STARTING DATE	
\$			

PI DEPARTMENT	PI MAILING ADDRESS

PI FAX NUMBER	

NAMES (TYPED)	High Degree	Yr of Degree	Telephone Number	Electronic Mail Address
PI NAME				
CO-PI NAME				

CERTIFICATION

Certification for Principal Investigators

I certify to the best of my knowledge that:

- (1) the statements herein (excluding scientific hypotheses and scientific opinions) are true and complete, and
- (2) the text and graphics herein as well as any accompanying publications or other documents, unless otherwise indicated, are the original work of the signatories or individuals working under their supervision. I agree to accept responsibility for the scientific conduct of the project and to provide the required project reports if an award is made as a result of this proposal.

Name (Typed)	Signature	Date
PI		
Co-Pi (if non-STEM)		

AUTHORIZATION TO SUBMIT

AUTHORIZED DEPARTMENT AND COLLEGE REPRESENTATIVE	SIGNATURE	DATE
NAME OF CHAIRPERSON OF PI(TYPED)		
NAME OF CHAIRPERSON OF CO-PI(TYPED)		
NAME OF DEAN OF PI (TYPED)		
NAME OF DEAN OF CO-PI (TYPED)		

SOLICITATION

HBCU-UP ACE NANOHU RESEARCH STARTUP PROGRAM

Program Solicitation: #NANOHU2017-2018

Full Proposal Deadline(s):

Proposals will be accepted through the submission deadline of 5:00 p.m. on February 13, 2017. Proposals received after this time and date will not be considered for review. No additional materials will be accepted after receipt of the proposal.

Background Synopsis:

Nanoscience Transforming STEM Education at Hampton University has the goal to develop and implement an integrated, multidisciplinary STEM research and education program in Nanoscience that prepares students for graduate studies and professional careers in the STEM. The project seeks to answer the question: Will the implementation of an interdisciplinary, nanoscience project at the institution accomplish a desired transformation within the university that will result in improved recruitment, retention and graduation of more, highly-qualified STEM graduates for entry into graduate schools or the STEM workforce? The objectives are to develop an undergraduate nanoscience curriculum concentration; engage students in nanoscience-related research throughout the academic year and summer session at national and international universities, national laboratories, and industries; offer professional workshops and seminars; provide "next steps" educational and career support; provide professional faculty development to increase their publication records; promote the nanoscience project to incoming and current STEM students to interest them in pursuing the nanoscience concentration; and increase awareness of local high school students in nanoscience and career opportunities in STEM.

This solicitation was prepared by the HBCU-UP ACE NanoHU Program at Hampton University.

PROGRAM REQUIREMENTS

Program Title: HBCU-UP ACE NanoHU Research Startup Program

Synopsis of Program:

This solicitation seeks to support the development of the Interdisciplinary Nanoscience Center (NanoHU) through the support of faculty research initiatives related to nanoscience with undergraduates and high school students that will advance laboratory research, field investigation and student research opportunities. The support program is designed to grow the culture of research at HU, and improve faculty scholarship record. This solicitation is a competitive opportunity for any HU department/college with STEM disciplines targeted by the HBCU-UP ACE NanoHU Program as well as non-STEM disciplines partnering with STEM disciplines.

Program Contact(s):

- Dr. Michelle Claville, Program Director
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E-mail: Michelle.Claville@hamptonu.edu
- Mr. Brandon C. Parker, Program Manager
Telephone: (757) 728-6705

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I. INTRODUCTION

The HBCU-UP ACE NanoHU Research Startup Program is designed to provide financial support for faculty to conduct nanoscience-related research and increase their publication record with undergraduate and high school students as co-authors at Hampton University.

Hampton University's faculty members (both STEM and non-STEM) are being invited to apply for sub-awards to conduct nanoscience-related research. Grants would pay for six weeks summer salary, \$2,000 in research supplies and \$1,000 for research-related domestic travel. Faculty who receive awards will be required to supervise the research projects of at least two undergraduate NanoHU students per year, and up to three high school student (from the outreach component) per summer of funding. Faculty members will also be expected to give technical seminars in the NanoHU seminar series. They will also be encouraged to collaborate with NanoHU institutional partners and consult with technical consultants (e.g. NSF Program Officers, grant-writing consultants). The support program is designed to grow the culture of research at HU, and improve faculty scholarship record so that funded faculty will have a minimum of one publication co-authored with undergraduate students annually. Applicants from non-STEM disciplines are encouraged to apply through collaborative partnerships with faculty members in the targeted STEM disciplines.

II. PROGRAM DESCRIPTION

The goal of the NanoHU Program is to build a formal nanoscience program that will recruit, retain, and graduate competitive students for engagement in the STEM enterprise. As such, the goal of the project is to develop and systematically implement an integrated, multidisciplinary STEM research and education program in nanoscience that prepares students for graduate studies and professional careers in the field of nanoscience. The program is designed to engage students in nanoscience-related research throughout the academic year and summer session at HU, national laboratories and/or international universities as a condition for earning the concentration in nanoscience.

Budget:

Grants will pay for six weeks summer salary, \$2,000 research supplies and \$1,000 research-related domestic travel. The anticipated start date for awards is April 1, 2017 (In preparation for summer research). The award duration requested should be consistent with research goals and requested funding, but should conclude in March 31, 2017.

III. AWARD INFORMATION

Anticipated Type of Award: Grant

Estimated Number of Awards: Five (5) minimum, based on availability of funds

Anticipated Funding Amount: 6 weeks summer salary per individual award plus \$2,000 for research supplies and \$1,000 for research-related domestic travel.

Award Period: April 3, 2017 to March 31, 2018

Budgetary Information

- **Cost Sharing Requirements:** Cost sharing is not required.
- **Indirect Cost (F&A) Limitations:** Not applicable.
- **Other Budgetary Limitations:** Other budgetary limitations apply. Please see the full text of this solicitation for further information.

Successful awardees will be required to:

- Actively participate in NanoHU program activities for Summer and Fall 2017, and Spring semester, 2018.
- Mentor at least two undergraduate NanoHU students per year, engaging students in nanoscience-related research throughout the academic year.
- Encourage and assist his/her mentee(s) to participate in nanoscience and related STEM summer internships and programs at national and/or international laboratories and universities.
- Provide research mentorship for up to three high school student for a 6-week summer program (June 20, 2017 – July 27, 2017).
- Attend and present technical seminars in the seminar course.
- Collaborate with NanoHU institutional partners and consult with the technical consultants.
- Participate in at least one grant writing training session (may be waived if prior training received within the last two years).
- Promote the nanoscience program to incoming and current HU STEM students to build their awareness of, and encourage interest in pursuing the nanoscience minor.

The anticipated outcome of a successful PI is to increase general scholarship record by increasing publication with undergraduate as co-authors with a minimum of one publication co-authored with undergraduate students annually.

IV. ELIGIBILITY INFORMATION

Proposals may be submitted by faculty from any of the STEM-related disciplines, or from any non-STEM related discipline through partnership with a STEM faculty/department. The following disciplines are targeted by the HBCU-UP ACE NanoHU Program: Biological Sciences; Chemistry; Computer Science; Engineering; Marine and Environmental Sciences; Mathematics; and Physics at Hampton University.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

- Submit **NanoHU Intent to Submit a Proposal** form to the NanoHU Program Office, Turner Hall Room 110 or email: nanohu@hamptonu.edu

➤ **Full Proposals due by 5:00pm on February 13, 2017:**

- **Email to: nanohu@hamptonu.edu with filename and subject of email: *Proposal_facultyname_NanoHU2017-2018***
- **Or hand-delivered in a sealed envelope labeled #NanoHU2017-2018 NanoHU Program Office, Turner Hall Room 110 Hampton University, Hampton, VA 23668**

B. Proposal Preparation Instructions

- Cover Page – required cover page (fillable form) must be completed and attached.
- Submit NanoHU Intent to Submit a Proposal form.
- Title – The title of the proposal must begin with “HBCU-UP ACE NanoHU:”
- Project Summary (Maximum length, 1 page). Briefly describe the proposed research project, the focus or type of research and research training that will be conducted, and the activities that would result if the NanoHU funds the project. The summary must also specifically address the following: 1) title of the project, the name of the PI and respective department, and the name of the co-PI and respective discipline; 2) intellectual merit of the project including the vision and rationale; and (3) broader impacts of the proposed project, including approaches to achieve goals for research innovation and leadership in the proposed field of research.
- Project Description (Minimum length, 5 pages, including all figures and charts). The project description must address the following items:
 - *Research Activities*. Describe the research and research training activities and projects to be conducted, and sources of other support, if any. In narrative or tabular form, list by number and type the personnel (e.g., senior personnel, postdoctoral fellows, graduate students, undergraduate students) who will be impacted by the research initiative. This section may include results from prior NSF, other support, if the PI or co-PI has received support from NSF or other agencies, including the Hampton University Faculty Research Award.
 - *Non-STEM partnership with STEM (if applicable)*. Provide details of the partnership of the non-STEM research with a STEM collaborator. State how this partnership will impact the future of nanoscience.
 - *Description of the Research Supplies and Need*. Provide a technical description of the requested supplies needed. Proposers are strongly encouraged to attach manufacturers’ quotes (not counted in the 5 page minimum). The description should be comprehensive enough to allow reviewers to evaluate the extent to which the supplies are essential and appropriate. A listing and/or description of related supplies currently available in the department(s) should be provided, and the request should be justified in this context. Justify the necessity and adequacy of the supplies requested, with reference to existing instruments.
 - *List anticipated research-related domestic travels*: Describe anticipated research-related travel, if available.
 - *Impact of Research Initiative*. Describe how the experiment will contribute to meeting the research and educational goals of the requesting department(s) and the University. Indicate how the experiment will attract researchers and undergraduate students in addition to improving the quality of their research training. Describe how HBCU-UP NanoHU Scholars and other undergraduate students in targeted STEM disciplines will be involved and how their education will be enhanced from said research initiative.
 - *Management Plan*. Describe how the experiment will be carried out. Provide sufficient detail to allow reviewers to evaluate whether the plan includes appropriate technical expertise and infrastructure to allow accomplishing research objectives

- *Mentorship*. Identify internal and external mentors to be used as resources to guide the research and career track.
- *Future plans*. Describe the future plans for the proposed work. Indicate possible conferences/meetings where the work be presented. Describe how this work will impact future research.
- Indicate plans for sustainability of research after May, 2018, identifying two or three agencies to which the PI will apply for sustained research funding.
- Describe the potential impact of the HBCU-UP ACE NanoHU Research on science, education, and the building of a diverse community of researchers at the University, and how these results will be disseminated beyond the University community.
- Cite References (one page, APA format).
- Attach budget and budget justification not to exceed three pages.
- Attach two-page biographical sketch for the PI. (NSF biosketch format)
- Indicate current and pending support from NSF and other federal agencies, to include: Agency Name, Contract Number, Project Title, Award Amount, Award Period, and Project Scope.

C. Budgetary Information

- **Cost Sharing:** Cost Sharing is not required.
- **Other Budgetary Limitations:** Expenditures are limited to salary, research supplies and research-related domestic travel only.

D. Due Dates: Full Proposal Deadline(s):

Proposals deadline submission is February 13, 2017 at 5:00 pm. Proposals received after this time and date will not be considered for review. No additional materials will be accepted after receipt of the proposal.

VI. PROCESSING AND REVIEW PROCEDURES

Proposals received will be reviewed by the Evaluation Committee for relevance prior to funding.

VII. AWARD ADMINISTRATION INFORMATION

A. Notification of the Award

Notification of an award will be made to the submitting entity upon final review and recommendations by the Evaluation Committee. Submitters whose proposals are declined will be advised as promptly as possible. Anticipated response date is March 10, 2017.

B. Award Conditions

Awards will consist of: (1) the award letter, which will include any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which will indicate the amounts, by categories of expense, on which the program has based its support; and (3) the applicable award conditions as per HBCU-UP ACE NanoHU Program and University guidelines.

C. Reporting Requirements

The awardees must submit a monthly status project report of the progress of the research project, and student involvement, to the HBCU-UP ACE NanoHU Program office to the attention of Brandon C. Parker, HBCU-UP ACE NanoHU Program Manager. Within 15 days after the expiration of an award (no later than May 22, 2017), the awardees are also

required to submit a final project report. The final report must include updated project reports, including information on research goals met, project participants (individual researchers and students as well as departments they represent), activities and findings, publications, and other specific products and contributions.

VIII. CONTACT INFORMATION

General inquiries regarding this program may be emailed NanoHU@hamptonu.edu or questions should be made to:

- Dr. Michelle Claville, Program Director
Telephone: (757) 727-5846
E-mail: Michelle.Claville@hamptonu.edu
- Mr. Brandon C. Parker, Program Manager
Telephone: (757) 728-6705
E-mail: Brandon.Parker@hamptonu.edu