



UNITED NEGRO COLLEGE FUND SPECIAL PROGRAMS
CORPORATION

RESEARCH INCENTIVE GRANT PROGRAM FOR TRIBAL COLLEGES AND UNIVERSITIES

Request for Proposals (RFP) Guidelines

Purpose

The United Negro College Fund Special Programs Corporation (UNCFSP) invites faculty and staff of Tribal Colleges and Universities (TCUs) to apply for UNCFSP Research Incentive Grant (RIG) projects. The goal of the RIG is to:

- To increase the number of underrepresented and underserved STEM students who pursue NASA-related, STEM careers and gain employment in the STEM workforce;
- To increase the number of participants who matriculate and successfully obtain a STEM degree through the introduction of effective, informal science techniques/tools,
- To monitor and assess the progression of student knowledge and attitudes towards the pursuit of a NASA-related, STEM career, as a result of utilizing innovative science education tools

In accord with these goals, UNCFSP seeks to fund projects designed to respond to these research questions: (1) To what extent are TCU students entering STEM careers?, (2) What are TCU student's knowledge, attitudes and beliefs related to STEM education and STEM careers, and (3) What activities or institutional processes encourage greater student interest in STEM careers. Institutions may propose, but are not limited to, one or more of the following undergraduate activities in order to respond to these research questions:

- Revising curricula and curricular materials, especially those that integrate cutting-edge science and technology practices that are based on NASA-generated data and space-related applications.
- Developing curriculum support materials such as videos, Power Point presentations, computer-implemented programs, and devices that illustrate science concepts or demonstrate principles.
- Creating faculty development activities. Faculty development activities may involve enhancing academic instruction; using computers, multimedia software, projection systems, and educational technology more effectively; taking courses, seminars, and workshops at other institutions; attending technical and educational conferences; and receiving training from software and equipment vendors.

In support of these activities, institutions may utilize funding for the following items:

- Providing access to remote computer networks for students that provide greater instructional capabilities than are available locally.
- Incorporating distance learning to reach geographically isolated students or to share courses with other campuses or institutions.
- Developing or purchasing pedagogical aids, such as video, slides, and multimedia software and image analysis.
- Curriculum development supplies.
- Student support.

In order to provide a larger context for proposed projects, the section that follows presents a brief overview of NASA's strategic plan and provides the underlying rationale for the factors that led UNCFSP to provide this opportunity.

Background

As identified in the *2006 NASA Strategic Plan*, education is one of the Agency's cross-cutting management strategies. NASA will continue the Agency's tradition of investing in the Nation's education programs and supporting the country's educators who play a key role in preparing, inspiring, exciting, encouraging, and nurturing the young minds of today that will manage and lead the Nation's laboratories and research centers of tomorrow.

A highly educated and well-prepared workforce has been and continues to be critical to the success of the Agency's mission. NASA's investment in education is directly linked to inspiring the next generation of explorers and innovators.

Beginning in 2006, NASA began pursuing three major education goals:

- **Strengthen NASA and the Nation's future workforce**—NASA will identify and develop the critical skills and capabilities needed to ensure achievement of the Vision for Space Exploration. To help meet this demand, NASA will continue contributing to the development of the Nation's science, technology, engineering, and mathematics (STEM) workforce of the future through a diverse portfolio of education initiatives that target America's students at all levels, especially those in traditionally underserved and underrepresented communities.
- **Attract and retain students in STEM disciplines**—NASA will focus on engaging and retaining students in STEM education programs to encourage their pursuit of educational disciplines and careers critical to NASA's future engineering, scientific, and technical missions.
- **Engage Americans in NASA's mission**—NASA will build strategic partnerships and linkages between STEM formal and informal education providers. Through hands-on, interactive educational activities, NASA will engage students, educators, families, the general public, and all Agency stakeholders to increase Americans' science and technology literacy.

Research Study Information

The UNCFSP's Center for Assessment, Planning & Accountability work to enhance the quality of UNCFSP and client programs by developing assessment tools and procedures, program planning consulting, practical application of accountability and data modeling, and applied interdisciplinary research on minority issues. Our researchers apply basic evaluative research methodology in the educational and social science arenas to investigate and inform on the best practices, models, ideas, approaches, etc. that can be used in practice to provide solutions to real-world issues. The Center additionally works in tandem with the Integrated Communication Technology Center to provide extensive data warehousing capability for national datasets, web-based survey administration and research and engaged quantitative research. CAPA will be providing research question for awarded institutions.

The selected TCUs will be required to develop a qualitative research design that has the purpose of better understanding the factors associated with the interest TCU students have regarding STEM fields. The qualitative design should consist of one or more of the following activities:

- Focus Groups
- Interviews
- Observation

- Or other appropriate methods

In addition to these activities, the UNCFSP CAPA will provide a survey that will be utilized by all awardees. This survey will assist with the capturing of the data necessary to answer the two research questions above. The research design outline should describe the specific research question, the methodology, and analysis plan.

In support of these activities, a small cash incentive may be given to each student who completes the survey or participates in an interview or focus group. The PI will work in partnership with (UNCFSP) to implement the study, recruit students and distribute the cash incentives to students who are eligible.

Eligibility

Eligibility is limited to faculty or staff at TCUs. Applications for the Research Incentive Program will be accepted by UNCFSP no later than June 12, 2009. Project investigators must be U. S. citizens.

Proposal Process

PROPOSAL COMPONENTS – The proposal shall contain no more than ten (10) pages, including the budget and appendix sections.

1. PROJECT SUMMARY – ABSTRACT (1 Page limit)
2. RESEARCH PURPOSE AND DESIGN/TIMELINE (5 Page limit). Include the following:
 - a. Research Purpose
 - b. Research Question
 - c. Research Hypothesis (What results are expected from the research activities?)
 - d. Methodology (What activities and methods will be used to assess the research activities [e.g. revising curricula materials and focus groups]?)
 - e. Evaluation Plan (What does the evaluation plan consist of?)
 - f. Study timeline
3. BUDGET – Include one page for budget details and one page for the budget justification/narrative (2 page limit)
4. APPENDIX

The appendix section should contain the CURRICULUM VITA for the Principal Investigator (PI), and should not to exceed two (2) pages. Two (2) additional pages will be allowed if the curriculum vita for a Co-PI is included.

Application Review Criteria

Award decisions will be based on a careful review and rating of the application by an independent review panel. Awards will be made to applicants who attain the highest score out of a maximum of **100 points**. Experienced reviewers will analyze and rate each application using the following criteria:

A. COVER LETTER & PROJECT SUMMARY ABSTRACT (10 points)

Each application should include a cover letter and one-page abstract of the proposed project.

B. RESEARCH PURPOSE (20 points)

Each application must describe a clearly defined project that helps to increase the number of students that pursue STEM as a discipline and/or as a career. In assessing the project purpose, reviewers will examine the degree to which the applicant clearly describes and convincingly links three major elements: (1) the problem to be addressed, (2) the proposed solution, and (3) the anticipated outcomes of the project.

C. RESEARCH DESIGN (40 points)

The reviewers will direct attention to the nuts and bolts of how the project will be implemented and evaluated. They will analyze how well the proposed project is conceived and organized. Are the conceptual framework, design, and methods adequately developed, well integrated, well reasoned, and appropriate to the aims of the project?

In assessing the project design, reviewers will examine the degree to which the applicant:

1. clearly describes the nature and scope of the research project and defines it's goals;
(5 points)

2. states the objectives as intended outcomes (what the target audience will know, feel and/or be able to do at the inclusion of the activity) that are SMART (Specific, Measurable, Appropriate, Realistic, and Time Specific); **(10 points)**. *The intent of the research study is to identify the activities that encourage greater interest in STEM careers;*
3. provides a detailed implementation schedule with timeline, outlining the specific activities that will take place to achieve the objectives, and the individuals responsible for the completion of tasks; **(5 points)**
4. has designed the proposed project to ensure that it will be completed in the specified time frame (feasibility); **(5 points)**
5. ensures the project team is adequately suited to carry out required work; **(5 points)**
6. will employ NASA resources in new and innovative ways to address the stated needs (innovation). **(10 points)**

D. BUDGET (20 points)

Each application should include a detailed budget with narrative justification. Reviewers will analyze the budget for clarity, thoroughness, and cost-effectiveness. They will also assess the degree to which the budget is reasonable and accurate, given project goals and objectives. Reviewers will examine whether the allocation of funds is sufficient to complete the tasks outlined in the project narrative.

E. EVALUATION PLAN (10 points)

The reviewers will assess the evaluation design for the extent to which: a) the evaluation process is clearly defined and described; b) the evaluation plan meets stated outcomes; and d) adequate resources are allocated.

Annual Timeline

June 26, 2009	Deadline for Application
August 1, 2009	Award Notification
September 1, 2009	Research Begins
January 1, 2010	Final Report Due

Awards

It is anticipated that seven (7) grants will be awarded in the amount of \$10,000 each.

Proposal Submission

Only one proposal per TCU will be accepted. This proposal should be submitted by the specified deadline. Multiple and/or late proposals will not be evaluated for funding. Proposals must address one or more of the three (3) objectives in the Purpose Section of this Request for Proposals. Proposals should be sent via mail to:

Mr. Clarence Brown
UNCFSP Research Incentive Grant Project
2750 Prosperity Avenue
Suite 600
Fairfax, VA 22301

Inquires may be emailed to Clarence.brown@uncfsp.org.

TCU Proposal Surveys

Information:

There are two surveys related to the project. One is an information survey to be completed by the project Principal Investigator (PI). The second is the student Knowledge, Attitudes, and Beliefs survey. The PI Survey asks for basic information that will enable you to identify the activities of your students. The student survey enables the collection of information that will allow you to identify what activities were successful in increasing the student's interest in STEM careers.

PI INSTITUTION INFORMATION SURVEY

Please enter the requested information (*enter NA if the question does not apply to your institution*):

	Science	Technology	Engineering	Mathematics
1. Please enter the number of graduates from your most recent graduating class that matriculated into a four-year institution by field.				
2. Please enter the percentage of graduates from your most recent graduating class that matriculated into a four-year institution by field.				
3. Please enter the number of graduates from your most recent graduating class that are now working in a STEM related field in a full-time position.				
4. Please enter the percentage of graduates from your most recent graduating class that are now working in a STEM related field in a full-time position.				
5. Please enter the number of freshmen that successfully completed course work for courses in each of the fields in the most recent academic semester				
6. Please enter the number of sophomores that successfully completed course work for courses in each of the fields in the most recent academic semester				
7. Please enter the number of juniors that successfully completed course work for courses in each of the fields in the most recent academic semester				
8. Please enter the number of seniors that successfully completed course work for courses in each of the fields in the most recent academic semester				

STUDENT SURVEY

1. Please select your student level
 - a. Freshman
 - b. Sophomore
 - c. Junior
 - d. Senior
 - e. Other

2. Please select your gender
 - a. Female
 - b. Male

The table below lists a variety of job titles. Please identify what field best aligns with the job title:

	Science	Technology	Engineering	Mathematics	Unknown
3. Software Engineer					
4. Risk Modeling Analyst					
5. Aerospace Engineer					
6. Physicist					
7. Datacommunications					
8. Mechanical Engineer					
9. Statistician					
10. Chemist					
11. Marine Biologist					
12. Computer Scientist					
13. Optoelectronics					
14. Data Quality Methodologist					

15. This field is the art of applying scientific and mathematical principles, experience, judgment, and common sense to make things that benefit people. People in this field design bridges and important medical equipment as well as processes for cleaning up toxic spills and systems for mass transit. Which field does this best represent?
 - a. Science
 - b. Technology
 - c. Engineering
 - d. Mathematics

16. People in this field are responsible for solving problems in a variety of areas that include business, engineering, physics, economics and science. They use computational techniques to solve these problems. Which field does this best represent?
 - a. Science
 - b. Technology
 - c. Engineering
 - d. Mathematics

17. People in this field have a high level of theoretical expertise and innovation they apply to complex problems and the creation or application of new technology. The areas of work span hardware design to programming-language design. Some researchers work on multidisciplinary projects, such as developing and advancing uses of virtual reality, extending human-computer interaction, or designing robots. Which field does this best represent?
- Science
 - Technology
 - Engineering
 - Mathematics

18. People in this field study the natural world, from the tiniest subatomic particles to the largest galaxies. They do experiments to discover the laws of nature. They study what things are made of (matter) and how things behave. They also study energy. They learn how it changes from one form to another. Which field does this best represent?
- Science
 - Technology
 - Engineering
 - Mathematics

Please select how **important** you think the following fields are:

	Very Important	Somewhat Important	Important	Not Important	Uncertain
19. Science					
20. Technology					
21. Engineering					
22. Mathematics					

Please select how **enjoyable** it is to **learn** about the following fields:

	Very Enjoyable	Somewhat Enjoyable	Enjoyable	Not Enjoyable	Uncertain
23. Science					
24. Technology					
25. Engineering					
26. Mathematics					

Please select how **valuable** you think it is to **learn** about the following fields:

	Very Valuable	Somewhat Valuable	Valuable	Not Valuable	Uncertain
27. Science					
28. Technology					
29. Engineering					
30. Mathematics					

Please select how **interested** you are in a **career** in the following fields:

	Very Interested	Somewhat Interested	Interested	Not Interested	Uncertain
31. Science					
32. Technology					
33. Engineering					
34. Mathematics					

Please select how **possible** you think it is for you to have a **career** in the following fields:

	Very Possible	Somewhat Possible	Possible	Not Possible	Uncertain
35. Science					
36. Technology					
37. Engineering					
38. Mathematics					

Please select how **relevant** the following fields are in your community:

	Very Relevant	Somewhat Relevant	Relevant	Not Relevant	Uncertain
39. Science					
40. Technology					
41. Engineering					
42. Mathematics					

Please select how **respected** the following fields are in your community:

	Very Respected	Somewhat Respected	Respected	Not Respected	Uncertain
43. Science					
44. Technology					
45. Engineering					
46. Mathematics					

47. When you hear the word scientist, what do you think?

48. When you hear the word technology, what do you think?

49. When you hear the word engineer, what do you think?

50. When you hear the word mathematician, what do you think?

51. Please state what kinds of activities could increase your interest in a STEM career: