Minority University Research and Education Programs
(MUREP) Small Programs (MSP)
Administered by (Multiple Grantees)
Type of Agreement (Multiple Grants)
Project Manager: Theresa Martinez
Kennedy Space Center
321-867-0590

PROJECT DESCRIPTION

MUREP strives to achieve the full participation of Minority Serving Institutions (MSIs) in the NASA-sponsored research and education community, as well as in enabling academic excellence and outstanding achievements. The MSP mission is to provide key investments that will enhance the Agency's MUREP portfolio and address critical areas within the Education Strategic Framework.

PROJECT GOALS

MSP's goal is to fund innovative STEM projects that address NASA's MUREP priorities. MSP is intended to provide initial funding of these projects for a specified term while they strengthen and transition to other funding sources. Recurring funding of projects is not expected, but may be limited to projects meeting critical Agency needs, exemplary performance assessment, and which successfully re-compete in subsequent solicitations.

As funding is available (based on HQ budget and existing MSP portfolio of projects), MSP will solicit Requests for Proposals targeting specific MUREP portfolio needs. The objectives to be met by these solicited projects will depend on the identified needs in the MUREP portfolio. MSP solicitations will state the education PART measures to be addressed by the proposals. The proposals will be evaluated and funded based on how effectively they meet these objectives while leveraging and/or contributing to existing NASA education projects.

PROJECT BENEFIT TO OUTCOME (1,2, OR 3)

All MSP goals and objectives are designed to support the Agency's Strategic Plan and the NASA Education goals, specifically, Education Outcome 1: Contribute to the development of the STEM workforce in disciplines needed to achieve NASA's strategic goals, through a portfolio of investments.

PROJECT ACCOMPLISHMENTS

In FY08, the following projects were implemented through MSP: Pre-service Teacher Conference (PSTC), and Achieving Competence in Computing, Engineering, and Space Science (ACCESS).

The objective of the PSTC project is to provide pre-service teachers and faculty members opportunities using technology to enhance their knowledge and skill in teaching mathematics and science at the elementary and middle school levels. The PSTC hosts several hundred prospective elementary and middle school teachers from selected MSIs and some majority institutions. Students and faculty are exposed to general sessions and hands-on workshops. The PSTC includes a Career Fair, where students have the opportunity to explore public school systems and graduate schools from across the country and meet with recruiters.

ACCESS provides a 10-week paid internship at NASA centers around the United States. It is designed for undergraduate and graduate students with disabilities who have strong backgrounds in science and a desire to pursue technical careers. Undergraduate students are provided a stipend of $5,250 and the graduate students stipend is $6,000. In addition, travel expenses are paid, up to a $1000 allowance. There is a provision for assistive technology and other reasonable worksite accommodations.

In FY08, MSP conducted an intramural call for project ideas from the NASA centers. MSP received less than the full funding expected for FY08 and could not conduct a full external solicitation. The intramural call was intended to strengthen selected MI's capability to respond to upcoming FY09 NASA Education solicitations, in particular Curriculum Improvement Partnership Award for the Integration of Research (CIPAIR), NASA Science and Technology Institute for Minority Institutions (NSTI-MI), and MSP. The projects submitted for this call were required to indicate how it would initiate or expand NASA's relationship with the MI as it aligns with the CIPAIR, NSTI-MI, and MSP projects. Successful project submissions under this call demonstrated active management of funds to make the most of the amount provided, as well as meeting the scope of the MSP project to fill gaps within the Higher Education portfolio. Four projects were selected to be implemented in FY09, detailed below.

GSFC, Title: New York City Research Initiative (NYCRI)
Teams consisting of a high school student, a high school teacher and an undergraduate are assigned to the principal investigators of NASA research projects. The NYCRI will consist of both summer research institute and an academic year component. NYCRI high school and college faculty will be required to formulate and implement NASA research based learning units in existing STEM courses. These courses and learning units will be used by partners to create a CIPAIR proposal for FY09.

LaRC, Title: Virginia State University (VSU)
The project objectives are to develop a strong university relationship with the NASA Langley Research Center and establish mechanisms for NASA professionals to provide

input to VSU of "NASA skills" needed. The main technical objective is to develop and test energy conversion devices such as electromagnetic motors, inverters, solar cells, thermoelectric generators, and sensors, possibly enhancing their performance and efficiency by the implementation of nanomaterials. The need for alternative energy sources is expected to be met by the use of nano-scale semiconductors, ceramics, metals and composites. With the research work sponsored by this project, the academic curriculum can be expanded and the teaching and research components can be integrated, achieving some of the objectives of CIPAIR.

MSFC, Title: Sustaining Partnerships through Rapid Prototyping & Laser Scanning Technology

The Navajo Technical College (NTC) curriculum development project will sustain the partnership between NTC and the National Center for Advanced Manufacturing (NCAM) and provide future interns, coop students, and employees skilled in the NASA mission critical areas of rapid prototyping, laser scanning and 3D modeling. Coupled with distance learning and the community of the Tribal College, this technology will be shared and used as a model for increasing STEM education with Tribal Colleges and Universities (TCU) who wish to participate. Dissemination through the DLN, conference presentations, invitational visits from other TCUs to NTC, and developing and sharing curriculum guides will be the focus of a subsequent proposal during FY 2009 for a follow-on MSP proposal or a CIPAIR proposal.

ARC, Title: Science Teacher and Researcher Cluster

The objective of this project is to provide an environment of real world scientific inquiry to pre-service teachers and engage them in inquiry-based methods as practiced by scientists in a discovery process. This will help produce student-centered, engaging teaching that science and mathematics teachers should be practicing in order to inspire today's children in STEM performance and careers. This project will establish a science teacher and researcher cluster at Ames, modeled after the NASA Science and Technical Institute (NSTI) project. Selected pre-service teachers from our minority affiliate institutions will spend a 10-week summer internship at Ames. The Ames Office of Education will leverage current NSTI infrastructure to facilitate the management and integration of this pilot program for future consideration for TCUs, and access to NASA content from other clusters for development of supplemental curriculum for classroom use.

PROJECT CONTRIBUTIONS TO PART MEASURES

MSP is accountable for Part Measure 6: Number of under-represented and under-served students participating in NASA higher education programs. Under this measure, 286 students participated in the PSTC. The ACCESS project funded 20 student internships.

IMPROVEMENTS MADE IN THE PAST YEAR

Starting in FY08, competitive solicitations were issued to award MSP funds. Four grants were awarded in response to this request for proposals. The MSP Project Manager insured that all applicable acquisition rules, requirements, and regulations were adhered to as outlined by NASA Grant and Procurement Offices. The MSP Project Manager also developed templates for funded projects, including a required yearly implementation plan and monthly reporting templates.

The MSP Project Manager also applied for and received the Project Management Professional (PMP) certification from the Project Management Institute (PMI). PMI is the world's leading not-for-profit association for the project management profession and the PMP certification is acknowledged globally.

PROJECT PARTNERS AND ROLE OF PARTNERS IN PROJECT EXECUTION

For FY08, the following is a list of project partners in the implementation of the MSP projects:

PSTC: Principle Investigator: National Institute of Aerospace (NIA); serving as project director and coordinator.
Conference Implementation: University of Maryland Eastern Shore (UMES): responsible for day-to-day tasks of conference planning and implementation.

ACCESS: Principle Investigator: The American Association for the Advancement of Science (AAAS); responsible for student recruitment, selection, reasonable accommodations and stipend payment. They also perform site visits and evaluation, as well as maintain longitudinal student data.