

NASA Administrator's Fellowship Project (NAFP)
FY 2009 Annual Performance Report
Administered by: United Negro College Fund Special Programs Corporation (UNCFSP)
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PROJECT DESCRIPTION

The NASA Administrator's Fellowship Project (NAFP) increases the research infrastructure capability of Minority Institutions (MIs) and strengthens the science, technology, engineering, and mathematics (STEM) curricula to better prepare underserved and underrepresented students to enter NASA and the Nation's STEM workforce. The project provides professional development fellowships for STEM faculty from MIs to conduct research at NASA Centers and fellowships for NASA scientists and engineers to teach, develop curriculum, and conduct research at Minority Institutions. Professional development includes training in project management, leadership development, and grant writing. NAFP fellows initiate and facilitate active partnerships between MIs and NASA Centers. NAFP fellows also mentor students, conduct STEM activities for precollege and college students, sponsor engineering design challenge teams and recruit students for NASA scholarships and internships.

PROJECT GOALS

The encompassing goal of NAFP is to enable MIs to participate fully in NASA's efforts toward fulfilling its mission. To do this, NAFP aims to increase the research capabilities and STEM curriculum of MIs. The NAFP develops leaders within NASA and at the MIs, leading to a significant impact on the number of diverse students entering the STEM workforce. The NAFP's three goals envelop these aims and guide the formation and direction of project activities.

Goal 1: Build the research capacities of MIs to respond to and engage in NASA research

- a. Develop STEM infrastructure to support NASA-related research and development
- b. Engage in activities that increase or enhance research conducted at MIs
- c. Create sustainable partnerships among MIs, NASA and industry

Goal 2: Develop leaders and change agents that will have the capability to positively impact NASA and MIs

- a. Align MIs' research focus with NASA's vision and mission
- b. Develop skills and competencies in project management and leadership
- c. Develop and implement an action plan for applying professional development skills when fellowship term concludes

Goal 3: Positively impact the NASA pipeline

- a. Develop and present projects, programs, or activities designed to increase precollege and postsecondary interest in NASA
- b. Mentor Harriett G. Jenkins Pre-Doctoral Fellowship Program fellows and assist participants in other programs such as Curriculum Improvement Partnership Award (CIPA) students, Graduate Student Researchers Project and Motivating Undergraduates in Science and Technology (MUST)
- c. Establish research collaborations that will provide research opportunities for additional faculty, students, and other stakeholders at NASA

PROJECT BENEFIT TO OUTCOME

Outcome 1: Contribute to the development of the STEM workforce in disciplines needed to achieve NASA's strategic goals, through a portfolio of investments.

The NAFP plays an integral role in the Higher Education Portfolio. It is a primary project for supporting **Objective 1.1 - Faculty and Research Support, Objective 1.4 - Course Development, and Objective 1.5 - Targeted Institution Research Academic Infrastructure.**

NAFP seeks to improve the capabilities of MIs to participate in NASA research and development and to improve the capabilities of MIs to prepare students for STEM careers. The benefits of NAFP to Outcome 1 are:

- Increased number of MI faculty engaged in and furthering NASA-related research.
- Increased number of NASA employees familiar with and able to capitalize on the research capabilities and competencies of MIs.
- Increased university research support for NASA's missions and programs.
- Increased research experiences for underrepresented and underserved students that translate into a more prepared STEM workforce pipeline.
- Improved STEM curricula to ensure that MIs better prepare students for participation in NASA and the Nation's STEM workforce.

PROJECT ACCOMPLISHMENTS

- Eighteen (18) fellows were active during FY09 serving 11 minority institutions. Faculty fellows were in residence at Stennis Space Center, Ames Research Center, and Marshall Space Flight Center.
- NAFP fellows wrote and collaborated on grant proposals resulting in awards from the National Science Foundation, Space Grant, Proctor and Gamble, Tennessee Department of Transportation, NASA Office of Education, Johnson Space Center, and Marshall Space Flight Center.
- NAFP fellows have instituted and coordinated precollege, university, and government sponsored STEM projects for underserved students in the Nashville,

TN, public schools; Madison County, AL, schools; Baltimore Public Schools; and the Salish Kootenai Tribal Community. Fellows mentored NASA University Student Launch and NASA Great Moonbuggy Race teams.

- NAFP fellows were instrumental in the university establishing a master's program in engineering at Alabama A&M, and fellows developed and taught the first two graduate courses in the program.
- A NAFP fellow facilitated a technical exchange between engineering managers at Marshall Space Flight Center and engineering faculty at Alabama A&M University.
- NAFP Fellows authored or co-authored 18 articles in peer-reviewed, technical journals and gave presentations at 21 technical conferences.
- NAFP fellows mentored NASA graduate fellows and undergraduate interns.
- The NAFP fellows contribute to NASA's diversity goals. The current ethnic distribution of fellows is 39 percent Black, 6 percent Hispanic, 22 percent White, 33 percent Other. Additionally, 28 percent of the fellows are female.
- The achievements of five NAFP fellows are featured on the NASA portal.

PROJECT CONTRIBUTIONS TO PART MEASURES

For the period: October 1, 2008 to September 2009

1.1 Faculty and Research Support

Total number of participants reported FY09 (Cohorts 11/12): 18

Total NAFP Faculty Research Awards: 10 (5 active, 5 new)

Five returning faculty fellows in Cohort 11 worked on Faculty Research Awards throughout FY 09. Five new awards were made to Cohort 12 faculty fellows.

1.4 Course Development

1.4.1 Number of new or revised courses targeted at the STEM skills needed by NASA that are developed with NASA support: 12 Courses

1.5 Targeted Institutions Research and Academic Infrastructure

1.5.1 Number of institutions served in designated EPSCoR states: 4 (11 MIs were served)

1.5.3 Ratio of funds leveraged by NASA funding support: 11 of 17 proposals submitted were for non-NASA funding with 6 awarded.

IMPROVEMENTS MADE IN THE PAST YEAR

1. Professional development activities were hosted by universities served through the NAFP. This strengthened university partnerships.
2. A new quarterly report form was developed to capture more specific data related to PART measures.
3. A letter of intent requirement was added to the application procedure to gauge geographic recruiting needs.

4. NAFP alumni served as colleagues for active fellows as well as mentors for summer interns.

PROJECT PARTNERSHIPS AND ROLE OF PARTNERS IN PROJECT

United Negro College Fund Special Programs Corporation (UNCFSP) has administered the NASA Administrator's Fellowship Project (NAFP) since 2000 through a cooperative agreement. UNCFSP has played an integral role in the development and overall success of the project with its unique networks and resources and its commitment to MIs.

NAFP Fellows have formed mutually beneficial partnerships among MIs, majority universities, national laboratories, NASA mission directorates, and the aerospace industry. Partnerships in FY 2009 included: the U.S. Army Aviation and Missile Command, Morgan State University, Tennessee State University, New Mexico State University, Salish Kootenai Tribal College, Oakwood University, Alabama A&M University, the Inter American University of Puerto Rico, San Francisco State, Texas Southern University, Prairie View A&M University, and the University of Texas, San Antonio.