Through sufficient infrastructure-building support, exposure to NASA’s unique mission and facilities, and involvement in competitive peer review and selection processes, MIs are able to contribute significantly to the Agency’s strategic goals and objectives.

through increased research training and exposure to cutting-edge technologies that better prepare them to enter STEM graduate programs, the NASA workforce pipeline, or employment in NASA-related industries.
The primary objectives of MUREP are to:

- Contribute to and promote the development of the research and academic infrastructure for Minority Institutions (MI) in areas of strategic importance to NASA.
- Improve the capabilities of MIs to gain support from sources outside of MUREP.
- Increase the participation of underrepresented and underserved students and MI faculty in NASA research and education opportunities.
- Increase the number of underrepresented and underserved students in STEM disciplines and careers by providing scholarships, fellowships and internship opportunities.
The first Executive Order for HBCUs was issued by President Jimmy Carter in 1980. Since that time each President has signed a new order during the first year of their Administration. Both the Hispanic and TCU Executive Orders were modeled after the HBCU ExO. As you will see the Tribal College EXO more closely models it than the Hispanic EXO.

All of these Executive Orders are in effect until President Obama issues new ones. To date, the Executive Directors for both the TCU and Hispanic Initiatives are vacant.

Does anything jump out at you when you look at the titles of the three EXOs?
MUREP Projects

- Research Clusters
  - Motivating Undergraduates in Science and Technology (MUST)
  - Curriculum Improvement Partnership Award for the Integration of Research into the Undergraduate Curriculum (CIPAIR)
  - NASA Science and Technology Institute for Minority Institutions (NSTI-MI)
  - Jenkins Predoctoral Fellowship Project (JPFP)
- University Research Centers (URCs)
- Minority Institutions Collaboration
  - MUREP Small Projects (MSP)
  - Tribal Colleges and Universities Project (TCUP)

- Innovation in Global Climate Change Education (GCCE) - Starting FY11
<table>
<thead>
<tr>
<th>PROJECT</th>
<th>NATIONAL AERONAUTICS &amp; SPACE ADMINISTRATION</th>
<th>FY 2011 Presidents Budget to Congress</th>
<th>[In Millions]</th>
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Dollar amounts are denoted in Millions.
**Motivating Undergraduates in Science and Technology (MUST)**

**MUST - Overview**

- Managed via a cooperative agreement with the MUST Consortium (the Hispanic College Fund (HCF), the United Negro College Fund Special Programs (UNCFSP) and the Society for Hispanic Professional Engineers (SHPE)).

- The MUST Program supports 100 undergraduate students pursuing degrees in STEM with a one-year competitive scholarship of up to one-half of tuition, not to exceed $10,000 and a $6,000 stipend to participate in a summer research experience at a NASA facility; May be renewed up to 3 years.

- Eligibility: U.S. Citizens – Sophomore or Junior – GPA = 3.0

- Focus on underrepresented and underserved students.


- Enriches scholar education through the MUST Professional Academic Support System (MUST PASS), an academic enrichment, mentoring, and career development system.
NASA Education  Harriett G. Jenkins Pre-doctoral Fellowship Project (JPFP)

- Competitive fellowships that successfully navigate students who are underrepresented in STEM disciplines through graduate school to enable their entry into the STEM workforce.
- 20 fellowships awarded annually that provide support for up to 3 years.
- JPFP Eligibility:
  o U.S. Citizenship Required
  o Underrepresented persons in STEM
  o Grad Student within first 3 years of program
  o Minimum 3.0 G.P.A.

Applications Available September 2010
**Fellowship Funding** - stipends & tuition for up to 3 years.
- Stipend: $22,000/yr (Ph.D.) & $16,000/yr (M.S.)
- Tuition Offset: $8,500/yr

**Mini Research Award** - Program provides fellows with the opportunity to participate in a 10 week “hands-on” NASA research experience.
- Stipend: $7,000

JPFP website: www.uncfsp.org/jpfp
Curriculum Improvement Partnership Award for the Integration of Research (CIPAIR) into the STEM Undergraduate Curriculum

Overview

- The primary goal of CIPAIR is to help two-year and four-year Minority Institutions strengthen their STEM curricula in order to attract more students into STEM-based academic programs, retain them, and prepare them for success when they take the next steps in their education or in their careers.

Objectives

(a) establishment or strengthening of relationships of MI faculty with NASA Centers; (b) integration of NASA-related content and research opportunities into the MI curriculum; (c) involvement of students in program development and improvement; and (d) commitment of the MI administration to long-term sustainability.
CIPAIR

Program Facts

- CIPAIR award - Three-years at $150,000 per year
- Eligible Institutions – Two-Year and Four-Year Minority Institutions
- Four-Year Institutions must have a Two-year Partner Institution
- Awardees enter into partnerships with a NASA Center
- A new CIPAIR solicitation will be available in April 2010
- Administered by UNCFSP – www.uncfsp.org
NASA Science and Technology Institute for Minority Institutions (NSTI-MIs)

- A project designed to strengthen the research capabilities of both faculty and students of MIs
- Managed at the NASA Ames Research Center in CA by UNCFSP

- Provides faculty and students opportunities to conduct NASA research through collaborations with NASA scientists

- Components: (1) Summer Scholars Program; (2) Institutional Research Clusters; and (3) Faculty Fellowships (Stipend: $12,500 for ten weeks)

- For application availability see the NSTI-MI website: http://www.uncfsp.org/nasa/
NSTI-MI: RESEARCH CLUSTERS

Information and Emerging Technologies (ARC)
- Nanoscale research for Aerospace and Thermal Protection Systems
- Supercomputing, Space Exploration, Air Traffic Management

Energy and Environmental (GRC)
- Alternative and renewable energy sources
- Energy management in space exploration
- Human habitation environment on Earth & space

Mission Enabling Technologies (JSC)
- Human exploration mission enabling research
- Science mission and payloads, biotechnology
- Astrobiology, human factors, advanced Life Support
MUREP Small Projects (MSP)

Overview

MSP is an umbrella term for STEM education initiatives that are part of MUREP's portfolio. The goal is to fund innovative STEM projects that address MUREP's priorities. MSP is intended to provide seed funding.

MSP supports a variety of activities for students, teachers, faculty, and researchers from underrepresented and underserved communities in NASA-related STEM fields.

One project is currently grandfathered: Achieving Competency in Computing, Engineering, and Space Science (ACCESS).

Eligibility: MSIs and Minority-Focused Organizations

Funding: Up to $150,000 per year for three years

FY10 Plans: To release a solicitation in FY10 for FY11 funding and implementation

Examples of MSP Awards Funded in FY 2009

- Florida A & M University (FAMU): Minority Innovation Challenges Institute
- Stetson University: Ana G. Mendez. Engaging MSI STEM Students Through Space-Based Capstone Design
- Avejo Technical College (NTC): Laser Scanning for Digital Manufacturing
Tribal Colleges and Universities Project (TCUP)

Overview

( TCUP ) is a science, technology, engineering and mathematics (STEM) educational grant and mentoring program that specifically targets Tribal Colleges and Universities.

The overall goal of the project is to expand opportunities for the nation’s Tribal Colleges to participate in the research and education opportunities of NASA through capacity building, infrastructure development, research experience, outreach, and information exchange.

There are three primary elements of the project:
1) Summer Research Experience (SRE), which provides NASA research, engineering, and education opportunities to Tribal College and University faculty and students;
2) Enrichment Grant program, which provides funding for the improvement of education, research, and learning infrastructures; and
3) STEM planning, coordination, and information exchange activities.

Primary NASA Partner: American Indian Higher Education Consortium

FY 2010 TCUP CAN for Project Administration: Selection in August
University Research Centers (URCs)

Awards are for 5 years, not to exceed $1 million per year

Annually 25% of the funding or $250,000 must be used as direct support to undergraduate and/or graduate students

NASA currently funds 13 URCs. For example;

Howard University – Center for Climate System Observation

Morgan State University - Center of Excellence in Systems Engineering for Space Exploration Technologies

Texas Southern University – Center for Bio-Nanotechnology and Environmental Research

Next URC Solicitation – FY 2012
Multidisciplinary research units performing scientific and/or engineering research in support of NASA's Mission Directorates.

Established at Minority Institutions (MIs) to expand the nation’s base for aerospace research and development; increase participation by faculty and students in the research programs of NASA’s Mission Directorates; and increase the number of underrepresented and underserved students at MIs who obtain advanced degrees in NASA-related fields.

**URC Participants**

- Norfolk State University
- Morgan State University
- Texas Southern University
- Southern University
- UPR at Rio Piedras
- CA State University at Los Angeles
- Tennessee State University
- UPR at Mayaguez
- University of TX at El Paso
- Fisk University
- Florida A&M University
- Clark Atlanta University
- Tuskegee University
- Hampton University
- City University of New York
- University of TX at Brownsville
- Alabama A&M University
- Prairie View A&M University
- Morehouse School of Medicine
- Howard University
- North Carolina A&T State University
- Florida International University
IGCCE Project Goals
1. Increase the climate literacy and level of engagement of the United States public

2. Create a diverse, highly skilled, and motivated future workforce in climate-related sciences

IGCCE Project Objectives

Through collaborations with Minority Institutions:

• Improve the teaching and learning about global climate change and Earth system science in elementary and secondary schools and on college campuses

• Increase the number of underrepresented and underserved students prepared to teach math and science

• Increase the number of students using NASA Earth observation data/NASA Earth system models to investigate and analyze global climate change issues

• Increase the number of undergraduate underrepresented and underserved students prepared for employment and/or to enter graduate school in technical fields relevant to global climate change
Diversity in Space Grant

National Space Grant College and Fellowship Program is a national network of state-based consortia designed to promote NASA’s interests throughout the country. The goal of the project is to contribute to the nation's science enterprise by funding education, research, and public service projects through a national network of university-based Space Grant consortia.

- **Diversity is a key focus of the Space Grant program:**
  - **Consortium management** – including the affiliate representatives and membership on Advisory Committees in each consortium
  - **Membership and meaningful engagement of minority-serving institutions in consortium activities**
    - Minority-Serving Institution Partnership Development Competition was targeted to enhance the involvement of MSIs
  - **Participation by underrepresented higher education students in research, education, and fellowships/scholarships**
    - Each consortium sets target participation percentages in line with the enrollment percentages of the National Center for Education Statistics
With additional available funds in 2009, the following awards were selected for the MSIPD:

<table>
<thead>
<tr>
<th>State</th>
<th>Title</th>
<th>Minority Serving Institution(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorado</td>
<td>Active Community College Experiences for Students in Space (ACCESS)</td>
<td>4 MSI Community Colleges</td>
</tr>
<tr>
<td>Illinois</td>
<td>An innovative program of mentoring and research to connect Chicago State University with University of Chicago, the Adler Planetarium, DePaul University, and Argonne National Lab</td>
<td>Chicago State University</td>
</tr>
<tr>
<td>Maryland</td>
<td>Student Research Collaboration and Exchange</td>
<td>* Morgan State University</td>
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<tr>
<td></td>
<td></td>
<td>* University of Maryland Paul H. Foster</td>
</tr>
<tr>
<td>Montana</td>
<td>Student Research Projects in Ground-Based Observing and Aurora Detector at Montana Tribal Colleges</td>
<td>7 Tribal Colleges</td>
</tr>
<tr>
<td>New Mexico</td>
<td>Expansion of the Spaceport America Student Launch Program</td>
<td>* 4 Hispanic-Serving Universities and Community Colleges</td>
</tr>
<tr>
<td>New York</td>
<td>Development of a CUNYSAT Program</td>
<td>Medgar Evers College, CUNY</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>Sky People: A Student Rocketry Initiative with the College of Mennonite Nation</td>
<td>4 Tribal Colleges</td>
</tr>
</tbody>
</table>

Most consortia are using this opportunity as a stepping stone to enhanced engagement and involvement with the participating MSIs.
• New MUREP Website -
  http://www.nasa.gov/offices/education/about/murep_overview.html

• Pre-application workshops: CIPAIR, URC, NSTI-MI, IGCCE

• Technical Assistance Workshops:
  White House Initiative on HBCUs Annual Technical Assistance Conference and
  New HBCU Presidents Orientation
  Tribal College Forum
  National Association of Sponsored Program Administrators Annual Meeting
  Institutional Site Visit

Conference Sponsorship
  HESTEC
  HENAAC/Great Minds in STEM
  Society of Hispanic Professional Engineers (SHPE)
  National Society of Black Engineers (NSBE)
  American Indian Science and Engineering Society
  National Society of Black Physicists and Hispanic Physicists