National Aeronautics and
Space Administration

NAC STEM Committee Report

18 JANUARY 2023

NAC STEM Engagement Committee Meeting

Friday, 30 September 2022 10 AM – 3 PM EST
Open to the Public

Daniel Dumbacher
Executive Director
American Institute of Aeronautics & Astronautics

Ray Mellado
Founder & Chairman
Great Minds in STEM

Darryl Williams
Senior Vice President of Science and Education
The Franklin Institute

Norman Fortenberry
Executive Director
American Society for Engineering Education

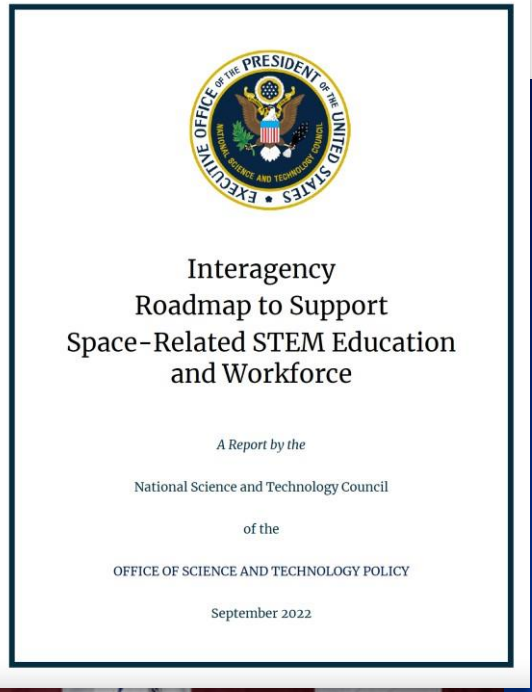
Kristin De Vivo
Executive Director
Lucas Education Research

Jamarius Reid, Student Representative
President, Student Government Association
Embry-Riddle Worldwide

Agenda:

- Opening Remarks by Chair
- OSTEM Recent Events
- Revisit NAC Topics of Interest
- STEM Engagement 2022 Priorities: Partnerships
- Formulation of New Findings and Recommendations
- Other Related Topics

National Space Council (NSpC)



OSTEM is making substantive contributions to the National Space Council (NSpC) priority for STEM Education efforts:

- Co-chair and membership on new Interagency Space STEM Task Force
- Active participation in drafting the Space STEM Roadmap

NASA will be a key contributor in execution of actions outlined in the roadmap

Remarks during recent NSpC:
Deputy OMB Director, Nani Coloretti stated"…the budget request seeks to broaden and diversify student participation in STEM to inspire and develop the next generation of scientists, engineers, and explorers…these investments are critical for delivering on the administration's priorities." Vice President Harris responded by saying "as we often say, the budget should reflect our priorities."

Back to School

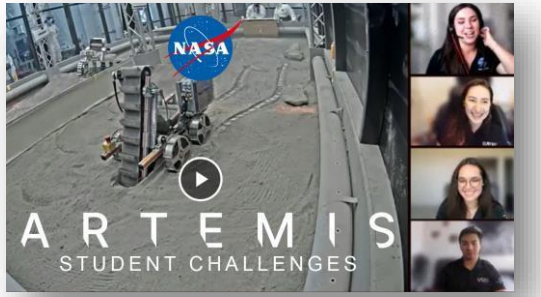
Campaign Overview

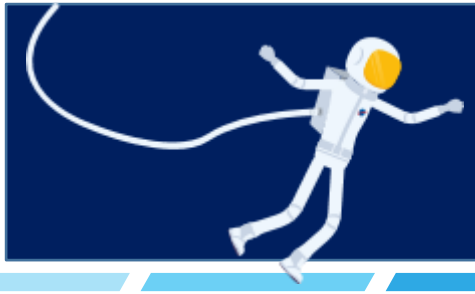
Week 1
- 9 Posts
- 448,000 Impressions
- 7,000 Engagements
- 57,000 Views

Week 3
- 7 Posts
- 392,000 Impressions
- 6,000 Engagements
- 52,000 Views

Week 2
- 7 Posts
- 889,000 Impressions
- 10,000 Engagements
- 71,000 Views

Totals
- **23 Posts**
- **1,730,000 Impressions**
- **23,000 Engagements**
- **180,000 Views**





28 agency accounts participated in the campaign.

Highlights

Week 1

Downlink Promo
- *211,000 Impressions*
- *2,000 Engagements*
- *41,000 Views*

Week 2

Victor Glover BTS Message
- *230,000 Impressions*
- *3,500 Engagements*
- *47,000 Views*

Week 3

ASC Twitch
- *81,000 Impressions*
- *2,300 Engagements*
- *39,500 Views (on Twitch)*

BACK TO SCHOOL

Side-By-Side

14 NASA Accounts Participated

125 posts from NASA STEM

Across Facebook & Twitter for the 3-Week Period:

39 Million Reach

2,000 Follower Gain

Back to School 2021

28 NASA Accounts Participated

45 posts from NASA STEM

Across Facebook & Twitter for the 3-Week Period:

76.8 Million Reach

2,256 Follower Gain

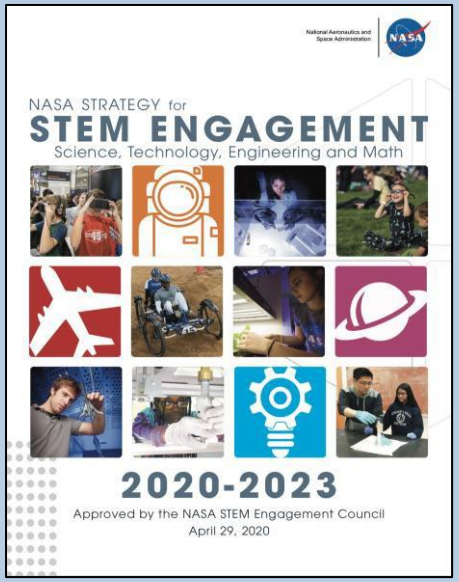
Back To School 2022

NASA STEM Engagement Strategy and Direction

NASA Strategic Objective 4.3

Build the next generation of explorers.

Engage students to build a diverse future STEM workforce.



NASA STEM Engagement Goals:

1. Create unique opportunities for a diverse set of students to contribute to NASA's work in exploration and discovery.
2. Build a diverse future STEM workforce by engaging students in authentic learning experiences with NASA's people, content, and facilities.
3. Attract diverse groups of students to STEM through learning opportunities that spark interest and provide connections to NASA's mission and work.

Focus Areas:

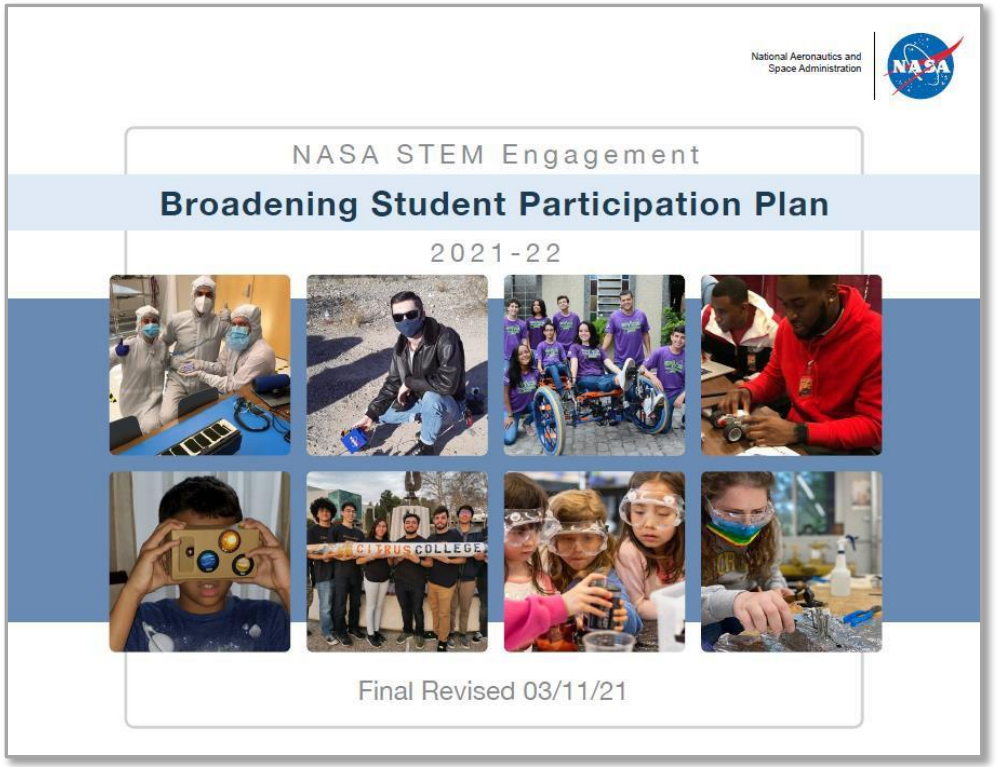
- **Broaden student participation** to increase diversity, equity, and inclusion in STEM through NASA opportunities and activities.
- **Build strategic partnerships and networks**, expanding NASA's STEM ecosystem to magnify reach and impact.
- **Expand NASA contributions in engaging K-12 students** in STEM pathways.

Focus Area: Broadening Student Participation

Purpose: *Provides an integrated set of efforts for broadening student participation to increase diversity, equity, and inclusion in STEM through NASA opportunities and activities.*

Overarching Goals:

1. Enhance communications and stakeholder engagement and build networks and relationships.
2. Strengthen practices and systems.
3. Focus on metrics and evaluation to effectively measure progress.
4. Drive a collective focus across NASA's STEM Engagement community.



INSPIRE - ENGAGE - EDUCATE - EMPLOY
The Next Generation of Explorers

Efforts to Broaden Student Participation

Where Are We Headed?

- Reexamining existing efforts
- Reevaluating **target goals** and developing a **formalized feedback process**
- Integrating DEIA requirements language in solicitations and contract awards
- FY 22 **performance assessment** and **evaluation studies**
- **Expanding partnerships** with other federal agencies (NSF, DoD, ED, NOAA)
- Strategically **leveraging partners, networks and influencers** to expand reach to underrepresented/ underserved students

FY22 New MUREP Awards

MUREP High Volume in Partnership with ARMD

Seeks to support the development of a broader technical aerospace high-volume manufacturing workforce while increasing interest in related entrepreneurship opportunities.

$3M / 4 Awards

CSUN California State University Northridge

University of North Texas

FIU Florida International University

Elizabeth City State University

MUREP PSI in Partnership with Department of Education

Designed to strengthen support for students in pre-college summer programs

$640k / 10 Awards

Lincoln University

Fayetteville State University

University of Baltimore

Lawson State Community College

Tuskegee University

Meharry Medical College

Prairie View A&M University

University of Maryland Eastern Shore

Alabama A&M University

Albany State University

MAIANSE CONNECT – Indigenous Institutions

Aimed at fostering connections between Indigenous culture and NASA.

$1.3M / 4 Awards

Navajo Technical University

NOC Northern Oklahoma College

University of Hawai'i

MSI Space Accelerator Challenge in Partnership with SMD

NASA's first MSI Space Accelerator designed to advance agency goals to improve future science missions.

$150k / 3 Faculty
- Access to incubators and venture capital mentoring
- 10 weeks to commercialize Idea

Fayetteville State University

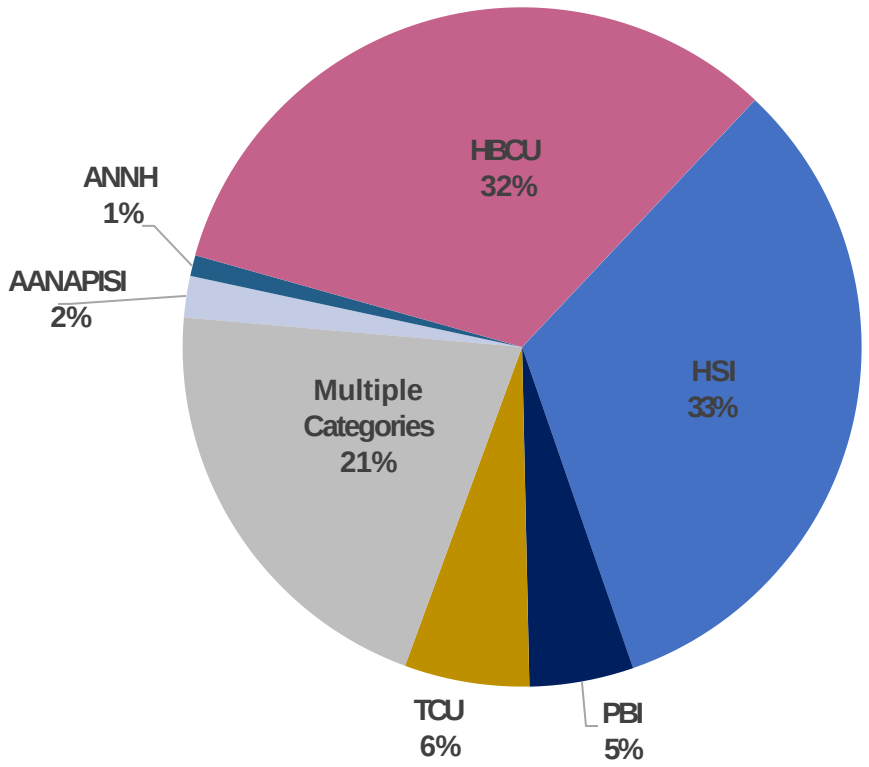
UMASS Boston

CSUN California State University Northridge

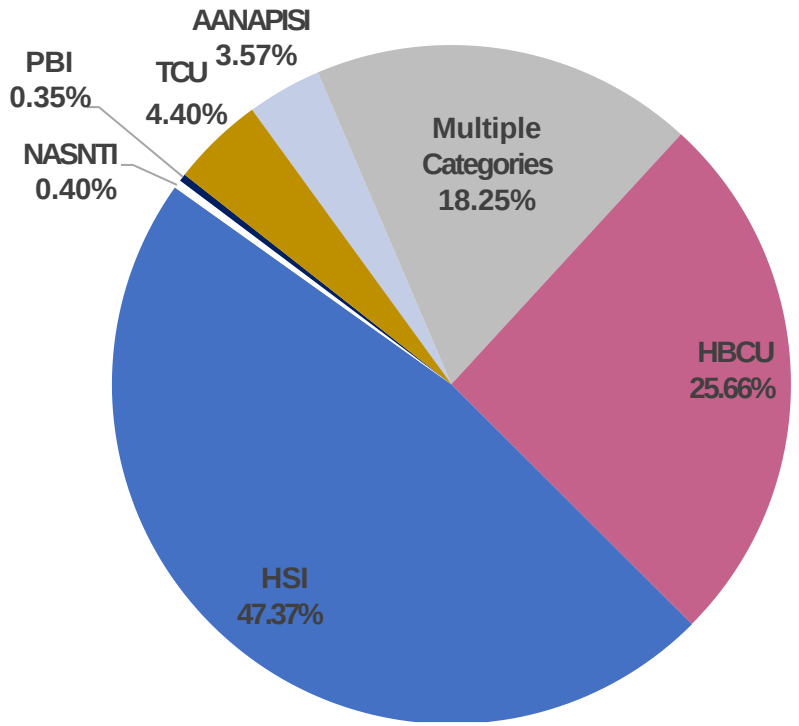
MUREP Award Obligations by MSI Type

(Grants & Cooperative Agreements)

FY21



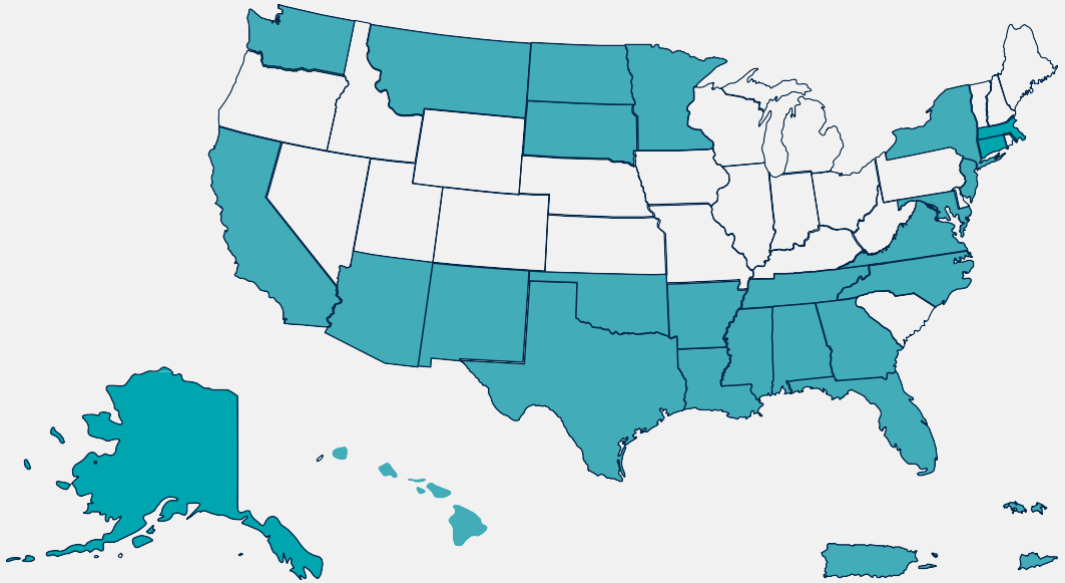
FY22



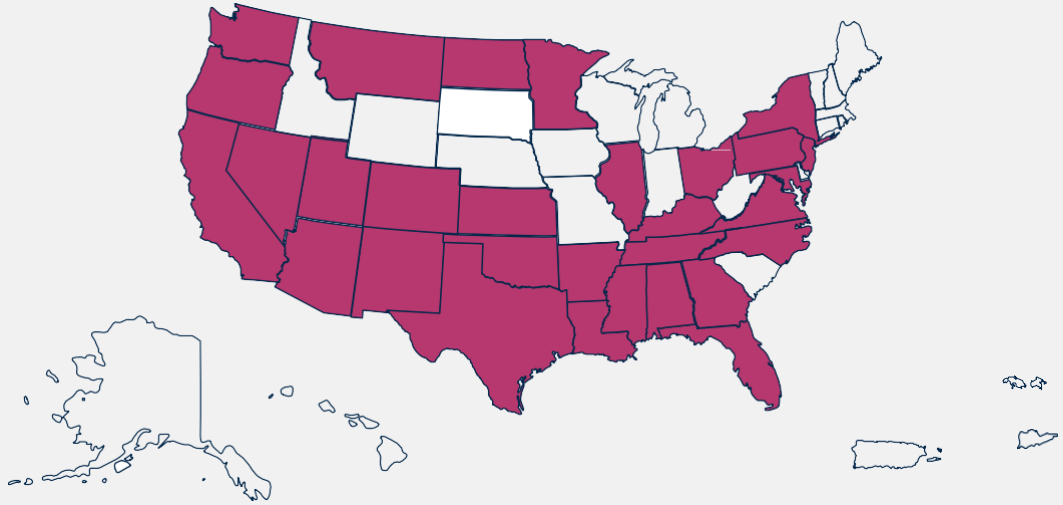
**Preliminary data as of September 2022*

FY2021 Map of MUREP MSI Engagement

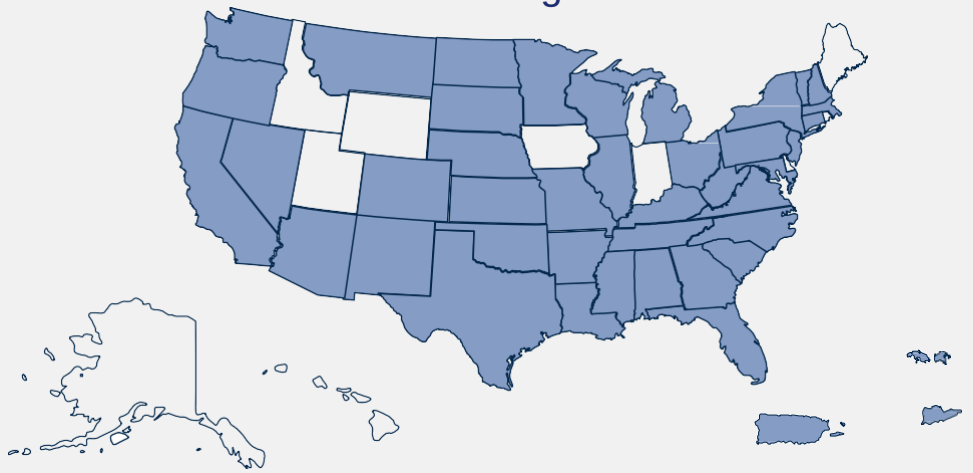
Active Awardees



Internship Placement



MSI Exchange



NASA/MSI Technology Infusion Road Tour

Objectives

- *Showcase HBCU / MSI Research Capabilities*
- *Matchmaking w/Govt Agencies, SBIR/STTR, Small Business & Prime Contractors*
- *Relationship Building to Enhance Partnerships & Maximize Opportunities for Success!*

Designed to address NASA's one percent (1%) federal contracting goal with HBCU/MSI partners.

Road Tour Stats – FY21/FY22

- 3 Events
- 131 MSIs Represented
- 267 Faculty & Staff Participants
- 106 Business Partners Engaged

Key Agency Partners

Internal:

OSBP
OFFICE OF SMALL BUSINESS PROGRAMS

SBIR · STTR
America's Seed Fund™
POWERED BY NASA

External:

Department of the Navy · Department of Education · Department of the Army · Department of Defense · Department of Energy · Department of Transportation · U.S. Department of Homeland Security · U.S. Department of Housing and Urban Development

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The Next Generation of Explorers

FY2022 Notable Accomplishments: Strategic Partnerships

Engagement with **119** Organizations (April 2021-May 2022)

Key Numbers

25 Active Non-Reimbursable Space Act Agreements

21 Informal collaborations to share content or engage students

16 Projects (completed or in-progress) about the Artemis I Mission

7M+ Digital engagements (Content Downloads, Education Multi-Media Uses and Virtual Event Participants)*

Example Collaborators

Noggin, Microsoft, USPTO United States Patent and Trademark Office, Minecraft Education Edition, Charles Stewart Mott Foundation, stemnext Opportunity Fund, PepsiCo, National Park Service, NSF, Discovery Education, U.S. Department of Education, LEGO

* Source: Partner Provide Metrics for SY 20-21

NAC STEM Engagement Committee Findings – Jan 2023

- NASA's "Back to School" efforts demonstrate remarkable progress and significant growth with the intentional and thoughtful approach
- Continuation of NASA's DEIA efforts and shared approach are critical to increase awareness and growth in underserved communities given NASA's outreach ability
- NASA's efforts on the Minority University Research and Education Project (MUREP), continue to grow and reach new communities $ 38M in 21, $43M in 22, and $45M in FY23

NAC STEM Engagement Committee Recommendations – Jan 2023

NASA proactively engage affinity and professional societies to provide access, opportunities, and peer to peer relationships for building the workforce of the future

Consequences – lost opportunities to strengthen the inclusion and equity needed for meeting current and future workforce skill and problem- solving demands