NASA STEM ENGAGEMENT

1. Key Updates
   - Moon 2024 & National Space Council
   - Strategy & Portfolio
   - MAP Progress

2. Connecting Nation’s STEM to NASA’s Mission
   - Team II
   - Partnerships
   - NextGen STEM CCP Activities
   - Sparking an Interest in STEM

3. Discussion & Finalize Findings/Recommendations
FIFTH NATIONAL SPACE COUNCIL MEETING

Expert Panel 1: Ready to Fly
• Les Lyles, retired U.S. Air Force general and former Vice Chief of Staff of the Air Force
• Eileen Collins, retired U.S. Air Force officer and former NASA astronaut
• Sandy Magnus, former NASA astronaut

Expert Panel 2: Ready to Explore
• Dan Dumbacher, American Institute of Aeronautics and Astronautics
• Jack Burns, University of Colorado at Boulder
• Wanda Sigur, independent consultant

March 26, 2019
VP Pence announced plans to return U.S. astronauts to the surface of the Moon by 2024, with report from NASA Administrator Bridenstine
ARTEMIS PHASE 1: TO THE LUNAR SURFACE BY 2024

ARTEMIS 1: FIRST HUMAN SPACECRAFT TO THE MOON IN THE 21st CENTURY

ARTEMIS 2: FIRST HUMANS TO THE MOON IN THE 21st CENTURY

FIRST HIGH POWER SOLAR ELECTRIC PROPULSION (SEP) SYSTEM

FIRST PRESSURIZED CREW MODULE DELIVERED TO GATEWAY

ARTEMIS 3: CREWED MISSION TO GATEWAY AND LUNAR SURFACE

Commercial Lunar Payload Services
- CLPS delivered science and technology payloads

Early South Pole Crater Rim Mission(s)
- First robotic landing on eventual human lunar return and ISRU site
- First ground truth of polar crater volatiles

Descent Element Test
- First large-scale science lander on the Moon

Humans on the Moon - 21st Century
First crew leverages infrastructure left behind by previous missions

LUNAR SOUTH POLE CRATER TARGET SITE

2019

2024
### BUDGET HISTORY

<table>
<thead>
<tr>
<th>$M</th>
<th>FY14</th>
<th>FY15</th>
<th>FY16</th>
<th>FY17</th>
<th>FY18</th>
<th>FY19</th>
<th>FY20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Next Gen STEM/Other</td>
<td>$28.6</td>
<td>$29.0</td>
<td>$25.0</td>
<td>$10.0</td>
<td>$10.0</td>
<td>$12.0</td>
<td>$ -</td>
</tr>
<tr>
<td>Space Grant</td>
<td>$40.0</td>
<td>$40.0</td>
<td>$40.0</td>
<td>$40.9</td>
<td>$40.0</td>
<td>$44.0</td>
<td>$ -</td>
</tr>
<tr>
<td>EPSCoR</td>
<td>$18.0</td>
<td>$18.0</td>
<td>$18.0</td>
<td>$17.1</td>
<td>$18.0</td>
<td>$21.0</td>
<td>$ -</td>
</tr>
<tr>
<td>MUREP</td>
<td>$30.0</td>
<td>$32.0</td>
<td>$32.0</td>
<td>$32.0</td>
<td>$32.0</td>
<td>$33.0</td>
<td>$ -</td>
</tr>
<tr>
<td><strong>Total STEM Engagement Funding</strong></td>
<td><strong>$116.6</strong></td>
<td><strong>$119.0</strong></td>
<td><strong>$115.0</strong></td>
<td><strong>$100.0</strong></td>
<td><strong>$100.0</strong></td>
<td><strong>$110.0</strong></td>
<td><strong>$ -</strong></td>
</tr>
</tbody>
</table>
STEM ENGAGEMENT BSA IMPLEMENTATION TIMELINE

Accomplished implementation plan approach over an 18 month period – finishing 6 months early, despite budget challenges and 35-day partial government shutdown.

Pre-BSA Terminology
• Education (Office of Education)
• Outreach (Office of Communications)

Post BSA Terminology
• STEM Engagement (OSTEM)
• Public Engagement (OCOMM)

MSC-2017-01-001
MSC-2017-10-001
EC-2018-01-001

October 4, 2016
March 30, 2017
October 6, 2017
January 9, 2018
April 30, 2019

BSA Deep Dive
Core Team
Findings
accepted by BSSC

MSC 5 Decision Memo Areas:
Governance, Roles and
Responsibilities, Program
Management, Grants
Management, Integration and Coordination of Agency Outreach

MSC Decision Memo Approved:
• Implementation Plan
• Agency Vision, Mission and Focus Areas for STEM Engagement
• Governance Structure for OSTEM

NEW STEM Engagement Council formed, reports to EC
Completion of ALL OSTEM Implementation Plan Actions

OSTEM and OCOMM
Quarterly Reporting to MSC
### STEM Engagement Transformation Highlights

<table>
<thead>
<tr>
<th>Systemic</th>
<th>Programmatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ STEM Engagement Council</td>
<td>✓ An integrated program management approach for appropriated program</td>
</tr>
<tr>
<td>✓ New STEM Engagement function and Office of STEM Engagement</td>
<td>✓ Significant changes to appropriated programs:</td>
</tr>
<tr>
<td>✓ New agency Strategy for STEM Engagement</td>
<td>✓ New Next Gen STEM project, replacing SEAP, incorporating significant changes to approach</td>
</tr>
<tr>
<td>✓ New performance measurement and evaluation approach</td>
<td>✓ Streamlined MUREP with more focused, strategic award initiatives</td>
</tr>
<tr>
<td>✓ Integrated agency STEM Engagement Portfolio</td>
<td>✓ New multi-year solicitation for Space Grant with key changes</td>
</tr>
<tr>
<td>✓ Annual agency STEM Engagement planning process</td>
<td>✓ Rigorous, systematic program and fiscal management practices</td>
</tr>
<tr>
<td>✓ New STEM Engagement NASA Policy Directive (in formal NODIS process)</td>
<td>✓ Project management and grants management training requirements – in implementation</td>
</tr>
<tr>
<td>✓ Capabilities-driven model with assignment of functional roles and responsibilities</td>
<td></td>
</tr>
<tr>
<td>✓ Performance Measurement &amp; Evaluation</td>
<td></td>
</tr>
<tr>
<td>✓ Educational Platforms and Capabilities</td>
<td></td>
</tr>
<tr>
<td>✓ Internships</td>
<td></td>
</tr>
<tr>
<td>✓ Enhanced infrastructure, tools &amp; systems</td>
<td></td>
</tr>
<tr>
<td>✓ New NASA Internship Portal</td>
<td></td>
</tr>
<tr>
<td>✓ New NASA STEM Engagement Search Engine for students and educators</td>
<td></td>
</tr>
<tr>
<td>✓ New enterprise performance measurement system under construction</td>
<td></td>
</tr>
</tbody>
</table>
NEW ARCHITECTURE ENABLING STUDENT OPPORTUNITIES & CONTRIBUTIONS

Focus Areas

Evidence-based strategies
Create unique opportunities for students to contribute to NASA's work.

Rigorous planning
Build a diverse future STEM workforce by engaging students in authentic learning experiences.

Integrated operational model
Strengthen public understanding by enabling powerful connections to NASA's mission and work.

Strategic, balanced portfolio

NASA-unique learning experiences

Student contributions to NASA's work in action

SCALABILITY TO MAGNIFY NASA'S REACH AND IMPACT

BENEFICIARIES OF NASA'S STEM ENGAGEMENT PORTFOLIO

NEW ARCHITECTURE ENABLING STUDENT OPPORTUNITIES & CONTRIBUTIONS
The *NASA Strategy for Science, Technology, Engineering and Math (STEM) Engagement* serves as a roadmap to frame and guide the agency’s work in STEM engagement over the next 3 years.

**Beneficiaries of NASA’s STEM Engagement Portfolio**

- Elementary
- Middle School
- High School
- Undergraduate
- Graduate

STEM engagement is comprised of a broad and diverse set of programs, projects, activities and products developed and implemented by HQ functional Offices, Mission Directorates and Centers.

*Approved by the NASA STEM Engagement Council*  
*August 22, 2018*
NASA STRATEGY FOR STEM ENGAGEMENT

FOCUS AREAS

Enable contributions to NASA’s work

Build a diverse, skilled, future workforce

Strengthen STEM through connections to NASA

OBJECTIVES

• Mission-driven student contributions pipeline
• Connecting with students

STRATEGIES

• Strategies toward objectives aligned with Vision focus areas

NASA Strategy for Science, Technology, Engineering and Math (STEM) Engagement

2018 – 2020

Approved by the NASA STEM Engagement Council
August 22, 2018
Enable contributions to NASA’s work

Build a diverse, skilled, future workforce

Strengthen STEM through connections to NASA

---

Students contribute to NASA’s endeavors in exploration and discovery.

Research and development capacity of educational institutions is enhanced, enabling broad and diverse contributions that directly address NASA priorities.

---

NASA Strategy for Science, Technology, Engineering and Math (STEM) Engagement

2018 – 2020

Approved by the NASA STEM Engagement Council
August 22, 2018
NASA STRATEGY FOR STEM ENGAGEMENT

FOCUS AREAS

Enable contributions to NASA’s work

Build a diverse, skilled, future workforce

Strengthen STEM through connections to NASA

OBJECTIVES

• Broad and diverse set of students are attracted to STEM through NASA opportunities.
• Students, including underrepresented and underserved communities, explore and pursue STEM pathways through authentic learning experiences and research opportunities with NASA’s people and work.
• The portfolio of NASA STEM engagement opportunities meets agency workforce requirements and serves the nation’s aerospace and relevant STEM needs.
• Strategic partnerships with industry, academia, non-profit organizations and educational institutions enhance and extend the impact of NASA’s efforts in STEM engagement.

NASA Strategy for Science, Technology, Engineering and Math (STEM) Engagement

2018 – 2020

Approved by the NASA STEM Engagement Council
August 22, 2018

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

Enable contributions to NASA’s work

Build a diverse, skilled, future workforce

Strengthen STEM through connections to NASA

Objectives

- Youth are introduced to STEM concepts and content through readily available NASA STEM engagement resources and content.
- Students gain exposure to STEM careers through direct and virtual experiences with NASA’s people and work.
NASA STEM ENGAGEMENT PORTFOLIO

U.S. STEM Challenges and Needs ➔ Beneficiaries ➔ NASA’s Contributions to STEM Ecosystem ➔ NASA STEM Workforce ➔ NASA Mission Needs

STEM Engagement Portfolio
- Internships
- Challenges, Competitions or Contests
- Fellowships
- Research and Development Opportunities
- Pre-College STEM Experiences
- College STEM Experiences
- STEM Content / Products
- Virtual Learning Opportunities
- Institutional Support
- Faculty & Educator Support

NASA Mission Needs
- ARMD
- HEOMD
- SMD
- STMD

The Next Generation of Explorers
STEM Engagement Portfolio Drivers & Contributions

Student contributions to NASA’s work in action

Mission Goals, Needs and Requirements

Mission Activities

Government / Other Agencies

Industry

Academia

Students

NASA STEM Engagement Portfolio

Mission-driven

STEM Engagement Goals and Requirements

STEM Engagement Activities

NASA Strategic Plan 2018


Approved by the NASA FTM Engagement Council August 21, 2018

The Next Generation of Explorers
MAP Core Functions: Themes

- Students as Primary Beneficiaries
- NASA STEM as a broker between NASA and Students, Teachers, Schools, & others
- NASA STEM as an AGENCY Service provider
- Building & Sustaining the NASA STEM Ecosystem
- Creating Clarity Between STEM Engagement & Public Outreach
CORE FUNCTION 1:
A COMPREHENSIVE STEM ENGAGEMENT PROGRAM FOR NASA

STEM Engagement Strategy, Planning, Integration and Oversight

- Space Grant
- MUREP
- EPSCoR
- NextGen STEM

Congressionally Appropriated Projects

Student Experiential Work & Learning Opportunities

- Internships and fellowships
- Challenges, contests, competitions

Engagement Support for Educators/Faculty

- Direct financial support
- Access to NASA personnel and facilities

STEM Education Conferences; STEM experiential activities in schools

KEY EXAMPLES

INSPIRE - ENGAGE - EDUCATE - EMPLOY
The Next Generation of Explorers
CORE FUNCTION 2: SERVICE PROVIDER FOR THE AGENCY

**KEY EXAMPLES**

- Providing an agency wide infrastructure for administering student internships
- Providing expertise to build and facilitate effective relationships with Minority Serving Institutions
- Providing measurement, assessment and evaluation of NASA’s STEM Engagement investments
- Partnering in development and delivery of NASA STEM products and platforms to assure quality and integrity
1. Key Updates
   • Moon 2024 & National Space Council
   • Strategy & Portfolio
   • MAP Progress

2. Connecting Nation’s STEM to NASA’s Mission
   • Team II
   • Partnerships
   • NextGen STEM CCP Activities
   • Sparking an Interest in STEM

3. Discussion & Finalize Findings/Recommendations
Teams Engaging Affiliated Museums and Informal Institutions

2019 Solicitation Underway
Due Date: August 13, 2019

Theme: Moon to Mars

- Experiential-based educational opportunities in informal settings targeted at grades 4-8
- Utilize networks with wide range of organizations to enable broad dissemination
- Proposals directly tied to and amplify the Moon to Mars theme
PARTNERSHIP: TYNKER

Series of coding challenges based on NASA space missions

• Challenge 1:
  • Deadline May 5th
  • >7,000 unique entries
  • Winners were announced May 20

• Challenge 2: September 2019
• Challenge 3: November 2019

Forward to the Moon Design a Mission Patch
Design Challenge Winners Announced
Next Gen STEM: Pilot Themes

- Evidence-based pilot activities to engage middle school students in mission content
  - Hand’s on Inquiry Based Experiences
  - Educator Support Materials
  - Digital Resources and Social Media
  - Partner Driven Collaborations for Implementation
  - Leverage existing Agency STEM Engagement resources
NEXT GEN STEM: PILOT THEMES

✓ Evidence-based pilot activities to engage middle school students in mission content
  ✓ Hand’s on Inquiry Based Experiences
  ✓ Educator Support Materials
  ✓ Digital Resources and Social Media
  ✓ Partner Driven Collaborations for Implementation
✓ Leverage existing Agency STEM Engagement resources
Grades 5-12 Activities

- Engineering design challenges
VIRTUAL REALITY FIELD TRIPS
**Next Gen STEM: Pilot Themes**

- Evidence-based pilot activities to engage middle school students in mission content
  - Hand’s on Inquiry Based Experiences
  - Educator Support Materials
  - Digital Resources and Social Media
  - Partner Driven Collaborations for Implementation
  - Leverage existing Agency STEM Engagement resources

**X-59 Low Boom Aircraft**
INDIVIDUAL ACTIVITY GUIDES

- Activity Overviews
- Step by Step Instructions
- Suggested Grade Levels
- Education Standards
- Required Activity Materials
- NASA Mission Background Information

INDIVIDUAL ACTIVITY GUIDES

Activity Guides

Senses of Sound

Sound Effects

Fan-tastic Forces
ACTIVITY DEMONSTRATION VIDEOS

Senses of Sound

Sound Effects

Viewing Locations: SSGL Website, NASA Images, NASA Education YouTube, NASA Edge Website
NASA’S LOWER THE BOOM – CITIZEN SCIENCE ACTIVITY

Anecdta
Citizen Science Data Collection App

How it works
NEXT GEN STEM: PILOT THEMES

✓ Evidence-based pilot activities to engage middle school students in mission content
  ✓ Hand’s on Inquiry Based Experiences
  ✓ Educator Support Materials
  ✓ Digital Resources and Social Media
  ✓ Partner Driven Collaborations for Implementation
  ✓ Leverage existing Agency STEM Engagement resources

Moon to Mars
EXPLORING MOON TO MARS
MOON LIGHTS THE WAY
POWERING INTO DEEP SPACE
MOON TO MARS: POWERING INTO DEEP SPACE

Educator Training and Webinars

NASA-relevant Coding Challenges

Curriculum Support Materials – SLS, Orion, Gateway

Engineering Design Challenges

The Next Generation of Explorers
Educator Webinars

Student and Educator Digital Badging

All 3 Themes
OSTEM DIVERSITY DATA KEY POINTS

- Both in government and industry attracting and retaining diverse students in a STEM challenge
- Government and industry are competing for students within a limited pool of applicants
- Nationally there are some positive upticks in enrollments at Universities
- Across 3 years trends, OSTEM is exceeding performance measures with students who self identify with underrepresented race and ethnicity categories
- OSTEM is looking across funded grants and opportunities to identify positive outliers to study further for identification of best practices
OSTEM STUDENT AWARDS: RACE

<table>
<thead>
<tr>
<th></th>
<th># of Significant Awardees</th>
<th>Not URR** #</th>
<th>(%)</th>
<th>URR*** #</th>
<th>(%)</th>
<th>DNR Race #</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 2015</td>
<td>All OSE</td>
<td>3,673</td>
<td>2,676 (85.3)</td>
<td>463 (14.8)*</td>
<td>534</td>
<td></td>
</tr>
<tr>
<td>FY 2016</td>
<td>All OSE</td>
<td>7,519</td>
<td>5,489 (82.3)</td>
<td>1,177 (17.7)*</td>
<td>853</td>
<td></td>
</tr>
<tr>
<td>FY 2017</td>
<td>All OSE</td>
<td>7,409</td>
<td>5,469 (82.4)</td>
<td>1,168 (17.6)*</td>
<td>772</td>
<td></td>
</tr>
</tbody>
</table>

Note: * indicates years that awardees exceeded the national average for racially underrepresented students enrolled in 4-year STEM degree programs.
** Not Underrepresented Race (URR) = Asian and White
***Underrepresented Race (URR) = Black or African American, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander.
DNR = Did not report

Office of STEM Engagement Significant Awardees Percentage by Race

Note: Red dot (●) indicates the national average for underrepresented students enrolled in STEM degree programs. The U.S. Department of Education's Integrated Postsecondary Education Data System (IPEDS) reported 8.1 percent of enrollees in STEM degree programs in 2014 and 9.6 percent in 2016 identified as Black or African American, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander. Based on data release date, FY13 - FY16 NASA data is compared to 2014 NCES-IPEDS; FY17 NASA data is compared to 2016 NCES-IPEDS.
OSTEM STUDENT AWARDS: ETHNICITY

<table>
<thead>
<tr>
<th>Year</th>
<th>All OSE Hispanic or Latino</th>
<th>All OSE Non-Hispanic or Not-Latino</th>
<th>FY 2015 Hispanic or Latino</th>
<th>FY 2016 Hispanic or Latino</th>
<th>FY 2017 Hispanic or Latino</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 2015</td>
<td>3,673</td>
<td>2,848 (83.9)</td>
<td>545 (16.1)*</td>
<td>7,519</td>
<td>5,796 (83.3)</td>
</tr>
</tbody>
</table>

Note: * indicates years that awardees exceeded the national average for Ethnically underrepresented (URE) students enrolled in STEM degree programs.
DNR = Did not report

Note: Red dot (●) indicates the national average for Hispanic or Latino students enrolled in STEM degree programs. The U.S. Department of Education’s Integrated Postsecondary Education Data System (IPEDS) reported 11.7 percent of enrollees in STEM degree programs in 2014 identified as Hispanic or Latino and 14.4 percent in 2016. Based on data release date, FY16 NASA data is compared to 2014 NCES-IPEDS; FY17 NASA data is compared to 2016 NCES-IPEDS.
## OSTEM Student Awards: Gender

### Office of STEM Engagement Significant Awardees Percentage by Gender

<table>
<thead>
<tr>
<th></th>
<th>All OSE</th>
<th>Male # (%)</th>
<th>Female # (%)</th>
<th>DNR Gender #</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FY 2015</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All OSE</td>
<td>3,673</td>
<td>2,180 (60.3)</td>
<td>1,434 (39.7)</td>
<td>59</td>
</tr>
<tr>
<td><strong>FY 2016</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All OSE</td>
<td>7,519</td>
<td>4,599 (61.7)</td>
<td>2,849 (38.3)</td>
<td>71</td>
</tr>
<tr>
<td><strong>FY 2017</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All OSE</td>
<td>7,409</td>
<td>4,673 (63.6)</td>
<td>2,678 (36.4)</td>
<td>58</td>
</tr>
</tbody>
</table>

Note: * indicates years that awardees exceeded the national average for female students enrolled in STEM degree programs.

DNR = Did not report

---

Note: Red dot (●) indicates the national average for females enrolled in STEM degree programs. The U.S. Department of Education’s Integrated Postsecondary Education Data System (IPEDS) reported 39.5 percent of enrollees STEM degree programs in 2014 were female and 40.6 percent were female in 2016. Based on data release date, FY16 NASA data is compared to 2014 NCES-IPEDS; FY17 NASA data is compared to 2016 NCES-IPDES.
NAC RECOMMENDATION #2:
SPARK THAT LEADS TO ENGAGEMENT

**Recommendation #2:** The Office of STEM Engagement should create a deep and comprehensive document that describes what we know about sparking student interest (spark), STEM engagement, and motivation, and use it to create the foundational evidence for the Office.

**Major Reasons for the Recommendation:** NASA is uniquely positioned to inspire and motivate the country with their work. As good stewards of a limited budget, NASA strives to maximize its investments. If NASA could better understand spark, STEM engagement, and motivation, it could be more effective—basing investment decisions on evidence of what works. The Committee feels there is sufficient ambiguity in the field about spark, STEM engagement, and motivation that the Agency should invest in a deeper review of the evidence-based strategies and practices that promote spark, STEM engagement, and motivation.

**Consequences of No Action on the Recommendation:** Lack of action on this recommendation relegates NASA to using secondary indicators of effectiveness, and could lead to less effective investment decisions. NASA will have limited impact, and will be at greater risk of duplication of ineffective activities.
NASA STEM ENGAGEMENT

1. Key Updates
   • Moon 2024 & National Space Council
   • Strategy & Portfolio
   • MAP Progress

2. Connecting Nation’s STEM to NASA’s Mission
   • Team II
   • Partnerships
   • NextGen STEM CCP Activities
   • Sparking an Interest in STEM

3. Discussion & Finalize Findings/Recommendations
NAC Recommendation #2: Spark that Leads to Engagement

NAC Recommendation #2
Create a deep and comprehensive document that describes what is known about:
Sparking student interest, STEM engagement, and Motivation.

Proposed Approach
• Engage a panel of nationally recognized STEM education subject matter experts (SME) to develop recommendations for NASA’s continued success in STEM engagement.
• Convene a Sparking STEM Interest Forum with SMEs at NASA HQ to discuss and prioritize recommendations.
• Create a report of STEM education SME findings, recommendations, and next steps for continuing the line of research.

Utility
The report will provide foundational evidence that will be used to inform:
• NASA’s portfolio of STEM Engagement investments and
• The design, execution, and performance measurement of NASA’s STEM Engagement activities.
OSTEM PORTFOLIO

Sparking student interest, STEM engagement and motivation
DRAFT QUESTIONS

NAC Recommendation #2

Create a deep and comprehensive document that describes what is known about:

- Sparking student interest,
- STEM engagement,
- Motivation.

What should NASA do to find success in STEM Engagement?

1. What is the appropriate role in sparking STEM interest for NASA that is unique from other federal agencies? In sustaining STEM interest? In developing and sustaining students’ intrinsic motivation to persist in STEM academic and career pursuits?

   • What research-based effective strategies should NASA incorporate into the design and execution of STEM engagement activities to spark STEM interest in diverse student populations, specifically groups traditionally underserved or underrepresented in STEM fields? To sustain STEM interest? To develop and sustain students’ intrinsic motivation to persist in STEM academic and career pursuits?

2. To what extent are NASA’s goals and priorities for STEM engagement designed to support sparking STEM interest? Sustaining STEM interest? Developing and sustaining students’ intrinsic motivation to persist in STEM academic and career pursuits?

3. To what extent is the NASA STEM Engagement Strategy an effective document to guide the design and execution of activities that will spark STEM interest? Sustain STEM interest? Developing and sustaining students’ intrinsic motivation to persist in STEM academic and career pursuits?
### Phase One Key Milestones

<table>
<thead>
<tr>
<th>Timeline</th>
<th>Phase One Key Milestones</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 2019</td>
<td>• STEM Education SME’s identified</td>
</tr>
<tr>
<td>May 2019</td>
<td>• Orientation webinar for STEM Education SMEs</td>
</tr>
<tr>
<td></td>
<td>• STEM Education SMEs generate abstracts and research prospectus document</td>
</tr>
<tr>
<td>June 2019</td>
<td>• STEM Education SME’s finalize abstracts and research prospectus</td>
</tr>
<tr>
<td></td>
<td>• PAEIM Team develops workshop agenda and structure</td>
</tr>
<tr>
<td></td>
<td>• PAEIM Team completes logistics and travel for staff and STEM Education SMEs for workshop</td>
</tr>
<tr>
<td>July 2019</td>
<td>• Convene STEM Education SME workshop at NASA HQ</td>
</tr>
<tr>
<td></td>
<td>• PAEIM Team generates report of workshop findings</td>
</tr>
<tr>
<td>August 2019</td>
<td>• PAEIM Team finalizes report of workshop findings</td>
</tr>
</tbody>
</table>
INSPIRE - ENGAGE - EDUCATE - EMPLOY
The Next Generation of Explorers

THANK YOU!