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

NASA ADVISORY COUNCIL STEM ENGAGEMENT COMMITTEE
OSTEM Business Service Assessment, MAP & Strategy

Dec. 4, 2018
Our STEM Engagement Roadmap

Establish an Agency STEM Engagement Strategy and Operational Model

• Agency vision, mission and strategy to frame and align the agency’s STEM engagement portfolio will:
  o Focus on students as beneficiaries and structured model
  o Mission-driven architecture for scope and approach
  o Focus on evidence-based NASA-unique learning experiences enabling student contributions to NASA’s work in action

• Effective, integrated governance via STEM Engagement Council
• Re-invigorated agency function and HQ functional office
• Rigorous planning process
• Integrated operational model and agency STEM Engagement portfolio
• Effective program and fiscal management
• Capabilities driven approach for agency roles and responsibilities
• New approach and tools for performance measurement and assessment
• Scalability and magnified impact through strategic partnerships
# STEM Engagement Transformation: Snapshot of Changes in FY2018

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<thead>
<tr>
<th>Systemic</th>
<th>Programmatic &amp; Operational</th>
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<tbody>
<tr>
<td>✓ Chartered and established STEM Engagement Council. (03/30/18) Convened inaugural session of the Council. (04/12/18)</td>
<td>✓ Put in place integrated program management approach for EPSCoR, MUREP and Space Grant, with corresponding staff changes.</td>
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<td>✓ Established new Office of STEM Engagement. (effective 08/29/18)</td>
<td>✓ Overhauled SEAP, incorporating significant changes to approach for awards to informal education institutions (TEAM II) and innovative new mission-driven pilot initiatives.</td>
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<tr>
<td>✓ Developed NASA Strategy for STEM Engagement. (Council approval 08/22/18)</td>
<td>✓ Achieved improvements in interfaces and relationships with Space Grant Consortia and their key stakeholders.</td>
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<td>✓ Completed development of new STEM Engagement NASA Policy Directive. (02/21/18)</td>
<td>✓ Streamlined MUREP with more focused, strategic award initiatives reducing from 14 elements to 7.</td>
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<td>✓ Completed definition of new performance measurement and assessment approach. (07/15/18)</td>
<td>✓ Incorporated more rigorous, systematic program and fiscal management practices.</td>
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<td>✓ Streamlined and improved agency websites, platforms and social media tools.</td>
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<td>✓ Developed and deployed a new NASA Internships and Fellowships student portal.</td>
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## STEM Engagement Transformation: Continuing to Drive Change in FY2019

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<td>• Implement annual planning cycle.</td>
<td>• Continue changes and enhancements to project and fiscal management practices.</td>
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<td>• Define agency STEM engagement portfolio.</td>
<td>• Develop and release Space Grant multi-year solicitation, with strategic changes to ensure</td>
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<td>• Put processes in place for SEC oversight and integration.</td>
<td>mission-driven contributions.</td>
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<td>• Implement new performance measurement, assessment and evaluation approach.</td>
<td>• Drive further changes to EPSCoR and MUREP, moving toward new mission-driven model and</td>
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<tr>
<td>• Design/develop new system and platform to support agency performance measurement, assessment and evaluation.</td>
<td>architecture.</td>
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<td>• Develop approach to strategic partnerships.</td>
<td>• Validate Next Gen STEM pilots and execute competitive awards to informal institutions.</td>
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<td>• Build an effective STEM engagement community of practice across the agency.</td>
<td>• Stand up new inventory and search engine on <a href="http://www.nasa.gov">www.nasa.gov</a> for students and educators.</td>
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<td>• Finalize communications strategy and begin implementation of new communications plan.</td>
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# BSA Implementation Phased FY2019 Milestones

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<th>90 Days</th>
<th>180 Days</th>
<th>270 Days</th>
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**Governance, Roles and Responsibilities**
- Develop an approach to strategic partnerships.
- Roles and Responsibilities—Establish role for technical experts in STEM Engagement.
- Continue to build effective public and STEM engagement communities of practice across the Agency. Monitor progress.
- Continue operations of SEC working groups and evolve as needed.
- Finalize communications strategy.
- Implement annual planning cycle.
- Put processes in place for oversight and integration.
- Implement agency metrics approach for OSTEM.
- Complete capabilities assessment. Evaluate and develop operational changes as needed.
- Pilot Annual Planning Process.
- Implement recommendations and outcomes from the internal assessment and planning process to capitalize on appropriated programs (e.g., Space Grant, MUREP, EPSCoR).
- Execute operations at Centers based upon capability review.
- Implement metrics program agency-wide.
- Establish systemic changes to grants management processes as identified through analyses conducted in FY18.
- Train key grants managers.
- Continue to operationalize key changes made during FY18 to ensure accountability.

**Program Management**
- Roles and Responsibilities—Establish role for technical experts in STEM Engagement.
- Continue to build effective public and STEM engagement communities of practice across the Agency. Monitor progress.
- Finalize communications strategy.
- Implement annual planning cycle.
- Put processes in place for oversight and integration.
- Implement agency metrics approach for OSTEM.
- Complete capabilities assessment. Evaluate and develop operational changes as needed.
- Pilot Annual Planning Process.
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- Implement metrics program agency-wide.
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- Continue to operationalize key changes made during FY18 to ensure accountability.
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.
Enabling contributions to NASA’s work

- 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.

Building a diverse, skilled, future workforce

- 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.

Strengthening STEM through connections to NASA

- 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.

Objectives and strategies guide NASA’s future efforts, are in direct alignment with NASA’s vision, mission and focus areas for public and STEM engagement as defined in A New Direction for NASA’s Work in Public and STEM Engagement.
**WHAT IS MAP?**

- Mission Support Future Architect Program (MAP), an agency effort to transform certain functions from their current state to an enterprise operating model while maintaining mission focus, improving efficiency, ensuring local authority and valuing the workforce.

**OFFICES/FUNCTIONS PARTICIPATING IN MAP**

- Phase 1: CFO, HR, and Legislative Affairs
- Phase 2: Procurement/Small Business, Protective Services, and EEO/Diversity Office
- Nov 1, 2018: OSTEM and OCOMM accelerated to Phase 2; originally slated for Phase 3

**MAP IS NOT:**

- MAP is not synonymous with reduction of force, reduced staff, or consolidation into HQ.
- There is no cookie cutter approach to MAP. Each organization’s process and outcomes will differ from others.
MAP & STEM ENGAGEMENT – WHAT WE KNOW

What We Know:

1. OSTEM’s MAP process will be inclusive and aligned with existing BSA transformation efforts.

2. MAP will be a collaborative effort, requiring the collective experience and contributions from HQ and all Centers.

3. Several unknowns, including how MAP affects daily roles and responsibilities.

Projected Timeline:

- **October 2019**
  - Operational alignment. The Agency’s STEM engagement efforts are operationally aligned to function as single enterprise rather than individual entities.

- **October 2020**
  - Full Operating Capacity. The Agency’s STEM engagement workforce, processes, and technology will be operating within and supporting the new structure.