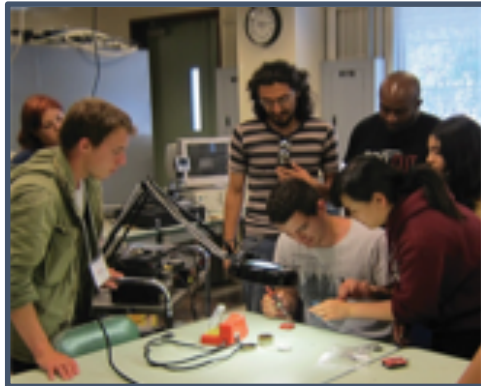




INSPIRE - ENGAGE - EDUCATE - EMPLOY

The Next Generation of Explorers



NASA ADVISORY COUNCIL STEM ENGAGEMENT COMMITTEE:

STEM PARTNERSHIPS | APOLLO'S 50TH | NEXT GEN STEM

OCTOBER 29, 2019

BEV GIRTEN & DIANE DETROYE
NASA'S OFFICE OF STEM ENGAGEMENT

IMPORTANCE OF STRATEGIC PARTNERSHIPS

One of Three Focus Areas From Business Services Assessment:

2. Build a diverse future STEM workforce by engaging students in authentic learning experiences with NASA's people, content and facilities.

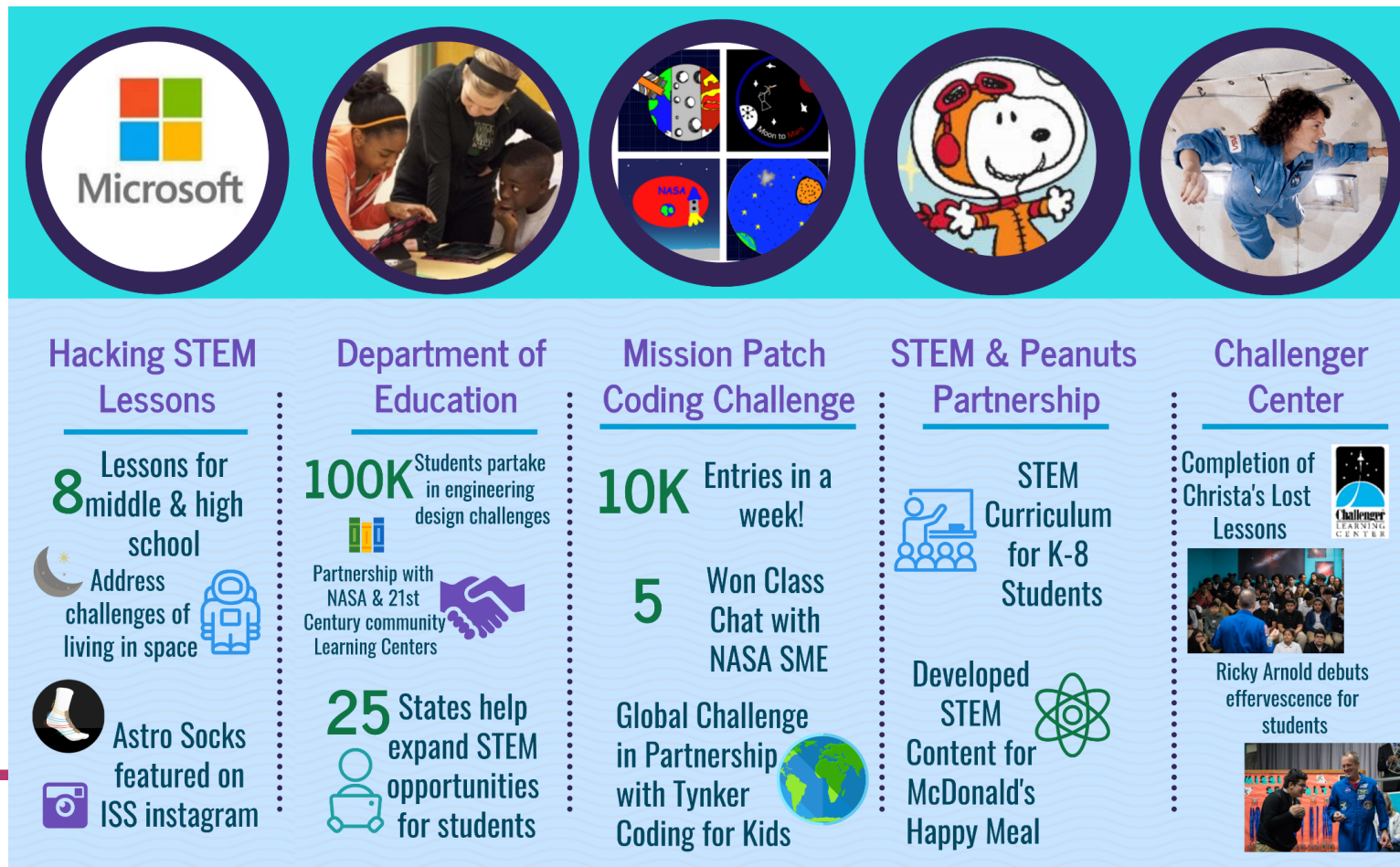
- Provide learning opportunities to attract and engage all students in STEM, including those historically underrepresented and underserved.
- Enhance capabilities of institutions and support educators to position them to better serve students, including those in underserved communities.
- Cultivate strategic partnerships with state-based regional and federal public, academic and private institutions to magnify NASA's efforts and investments.



SUMMARY OF NASA STEM ENGAGEMENT PARTNERSHIPS

Agreement(s)	Number	Notes
Agreements tagged in PAM system as "Education"	132	Education identified as an affected office.
Agreements confirmed as having STEM Engagement component	71	Includes 30 CRADAs for CubeSats managed by HEO
STEM Engagement Agreements minus CRADAs	41	71 minus 30 CRADAs managed by HEO
Number agreements managed by a NASA STEM Engagement Office (not including CRADAs)	34	17 Space Act Agreements 12 Umbrella Agreements 4 Interagency Agreements 1 International Agreement
Number agreements managed by office other than a NASA STEM Engagement Office (not including CRADAs)	7	1 Space Act Agreement 6 Umbrella Agreements

NOTABLE ACHIEVEMENTS IN FY2019: PARTNERSHIPS



NOTABLE MILESTONES: SPACE STEM FORUM & APOLLO 50TH ANNIVERSARY



Spacestem.NASA.gov

- 1M Attendees at listed events
- Over 300 events at 240+ sites on July 19 - 20



STEM Forward to the Moon Broadcast

- 27,165 combined social media engagement
- 30K+ views on YouTube with 1,299 live streams



Development & Distribution: STEM Content in Partnership with National Park Service

- Spaceflight Explorer, Junior Ranger Activity Guide
- 50K+ distributed to 50+ National Parks



#VirtualMoonshot

- 18 host centers; 560K social media following
- Total reach: 6,108
- Total engagement: 4,303



Forward to the Moon with Artemis

- 100K distributed to NASA Centers, libraries, Challenger Learning Centers, museums and Solar System Ambassadors.
- 74 organizations in 28 states



STEM Apollo Watch Party/Media Kit

- Resources & draft media advisory to publicize Apollo events
- Over 2,300 page views



13 STEM Webinars for Apollo Anniversary & Artemis

- Live Attendance 1000+
- 4000+ downloads of archived recordings and materials



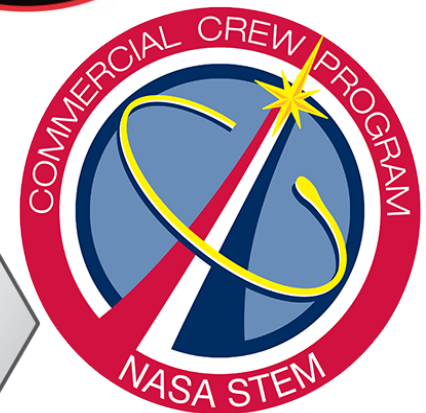
Apollo Anniversary STEM on National Mall

- Cosmosphere's Apollo Redux exhibit
- 10 STEM activities and over 21K NASA items distributed
- Over 2K participated in scavenger hunt & over 10K interactions with general public

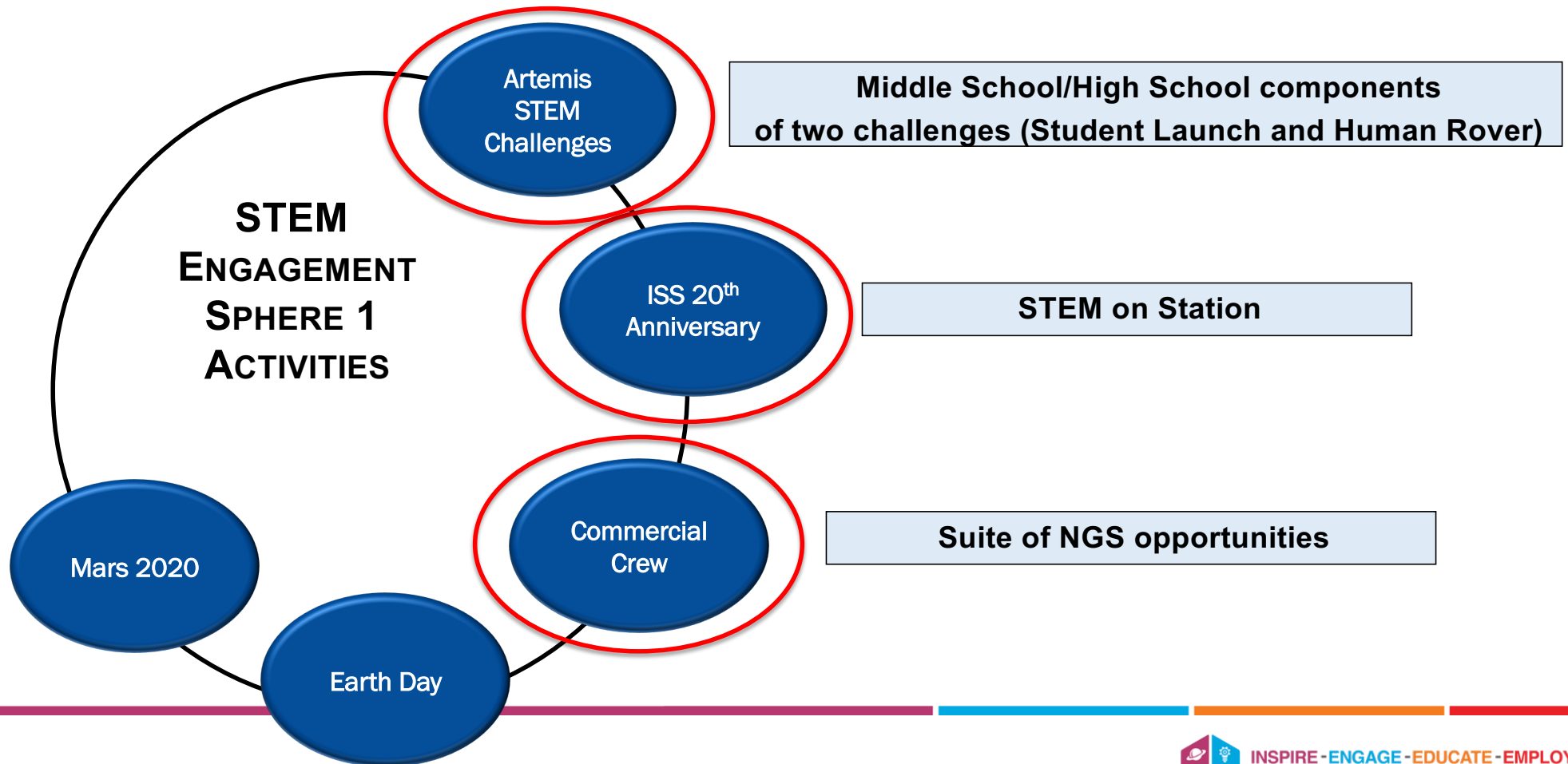
NEXT GEN STEM PILOT THEMES

✓ Evidence-based pilot activities to engage middle school students in mission content:

- Hands-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 CONNECTION TO SPHERE 1 ACTIVITIES



HIGHLIGHT MOON TO MARS: STEM FORWARD TO THE MOON EDUCATORS GUIDE

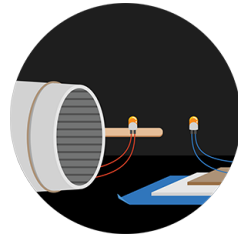
- STEM Forward to the Moon Educators Guide includes hands-on science activities may be done at home with family, at summer camp or in a classroom.
- The guide and supporting activities supplemented the STEM Education segment of the Apollo Anniversary broadcast first aired on NASA TV July 19, 2019.



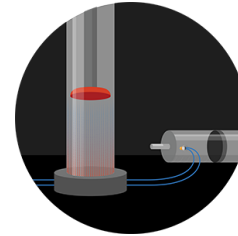
STEM ON STATION PARTNERSHIP: HACKING STEM LESSONS IN COLLABORATION WITH MICROSOFT



Astro Socks



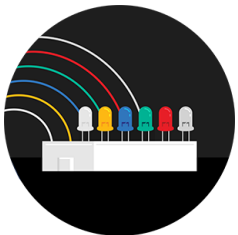
**Heat
Shielding**



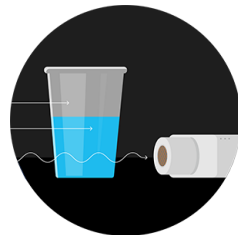
**Adiabatic
Compression**



Microgravity



**Electromagnetic
Spectrum**



**Alpha, Beta &
Gamma Radiation**



**Color
Histograms**



Minecraft

Hacking STEM Lessons:
<https://aka.ms/20yrsinspace>

NEXT GEN STEM **PILOT** THEMES

Expert Review Panel

- July, 2019
- STEM educators, supervisors, directors, and specialists

Solicited Feedback and Recommendations on Next Gen STEM Products and Opportunities

- Mission Themes and Product Structures
- Recommendations for Improvement
- Changes necessary for Implementation

*** Incorporating Recommendations ***



NEXT GEN STEM **PILOT** THEMES

Evaluation -- Multiple-Case Study Report

- Completed August, 2019
- 6 Evaluation Questions
- Included literature review
- Government shutdown impacted ability to fully conduct original plan per timeline
- Findings and Recommendations: Cross-case and by individual theme

*** Incorporating Recommendations ***

