



# The Role of Space Grant Within NASA Education

## Strategic Planning Session

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# NASA Education

## NASA Education Vision Statement

*To advance high quality Science, Technology, Engineering, and Mathematics (STEM) education using NASA's unique capabilities*



# Statutory Requirements for STEM Education



H.R. 5116: America COMPETES Reauthorization Act of 2010 requires:

- NASA Office of Education (OE) to partner with academia, professional associations, industry, and other agencies to provide teachers and faculty with experiences that capitalize on the excitement of NASA's missions and provides meaningful, content-rich educational programs to inspire students at all levels to pursue careers in fields related to STEM.
- NASA Education's programs will strive to reach and connect with youth, and to excite and inspire them into becoming the next generation of scientists, inventors, technicians, and explorers.
  - Strengthen the Nation's future workforce by identifying and developing programs to reinforce the critical skills and capabilities needed to achieve the Vision for Space Exploration. The program will contribute to the development of the Nation's STEM workforce through a portfolio of initiatives for students at all levels, especially underserved and underrepresented communities.
  - Attract and retain students in STEM disciplines and encourage their pursuit of higher education in disciplines critical to NASA's scientific and technical needs
  - Engage Americans in NASA's mission by building strategic partnerships and linkages between STEM formal and informal education providers



# Statutory Requirements for STEM Education



National Science and Technology Council (NSTC) Committee on STEM Education (CoSTEM) was established pursuant to the requirements of Sec. 101 of the America COMPETES Reauthorization Act of 2010.

- It requires NASA to actively engage in collaborations with other federal agencies to ensure the Agency's programs are supportive of national STEM priorities.

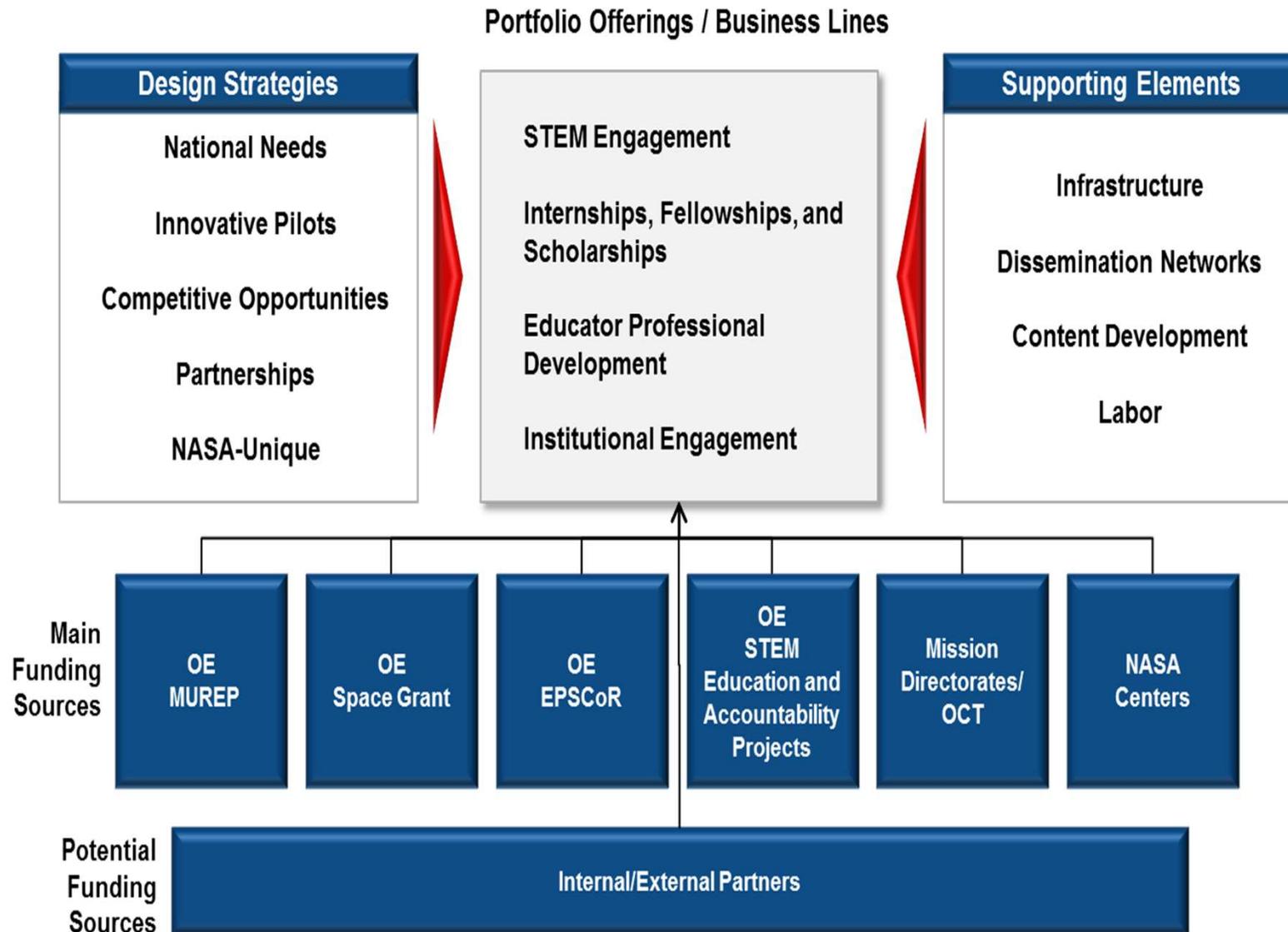


# Space Grant Objectives

- Establish and maintain a national network of universities with interests and capabilities in aeronautics, outer space and related fields;
- Encourage cooperative programs among universities, aerospace industry, and federal, state and local governments;
- Encourage interdisciplinary training, research and public service programs related to aerospace;
- Recruit and train U.S. citizens, especially women, underrepresented minorities, and persons with disabilities, for careers in aerospace science and technology; and
- Promote a strong science, mathematics, and technology education base from elementary through secondary levels.



# NASA Education Portfolio Architecture





# Partnerships

- Partnerships are utilized to ensure broad reach and distribution of NASA content to audiences.



# STEM Engagement



STEM Engagement activities utilize NASA resources and are based on best practices in motivation, engagement, and learning in formal and informal settings.



- ✓ RockOn & RockSAT
- ✓ FIRST Competitions
- ✓ High Altitude Ballooning
- ✓ Student Rocketry
- ✓ NASA Centers
- ✓ Great Moon buggy Race

## Higher Education

- ✓ 474 Student led Project Teams
- ✓ 24,236 Higher Education Students

## Precollege Education

- ✓ 481 Short Duration Student-based Projects
- ✓ 380 Long Duration Student-based Projects
- ✓ 164,949 K-12 Student Participants

## Informal Education

- ✓ 1,837 “Student Hands-on Activities” Supported
- ✓ 1,488 “Public at Large” Activities Supported



# NASA Internships, Fellowships, & Scholarships



Our goal is to identify, cultivate, and sustain a diverse workforce that is needed to support NASA's missions while contributing to the economic growth and global competitiveness of the United States.



## Directly Funded Students

- ✓ 5,651 Directly Funded Students
  - 3,393 Fellowship/Scholarship Students
  - 1,448 Higher Education Students
  - 810 Research Infrastructure Students
- ✓ 60.3% of Students are Male
- ✓ 39.7% of Students are Female
- ✓ 25.6% of Students are Underrepresented Minorities

## Longitudinal Tracking

- ✓ 84% of students were retained in STEM fields.
- ✓ 53% of students went on to seek an advanced degree in STEM
- ✓ 4,577 Students received Significant Awards
- ✓ 4,133 Students took the next step in STEM
- ✓ 3,889 Students are still enrolled in their current degree program



# Educator Professional Development



NASA Educator Professional Development provides educators with the knowledge, skills, and ability to deliver unique STEM content to learners who will ensure the economic growth and competitiveness of our nation.



## Higher Education

- ✓ 4,725 Higher Education Teacher Participants
- ✓ 210 New or Revised Courses

## Precollege Education

- ✓ 395 Short-Duration Educator Workshops
- ✓ 195 Long-Duration Educator Workshops
- ✓ 164,949 K-12 Student Participants
- ✓ 10,556 In-Service Educators
- ✓ 947 Pre-Service Educators
- ✓ 1,006 Informal Educators/Museum Staff

## Informal Education

- ✓ 115 Short-Duration Educator Workshops
- ✓ 30 Long-Duration Educator Workshops
- ✓ 7,179 In-Service Educators
- ✓ 270 Pre-Service Educators
- ✓ 713 Informal Educators/Museum Staff



# AZ Space Grant Consortium

- University of Arizona: In FY2011 we began a partnership with the UA College of Education's Math and Science Teacher Education/Retention Industry Partnerships Program that provides long-duration and/or sustained professional development training opportunities to educators that result in deeper content understanding and/or competence and confidence in teaching STEM disciplines.



# Institutional Engagement



NASA Institutional Engagement supports the advancement and development of STEM personnel, programs, and infrastructure to enable formal and informal institutions to conduct NASA-related research and/or deliver NASA-related STEM content.

Affiliate Partner Type	Number
IHE- Bachelors and/or Graduate Degree	557
IHE- Community/2-Year Institutions	115
<b>Total Academic Affiliate Partners</b>	<b>672</b>
Government (Federal/State/Local)	75
Industry	86
Museum/Science Center/Planetarium	82
Other and Other Non-Profit Organizations	99
<b>Total Non-Academic Affiliate Partners</b>	<b>342</b>
<b>Total Affiliate Partners</b>	<b>1014</b>

Diversity of Academic Affiliates is a Key Emphasis of the Program\*:

- 48 Hispanic Serving Institutions
- 48 Historically Black Colleges or Universities
- 22 Tribal Colleges or Universities
- 7 Other Minority Universities

\* MSIs = 19% of the total academic affiliates

Percentage of Market Share:

- 18% of Hispanic Serving Institutions
- 50% of Historically Black Colleges or Universities
- 61% of Tribal Colleges or Universities



# Final Thoughts



Space Grant is the Face of NASA in each state....as such, you are the ambassadors for NASA and NASA Education

Thank you!