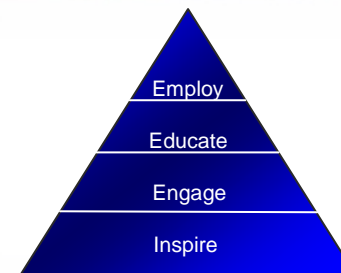


National Aeronautics and Space Administration



NASA Office of Education

National Council of Space Grant Directors



February, 2008

Joyce L. Winterton, Ph.D.
Assistant Administrator for Education



NASA Education



NASA Priorities in 2008

- 1. Constellation**
- 2. Sustainability of the Planet**
- 3. Innovation and Economic Development**
- 4. STEM Education**

NASA Education Priorities in 2008

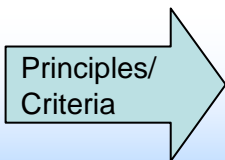
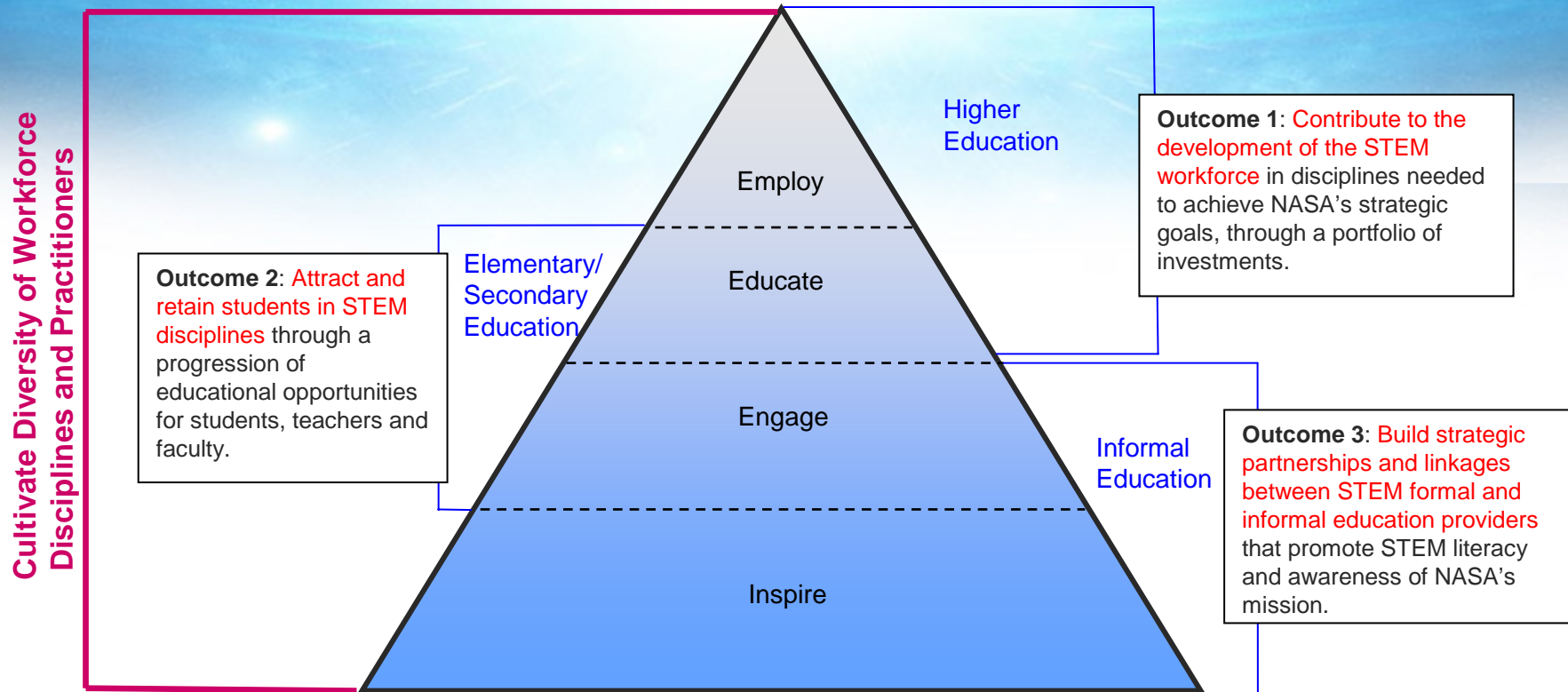
- 1. Understand where we are investing our dollars**
- 2. Conduct a Portfolio Gap Analysis**
- 3. Document what we're doing right**
- 4. Communicate all of the above**

**Briefing for the
NASA Advisory Council
Human Capital Subcommittee**

NASA Education Goals

- 1. Strengthening NASA and the Nation's future workforce**
- 2. Attracting and retaining students in STEM disciplines**
- 3. Engaging Americans in NASA's mission**

The Education Portfolio Strategic Framework



Relevance	NASA Content	Diversity	Evaluation	Continuity	Partnerships/Sustainability
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* Science, Technology, Engineering and Mathematics (STEM)

Education Coordinating Committee

Assistant Administrator for Education, Chair

- Office of Education
- Mission Directorates (4)
- Center Education Directors (10)
- Astronaut Office
- Functional Offices:
 - Communications Planning
 - Human Capital
 - Legislative Affairs
 - Public Affairs
 - External Relations
 - Diversity and Equal Opportunity

Objectives by Outcome

Outcome 1: Higher Education

Student Support

Student Involvement, Higher Education

Faculty and Research Support

Course Development

Targeted Institution Research and Academic Infrastructure

Outcome 2: Elementary and Secondary Education

Educator Professional Development, Long Duration

Student Involvement, K-12

Educator Professional Development, Short Duration

Curricular Support Resources

Outcome 3: Informal Education

Informal Education Provider Involvement Opportunities

Educational Support Resources

Professional Development for Informal Education Providers

2007 Office of Education Highlights

Support for NASA Workforce – What we know about higher education student participants:

- 45% are employed by NASA, aerospace contractors, universities & other education institutions

In addition:

- 29% went into related science, technology, engineering or mathematics (STEM) careers

Data from undergraduates indicate:

- 30% are seeking advanced education

2007 Office of Education Highlights

Support for NASA Workforce –

What we know about higher education student participants:

- 9,746 underrepresented students participated in NASA education programs (fewer due to budget cuts)
- 2,474 students received significant support **Space Grant** (received \$5K or 160 hours)
- 59,468 additional students were served through **Space Grant** projects and activities

2007 Office of Education Highlights

Improving STEM Education – What we know about K-12 Education:

- 62% of educators who participate in NASA training programs use the resources in their instruction
- 50% of SEMAA students plan to work in STEM careers

2007 Office of Education Highlights

National Reach of STEM Education –

- 408,774 K-12 students participated in NASA activities
- 230,867 K-12 students, their parents and teachers participated in **Space Grant** precollege activities
- 45,305,795 Pageviews through the Education website (\$0.032 cost per page view)

2007 Office of Education Highlights

Engaging and Inspiring – What we know about Informal Education:

- 350 Museums and Science Centers are actively engaged in major NASA events
- 1750 Informal education providers are served by NASA resources
- 214,106 Individuals participated in **Space Grant** Informal Education projects and activities

Notable Progress on Key Issues

Performance Measurement

- Baselines and targets established
- Developing one data collection system for performance evaluation and project management
- Requirements & guidance incorporated into project plans

Evaluation

- Budget established for evaluation & performance measurement
- All projects will have external evaluations every five years – solicitation is in the process
- Evaluating education investments using randomized control trials (RCT's) & other rigorous methods
- Plan responding to the NRC recommendations is in place

Notable Progress on Key Issues

Portfolio Management

- Balance education portfolio to reduce unnecessary duplication, replicate, or increase investments in successful projects through the Education Coordinating Committee (ECC)
- Strengthen partnership efforts with Mission Directorates and functional offices
- Responding to NAC recommendations – implementing strategies to attract top academic students

New Education Initiatives in FY 2008

Competitive Grant Program

- \$14.1 M for a competitive education grant program. These grants shall be awarded to public schools and non-profit organizations on a competitive basis. NASA is directed, no later than 90 days after enactment of the Act, to report to the Committee the criteria it will use in reviewing and ranking grant proposals.
- Available procurement budget estimated at \$11.64M
- Report due March 24, 2008

New Education Initiatives in FY 2008

Competitive Grant Program

- **External group discussion February 8, 2008**
- **Potential Topics**
 - What elements, restrictions, information inhibit/foster proposer creativity?
 - What guidance on project evaluation should be provided?
 - How will NASA recognize proposals with a high likelihood of success?
 - What types of projects best contribute to the pipeline of future workforce?
 - What are the latest trends in education research?
 - What is current in various education disciplines (on-line learning, evaluation, curriculum development, educator professional development, student hands-on experiences, etc.)?
 - How do we encourage partnerships from proposers?

New Education Initiatives in FY 2008

Global Climate Change Program

- \$8.5M for a competitive program to educate students on global climate changes as recommended in the National Academies' Earth Decadal Survey
- Solicitation will address innovative opportunities for educating students on global climate change with a special component focusing on teacher education preparation (pre-service)
- Input for the solicitation development process will be sought from related Federal agencies, professional agencies, and the target scientific community
- The solicitations are expected to be released early summer 2008
- NASA is reviewing whether to issue a single award in cooperation with a partner, or multiple awards

New Education Initiatives in FY 2008

Museum and Planetarium Grant Program

- \$9.4M for a competitive program as authorized by section 616 of Public Law 109-155 for science museums and planetariums to enhance programs related to space exploration, aeronautics, space science, earth science or microgravity
- Award sizes anticipated to range between \$250K and \$2M
- Funding will be used to enhance education programs related to space exploration, aeronautics, space science, earth science, or microgravity

New Education Initiatives in FY 2008

Visitor Centers

- \$7M for the development of educational activities at NASA Field Centers, as proposed by the Senate
- NASA to distribute the amount in equal increments to each Center's official Visitor Center for the development of educational activities in STEM, including exhibits
- Potential Topics
 - Constellation Exhibit
 - LCROSS
 - Update NASA Educator Resource Centers at the NASA Field Centers and Visitor Centers
 - Training in NASA Education Content and Resources

Student Ambassadors Program

- A virtual student community designed to foster greater interaction and mentoring relationships among outstanding interns of NASA higher education projects
- NASA Student Ambassadors will have the chance to participate in NASA events, and be apprised of employment opportunities and educational experiences
- The net result of these interactions and opportunities will be increased skill development and greater likelihood of successfully completing their STEM degree and entering the NASA workforce
- A major outreach effort of the community is to enhance communication with the 18 to 30 year old STEM population

Student Ambassadors Program

- The NASA Student Ambassadors will work alongside NASA scientists and engineers and will perform the following duties at NASA events and other NASA-related activities:
 - The 50th Anniversary events, including Folk Life Festival and Hubble Telescope events
 - Meet the Administrator: April 2008
 - Peer networking and mentoring
 - Recruitment and Career Fair events
 - Disseminate NASA internship, research, and education opportunities

Student Ambassadors Program

- **Functionality of the NASA Student Ambassador Virtual Community**
 - Designed and maintained by 18 to 30 year olds (university interns, contractors and staff)
 - Personalized registration and login for students and project managers
 - Blogs, discussion/message boards, and chat capabilities
 - NASA events and activities listings
 - Internal/external links to STEM related activities
 - File exchange/share capabilities
 - Real-Time polls
- **Evaluation components**
 - Ability to determine the NASA Ambassador's site impact
 - Ability to track and analyze site traffic and provide blogging summaries
 - Ability to gain feedback on ideas for improvement from the user perspective
 - Ability to provide on-going reporting on a weekly and biweekly basis

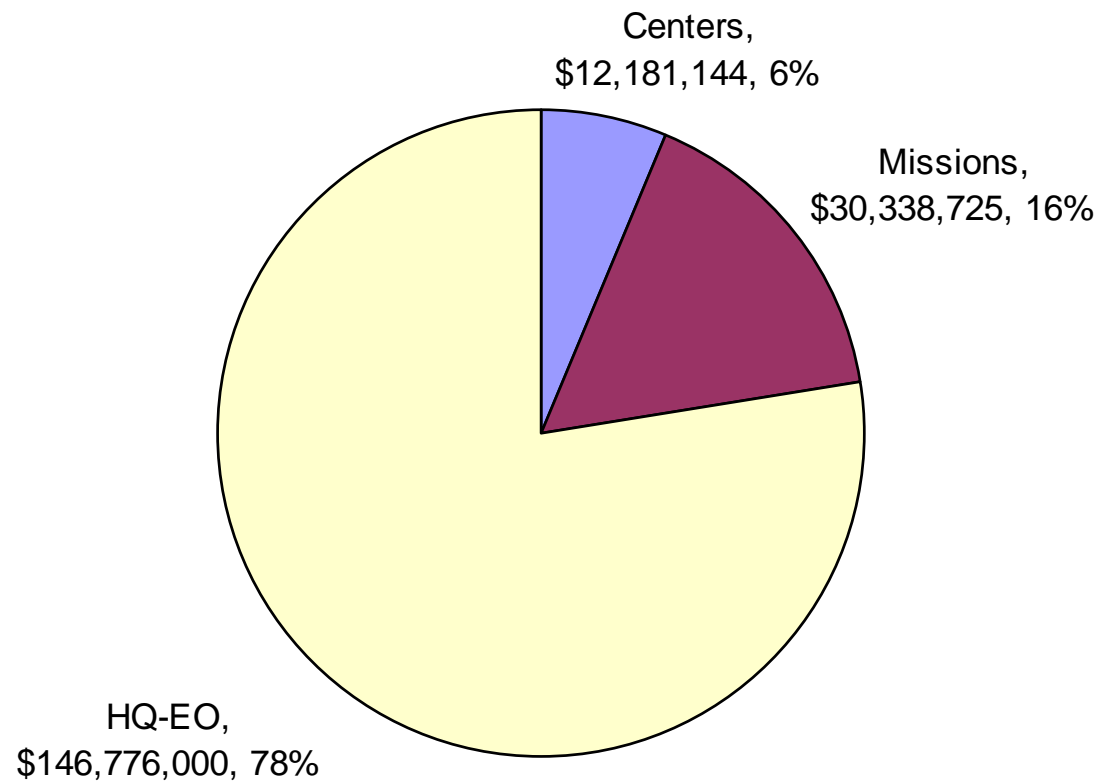
NASA Education

Background Information

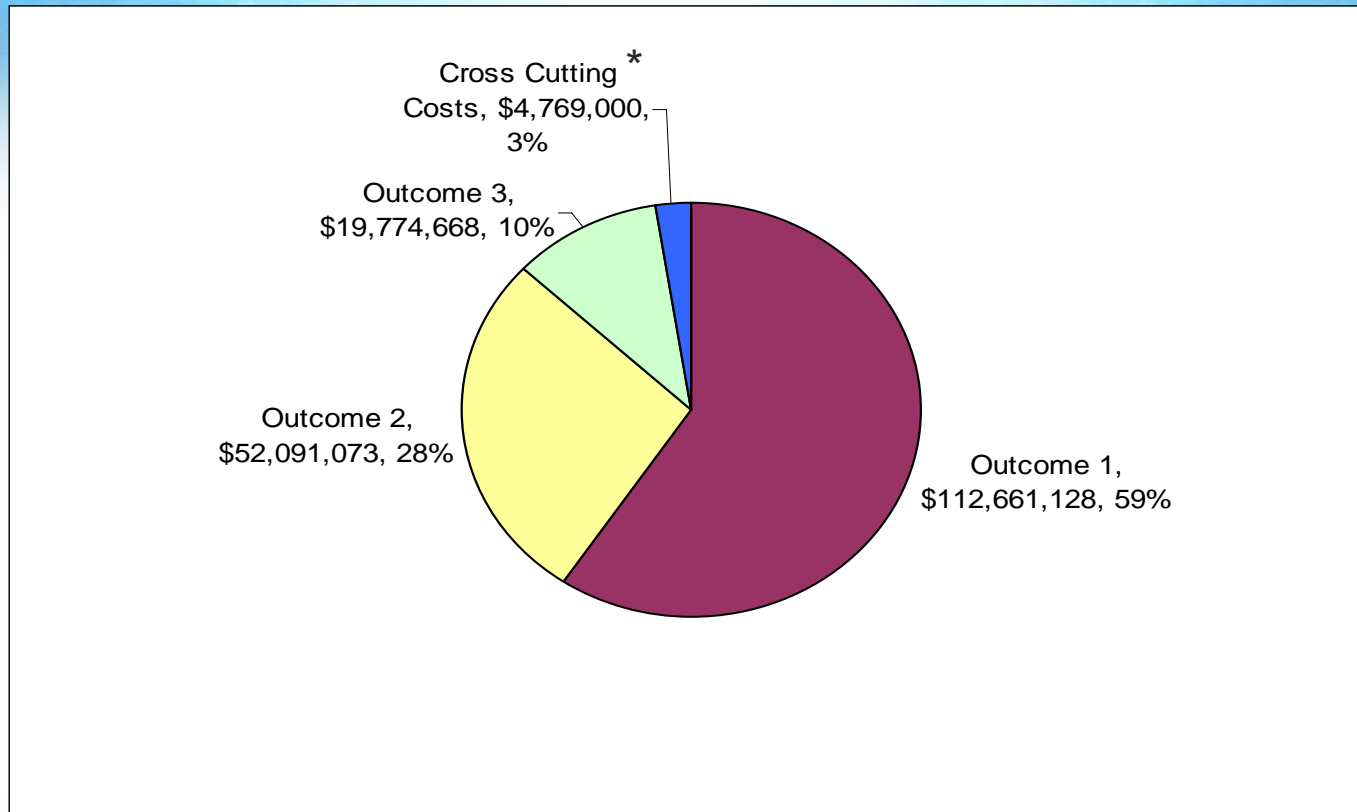
NASA Education

FY08 NASA Education Funding by Source

Total: \$189,295,869



FY08 NASA Education Funding by Outcome Total: \$189,295,869



***Cross Cutting costs include conference support, liens, database development, evaluation, etc.**

Interagency Aerospace Revitalization Task Force

- In recognition of the unique and ongoing workforce challenges facing the aerospace industry, Congressman Vernon J. Ehlers (R-Michigan, 3rd District) introduced legislation to formally establish an Interagency Aerospace Revitalization Task Force
- Goal is to develop a strategy to address the unique and ongoing workforce challenges currently facing the aerospace industry
- Endorsed by a bipartisan group of 30 House of Representatives co-sponsors, this bill was passed by Congress and signed into law by President George W. Bush on December 20, 2006

Interagency Aerospace Revitalization Task Force

Task Force Goals:

- Bring together representatives of federal agencies and departments to address problem of a decline in the number of individuals entering careers in STEM
- Maximize the cooperation and use of resources among Federal departments and agencies in fulfilling the demand for a skilled aerospace workforce across all vocational classifications
- Develop integrated Federal policies to promote and monitor public and private sector programs in science, technology, engineering, mathematics and skilled trades education and training

Interagency Aerospace Revitalization Task Force

- The law appoints the Assistant Secretary of Labor for Employment and Training (ETA) as the chair of the Task Force, and names the Secretary or Administrator of the following Federal departments and agencies to membership on this Task Force:
 - Department of Commerce
 - Department of Defense
 - Department of Education
 - Department of Energy
 - Department of Homeland Security
 - Department of Labor
 - Department of Transportation
 - National Aeronautics and Space Administration
 - National Science Foundation
- Two members appointed by the President from the President's Council of Economic Advisors and the White House Office of Science and Technology Policy

NASA Education

Key Stakeholders and Influences

