

NASA SMD E/PO Overview and Requirements for Phase A E/PO

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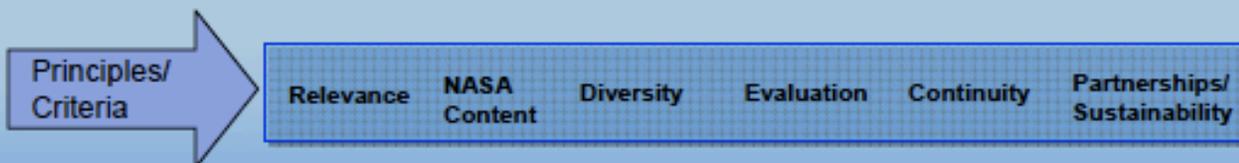
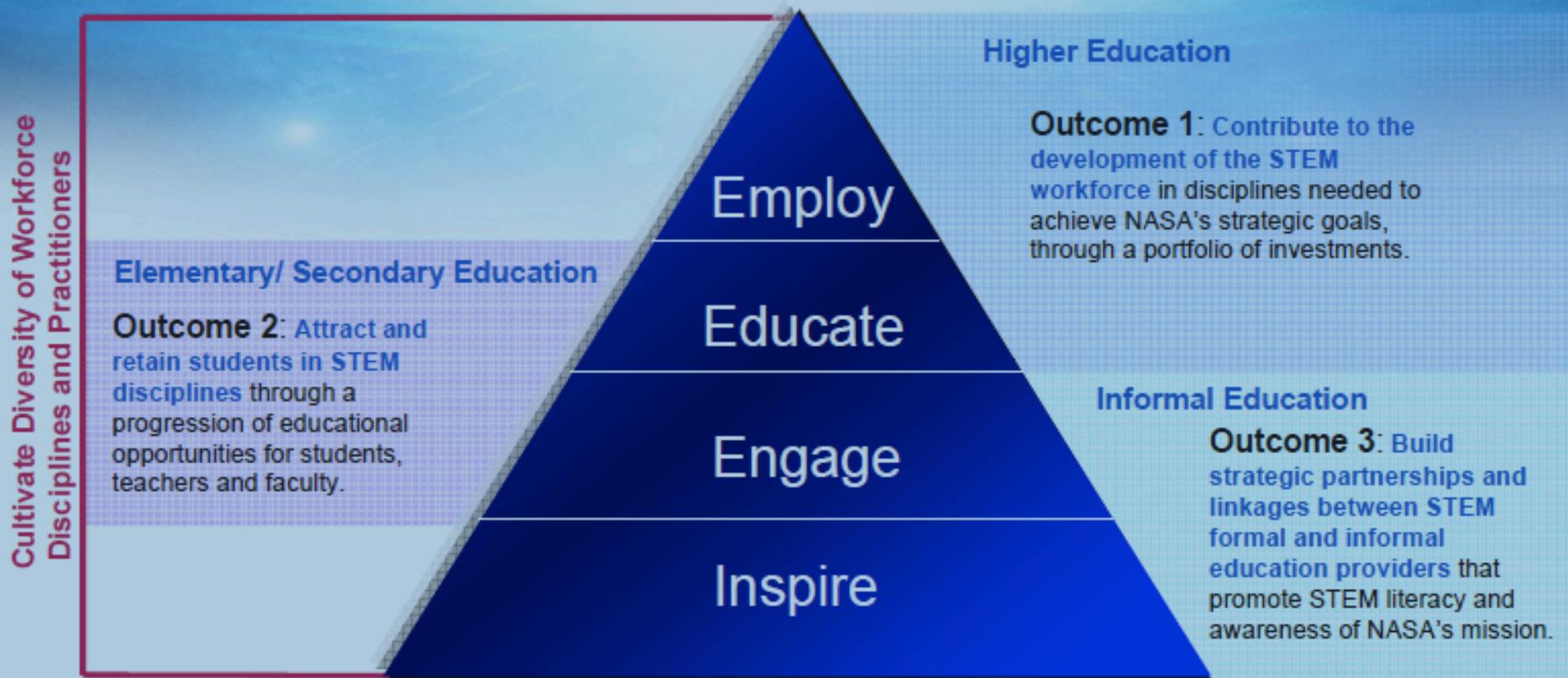
SMD E/PO Mission and Vision

- **SMD fosters the broad involvement of the Earth and space science research communities in E/PO and contributes to NASA's three education goals and outcomes:**
 - **Strengthen NASA and the Nation's future workforce;**
 - **Attract and retain students in science, technology, engineering, and mathematics (STEM) disciplines; and**
 - **Engage Americans in NASA's mission.**

SMD's vision for E/PO is:

To share the story, the science, and the adventure of NASA's scientific explorations of our home planet, the solar system, and the universe beyond, through stimulating and informative activities and experiences created by experts, delivered effectively and efficiently to learners of many backgrounds via proven conduits, thus providing a return on the public's investment in NASA's scientific research.

Education Portfolio Strategic Framework



* Science, Technology, Engineering and Mathematics (STEM)

SMD E/PO Programs

- **Higher education** programs that provide research support to outstanding students pursuing degrees in all disciplines engaged in Earth and space sciences and faculty support to strengthen the teaching capacity of relevant subject matters in Earth and space sciences on college campuses across the country;
- **Elementary/secondary education** activities primarily targeted to improve formal science, technology, engineering, and mathematics (STEM) education; and
- **Informal education** activities to inspire and engage learners of all ages through partnerships with informal learning institutions and community-based groups, such as museums and science centers, the Girl Scouts, amateur astronomers and citizen scientists.

SMD Outreach

Outreach is an essential aspect of the SMD program. It directly connects to many aspects of NASA Public Affairs and NASA education efforts. It often provides an inspirational spark for participants to seek out education opportunities.

The SMD Outreach Goal is to stimulate interest in science, engineering, and technology relevant to NASA SMD. There are four objectives:

- Increase interest in careers that use science, engineering, and/or technology relevant to NASA SMD;
- Increase understanding by the general public of SMD science, engineering, and technologies;
- Increase participation of citizen scientists in SMD education opportunities;
- Increase public engagement in improving science, mathematics, engineering, and technology education in the United States. Outreach can be directed at any audience including students, teachers, citizen scientists, and the general public.

Requirements for the E/PO Programs of SMD Missions

- **SMD missions must have an E/PO program that supports NASA's strategic goals and objectives for education and outreach, contributes to NASA's education portfolio, and is aligned with SMD's E/PO portfolio.**
- **SMD missions must have an E/PO program whose quality has been demonstrated through independent, external review and assessment.**
- **SMD missions must have an E/PO program that is funded with at least 1% of the total prime mission cost excluding launch vehicle. No more than 35% of the E/PO budget may be allocated before launch.**
- **SMD missions will designate an E/PO Lead who has the qualifications and experience necessary to successfully implement the mission's E/PO program.**
- **SMD missions will partner with NASA and non-NASA organizations as appropriate in order to increase the quality and reach of the E/PO program.**

Phase A E/PO Plan

- The preliminary E/PO plan must be developed during Phase A. Review and comment (not approval) of the initial E/PO plan is a KDP-B gateway product. Review and comment is provided by the Division E/PO lead. For missions down selected through a competitive Phase A, review and comment is also provided by the E/PO evaluation panel.
- These plans shall include brief descriptions of proposed E/PO activities and roles and responsibilities of E/PO team members (including external partners). Each shall activity include intended audience, portfolio element and linkage to the mission science and/or technology component. For K-12 audiences please provide information on National Science Education Standards addressed. The page-length of the plan should reflect a level of effort based on the amount of E/PO funding.
- The plan shall also include a brief discussion of the evaluation approach.

SMD E/PO Evaluation Factors

Intrinsic Merit

- **Quality, Scope, Realism, and Appropriateness:** Projects and activities have a clear intellectual linkage to SMD science/technology and the science/technology of any associated research effort, are clearly organized, consistent with the requested budget, have clear lines of management responsibilities, and demonstrate a high probability for successful implementation.
- **Continuity:** Projects and activities draw from audiences that have demonstrated interest in NASA and connect participants to the next level of engagement.
- **Partnerships/Sustainability:** Projects and activities leverage and achieve sustainability through their intrinsic design and the involvement of appropriate local, regional, and/or national partners in their design, development, or dissemination. As appropriate, key aspects of projects and activities are replicable, scalable, and demonstrate potential for continuation beyond the period of direct NASA funding.
- **Evaluation:** Projects and activities document their intended outcomes and use metrics to demonstrate progress toward and achievement of these outcomes and annual performance goals. Evaluation methodology is based on reputable models and techniques appropriate to the content and scale of the targeted activity, product, or project.

SMD E/PO Evaluation Factors

Relevance to NASA's Objectives

Customer Needs Focus: Projects/activities have been designed to respond to a need identified by the education community, a customer, or a customer group.

Content: Projects and activities use NASA content, people or facilities to involve educators, students, and/or the public in NASA science, technology, engineering, and/or mathematics.

Cost

Resource Utilization—The adequacy, reasonableness, and realism of the proposed budget including demonstration of effective use of funds.

SMD E/PO Evaluation Factors

Program Balance Factors

Pipeline: Through the use of NASA Earth and space science, projects/activities/products make a demonstrable contribution to attracting diverse populations to careers in science, technology, engineering, and mathematics (STEM).

Diversity: Through the use of NASA Earth and space science, projects/activities/products reach identified targeted groups. They contribute to the involvement, broad understanding, and/or training of underserved and/or underutilized groups in science, technology, engineering, and mathematics (STEM).

Please see:

<http://science.nasa.gov/researchers/education-public-outreach/explanatory-guide-to-smd-e-po-evaluation-factors/> for further details

SMD E/PO Forums

Missions developing Science Mission Directorate (SMD) education and public outreach (E/PO) programs are encouraged to collaborate with the Science Education and Public Outreach Forums.

The Forums are teams of scientists and educators that work closely with SMD to support and coordinate its E/PO community. The SMD community includes missions, programs, contractors, and grantees funded to conduct E/PO activities using SMD content, expertise, and facilities. Each SMD Science Division has its own Forum.

The Heliophysics Forum is lead by Laura Peticolas
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The Astrophysics Forum is lead by Denise Smith
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