

PLANETARY SCIENCE EDUCATION AND PUBLIC OUTREACH: HOW SCIENTISTS CAN GET INVOLVED! S. Shipp¹, S. Buxner², H. Dalton¹, E. CoBabe-Ammann³, D. Boonstra⁴, J. Ristvey⁵, E. Halligan¹, C. Shupla¹, A. Wessen⁶, R. Zimmerman-Brachman⁶, C. Igel⁵, L. Bleacher⁷, D. Scalice⁸. ¹Lunar and Planetary, Houston, TX, shipp@lpi.usra.edu, ²Planetary Science Institute, Tucson, AZ, ³Emily A. CoBabe & Associates, Inc., Boulder, CO, ⁴Sustainability Schools Consulting, Chandler, AZ, ⁵Midcontinent Research for Education and Learning, Boulder, CO, ⁶NASA Jet Propulsion Laboratory, Pasadena, CA, ⁷NASA Goddard Space Flight Center, Greenbelt, MD, ⁸NASA Astrobiology Institute, NASA Ames Research Center, Mountain View, CA.

Introduction: The purpose of the Planetary Science Education and Public Outreach (E/PO) Forum is to engage, support, and extend the community of E/PO professionals and scientists involved in planetary science education activities. The Forum helps strengthen the Science Mission Directorate's (SMD) Planetary Science Division (PSD) science and education community through communications such as newsletters and monthly telecons, online interactions using a community workspace (<http://smdepo.org>), and meetings (annual E/PO community meetings and meetings of opportunity at science and education conferences), the Forum provides opportunities for community members to stay informed, communicate, collaborate, leverage existing programs and partnerships, and become more skilled education practitioners.

Increasing Effectiveness: SMD's four audience-based Working Groups provide direction about the needs of the higher education, K-12 education, informal education, and public audiences; this informs the activities and products of the community and the Forum so they are able to better serve these audiences. Over the next three years, the Forum will work with the community and PSD to develop thematic educational approaches. This work is underway with the implementation of the Year of the Solar System (<http://solarsystem.nasa.gov/yss>; LPSC 2012 abstract #2503), which placed mission and other educational activities in the context of the overarching concepts of planetary science.

Additionally, the Forum is assisting in the review of SMD's portfolio of education products and activities in order to strengthen these resources and identify gaps and needs in the portfolio. Once complete, the reviewed products and activities will be integrated into a single online resource (currently dubbed the "Catalog of Wonders"), easily accessible to intended audiences.

The Forum also is concentrating efforts on supporting the development of a network of higher education faculty. The design and creation of an online Higher Education Clearinghouse (HECI – <http://www.lpi.usra.edu/heci>; see LPSC 2012 abstract #1634), through which faculty can view news and funding information, learn about teaching undergraduates through the latest education research and re-

sources, and share undergraduate course materials, including lectures, labs, and homework, has been completed and is ready for use by higher education faculty.

Why is Educational Outreach Important -- Especially in the Sciences? More than 80% of Americans report they are "very" or "moderately" interested in new scientific discoveries, yet "U.S. survey data indicate that many Americans cannot provide correct answers to basic questions about scientific facts and do not apply appropriate reasoning strategies to questions about selected scientific issues." Answering a series of questions designed to test basic knowledge, only 50 percent of Americans know how long it takes the Earth to circle the Sun. Only 38% of Americans correctly responded to questions testing the concept of an experiment, and 22% to questions testing the concept of scientific investigation [1].

Only 17% of the public described themselves as well informed about new scientific discoveries and the use of new inventions and technologies. Less than 15% considered themselves well informed about space exploration [2].

There is a need to increase scientific understanding among the public. The challenges increasingly dominating our society - economic downturns, global warming, threats to human health, reduced biodiversity, access to ample and clean food and water - require scientific and technologic applications and advances. In order to navigate these challenges and make informed decisions, the public – as consumers, professionals, and citizens – need to be scientifically literate.

Why Should Scientists Get Involved in Education and Public Outreach?

1) Scientists are the holders of current, accurate scientific knowledge -. The public wants to hear about your work from you! Your passion and expertise makes you unique in your ability to share science.

2) Scientists can share that science is interesting, exciting, fun, challenging, and relevant to society. Scientists transfer ownership of science to the public by increasing access to scientific thought and discovery. This can be achieved through a variety of vehicles and in collaboration with partners such as journalists, teachers, science educators, etc.

How to Get Involved! There are a myriad of ways available for planetary scientists to become more involved in SMD E/PO! The Planetary Science Forum can help you:

- Discover education programs needing scientist input and/or support;
- Build relationships with education specialists to work with you on educational programs;
- Learn about NASA funding possibilities and how to successfully acquire education funding;
- Find out what education resources already exist;
- Obtain resources to share with students of all levels, from K-12 to undergraduate and graduate students; and
- Understand what research says about how we learn and effective teaching techniques.

If you are interested in being part of the SMD E/PO Community – or would like more information about opportunities to participate – contact:
PlanetaryForum@lpi.usra.edu

References: [1] National Science Foundation Science and Engineering Indicators 2010, <http://www.nsf.gov/statistics/seind10/c/cs1.htm>. [2] National Science Foundation, Science and Technology Pocket Data Book, 2000, NSF 00-328. <http://www.nsf.gov/statistics/nsf00328/htmstart.htm#public>.