LIBRARIES’ ROLES IN SCIENCE EDUCATION: Over 16,000 public library outlets exist nationwide, often at the heart of rural and urban underserved and low-income populations. Today’s public library is very different from that of 10 years ago. Recognizing that they are the only public institutions to offer free access to information, technology, and services to at-risk populations, libraries provide continuing education, academic assistance, parenting classes, and children’s programs in accordance with the cultures and needs of their local audiences. Attuned to the need to support academic achievement, librarians seek science programming for their children’s and youth programs, including resources, content training, and methods for engaging their audiences. Facing this increased demand is the need for materials and training; these organizations have little experience in science content and engagement.

EXPLORE LIBRARY PROGRAM MODEL: The Lunar and Planetary Institute’s (LPI) Explore program creates children’s programming focusing on space and planetary science themes. To date, 11 topics have been developed; each includes hands-on activities specifically designed for the library environment, content for the facilitators, and resources for further exploration. All materials are reviewed by planetary scientists. Facilitator trainings and Web-based events prepare librarians to implement programs in ways tailored to their own communities. Since its inception 15 years ago, the Explore program has grown to support a community of over 900 professionals at libraries, parks, museums, planetariums, and other community centers in 35 states — all trained to bring Earth and space science and engineering to their children’s and youth programs. A follow-up survey of the Explore community was conducted in spring 2013, and the 168 respondents indicated that 86% are actively using Explore materials, and 60% implement Explore activities on a regular basis.

A NEW MODEL FOR SUSTAINABILITY: While the Explore Program has been successful in preparing librarians to engage their communities in science, feedback from participants suggested the exploration of evolving training models. In addition to broadening the content they offer, libraries are working to establish local partnerships to broaden their access to their community, leverage local resources, and to build sustainable programs. In addition, individual librarians may change positions or leave the field.

DEVELOPING THE MATERIALS: In 2009, LPI created the Explore: Jupiter’s Family Secrets module for the Juno mission, and began implementing two-day trainings in several states with large rural populations. The module passed NASA education product review and has been posted as a CMR/508 compliant PDF on JPL’s Juno Education and Public Outreach site: http://www.nasa.gov/mission_pages/juno/education/explore.html.

CLUSTER TRAININGS FOR SUSTAINABILITY: In FY2011, LPI began testing a new model of training — “cluster of trainings” — at three different locations within the Mid-Atlantic region comprised of PA, WV, VA, DE, MD. This strategic concentration of efforts was designed to help libraries build long-term regional partnerships with other STEM-education organizations, with the intent of providing more local support for librarians to make the efforts more sustainable. This regional cluster model incorporated mentors—inviting select participants to return as library mentors at successive workshops, who will serve as role models and regional resources. Mentors provided tips on how they
implemented the activities, how they incorporated the materials into their programs, how they built partnerships, and how they engaged their communities.

To fulfill these goals, LPI conducted trainings in State College, PA, Morgantown, WV, and Roanoke, VA. (Additional planned trainings were not implemented, due to the federal budget sequestration and an early ending to the program, which was intended to continue through FY2014.) A total of 58 librarians and 11 other informal educators attended the trainings.

The State College and Morgantown trainings were rated by external evaluator Lyn Swackhamer as very successful, with strong positive responses by participants. Due to the late date in relation to the Juno E/PO program, the external evaluator was not able to analyze the Roanoke evaluation data, but data were gathered by LPI for its internal evaluation processes. The results indicate participants were extremely satisfied with the training, with 100% of participants reporting that the experience overall was very good to excellent (an average of 4.8 on a scale of 1 to 5, with 5 being excellent). Ninety six percent indicated that they plan to implement most or all of what they learned.

Incorporating Mentors for Sustainability: In an innovative plan to build sustainability, four librarians participated as mentors within the trainings, after first attending the training as participants. The role of the mentors was not as thoroughly assessed as planned, as the evaluation efforts ended in September 2013 (original plans called for the efforts to continue through FY 2014). However, mentors have expressed an interest in continuing to communicate with the librarians in their states, in sharing their experiences, and even have asked permission to conduct their own workshops to share out the Juno resources. One librarian mentor with the Library of Virginia is incorporating the materials into other STEM librarian workshops she is facilitating, and included a description and photos of the workshop in the Virginia youth services librarian newsletter. In October 2013, another librarian mentor contributed to an ALA (Association for Library Services to Children) blog as a result of her Juno experiences; the blog is available online at www.alsc.ala.org/blog/2013/10/launch-into-stem-programming-with-lpi/

The effort also incorporated local and regional connections to provide more sustainable support for participants. Educators from the NASA Aerospace Education Services Project (AESP) and from NASA Wallops Space Flight Center and NASA IV&V were incorporated as presenters within select trainings, and participants met members of local astronomy clubs. Select educators from museums, state and national parks, scouting organizations, and afterschool organizations also attended the trainings, to provide insight and possible future collaborations with the librarian participants. All attendees received contact information for NASA Centers, AESP, and astronomy clubs within their states.

Significant effects of this effort are the increased interest in space science programs at libraries and the networking that occurred between librarians and other organizations. Lasting effects will require further evaluation.


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