



**SMILEPATHWAY**  
ALL THE BEST ACTIVITIES IN ONE SEARCH

## **What Do Informal Science Institutions Want in a STEM Digital Resource Collection? A Front-End Survey from SMILE**

### **Executive Summary**

A partnership of science museums in the midst of developing a new online library of STEM resources recently conducted a front-end survey to help inform the design of that collection. Called SMILE (the Science and Mathematics Informal Learning Educators Pathway), the collection is being designed especially for those who teach a diversity of school-aged children in non-classroom settings such as museums, aquaria, or afterschool and outdoor education programs.

SMILE is a joint project of UC Berkeley's Lawrence Hall of Science (LHS), the Exploratorium, the New York Hall of Science, Science Museum of Minnesota, Children's Museum of Houston, and the Association for Science-Technology Centers, with support from the National Science Foundation.

Our front-end survey aimed to accomplish the following:

- To determine the readiness and available resources of informal science institutions to use and contribute to a digital resource collection
- To gather information about what kinds of resources, tools, and services informal science institutions would like available as an integral part of a digital resource collection such as SMILE
- To inform the design of searching approaches, and to determine the kinds of specific information needed for cataloging useful and high-quality resources for informal educators.

### **Sample and Procedure**

In the summer of 2008, we sent a web-based survey to 500 informal science institutions of varying sizes, targeting the education, web, and program directors at each institution.

We compiled the mailing list from the Association for Science-Technology Centers, Center for Informal Learning and Schools, and Association of Zoos and Aquaria directories. Data collection took place for over a 3-month period. Altogether, 112 informal science institutions responded (a 22% response rate).

## Results

- A majority of Informal Science Institutions (ISIs) (52.7%) report they currently have a digital collection of educational resources that relate to science, mathematics, engineering, and/or technology.
- ISIs use a variety of STEM resources which include books, websites, and online resources provided by organizations such as the National Science Teachers Association and NASA, PBS, and the Lawrence Hall of Science.
- Among the different formats for activities, print-out instructions for hands-on STEM activities was the most desired format, winning out over online media (4.1 / 5) with outdoor field guides (3.96 / 5), videos of facilitated demonstrations (3.86 / 5), and engineering challenges closely following (3.62 / 5).
- Respondents valued subject/topic area (4.46/5), fun and engagement (4.32/5), and age-level (4.01/5) as the top three most important criteria for choosing activities to use.
- In selecting activities based on rating and review information, respondents predictably valued inquiry-based (4.38/5) and quality content (4.41/5), but also alignment to standards (4.13/5) and evaluation results from tested activities (3.75/5).
- ISIs report that hardcopy print outs and outdoor field guides were the most likely kind of resource they could contribute to SMILE.
- Provided with a range of different possible services, ISIs report being most interested in using services related to building a community, which would include opportunities for professional development and networking, as well as evaluation and recommendation of resources provided by community members.
- While likely due to the limited number of visual-based search tools available, keyword search is the predominant way that information is currently searched (83.6%).

- Given eight different choices for online search and/or repositories for STEM learning and teaching resources, Google and the Exploratorium website were the most familiar to these respondents, indicating an opportunity for SMILE and NSDL.org to attract new audiences and broaden their reach.