



NISE Exhibits & Programs Marketing Survey

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THIS IS A FORMATIVE EVALUATION REPORT

Formative evaluation studies like this one often:

- **are conducted quickly**, which may mean
 - small sample sizes
 - expedited analyses
 - brief reports
- **look at an earlier version** of the exhibit/program, which may mean
 - a focus on problems and solutions, rather than successes
 - a change in form or title of the final exhibit/program

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Background

A primary goal of the NISE Network is to connect the public to nanoscale science, engineering, and technology in 100 science centers and other informal learning environments by the end of five years. The Exhibits and Programs group, led by the Science Museum of Minnesota, conducted this marketing survey in an effort to find out what kinds of nano exhibits and programs institutions would find most useful, and what other forms of assistance the NISE Network could provide. Each of the NISE exhibit partners was asked to identify five survey participants and then call them to describe the NISE network and this marketing survey. The survey was implemented through Survey Monkey, an online survey tool. A total of 34 people (out of 48) replied to the survey (71% response rate).

Results and Discussion

Nanoscience Areas of Application

Nanoscience is cross-disciplinary, with many areas of application. Respondents had the most interest in nanoscience applied to biology, human body, and medicine (94%) and environmental sciences (86%)(see Table 1). Comments reflected an interest in approaching nanoscience as an interdisciplinary topic.

We would approach nanotechnology as an interdisciplinary field, with basic introductions in a centralized gallery that [have] connections into our existing galleries and content areas — emerging technology, life science, space science, physical science and environmental science.

Ideas for additional areas of application included material sciences, forensics, social impacts of nanotechnology, the differences between the natural world and synthetic world of manmade materials and devices, and space science. (Note that these responses do not necessarily reflect the interests of museum visitors.)

Table 1: Staff Interest in Nanoscience Areas of Application (n=34*)

	Percent of Respondents
Biology, human body, and medicine	94%
Environmental sciences	86%
Physics and chemistry	68%
Security, defense and military	29%
Other	18%

*Some respondents were interested in more than one area of application.

Nanoscience Programs

There is a range of programming options institutions can utilize to teach visitors about nanoscience. Respondents were most interested in demonstrations (82%) and tabletop or cart-based explainer kits (79%)(see Table 2). Additional programming ideas from respondents include planetarium programming, podcasts, tours to research centers, multi-player learning games, and online learning materials. Again, this reflects museum staff perceptions about what will be interesting, but these responses do not necessarily reflect the interests of museum visitors.

Table 2: Nanoscience Programs of Interest to Organization (n=34*)

	Percent of Respondents
Demonstrations	82%
Table top or cart-based explainer program kits	79%
Hands on workshops	71%
Resources to train museum staff about nano	68%
Curriculum materials	68%
Teacher and chaperone field trip preparation materials	59%
Lectures	44%
Media for local broadcasts	32%
Theater performances	29%
Other	26%
Forums or town hall meetings	24%
Distance learning	24%
Career awareness presentations	24%
Webcasts	18%

* Some respondents were interested in more than one type of program.

Challenges to Offering Nanoscience Exhibits and Programs

More than three quarters of those surveyed (77%) are at institutions that have not offered nanoscience exhibits or programs. Even though a majority of the respondents are from institutions that have not offered nanoscience exhibits and programs, there was strong interest among respondents in offering them in the future. Only 3% had no interest in nanoscience exhibits and programs. About two thirds (65%) of the respondents were definitely interested, while one-third (32%) replied “maybe.” These respondents said their interest was dependent on a variety of factors including financial resources, exhibit and program content, space available, scheduling, mission constraints, age appropriateness, engagement, and the interactive nature of the exhibits.

The most common reasons why the institutions had not offered nanoscience exhibit or programs were that they have not had the opportunity (77%) and their staff is not knowledgeable about nanoscience (62%)(see Table 3). Half of the “other” responses were related to concerns about the effectiveness of using hands-on exhibits to explore nanoscience.

Some subjects lend themselves to being explored in an exhibit while others are better suited to being covered in a program. I suspect that nanoscience is inherently a poor topic for exhibition: the science is complex; the real thing is invisible; visitors have trouble using analogy; visitors can't experiment with the real thing. Better for a lecture or series of lectures.

None of the respondents felt that lack of staff interest and relevance to mission were reasons not to have nanoscience exhibits or programs.

Table 3: Reasons for not offering Nano Exhibits and Programs (n=26*)

	Percent of Respondents
Have not had an opportunity to do this	77%
Staff not knowledgeable about nano	62%
Institution had no resources to support nano	46%
Audience not knowledgeable about nano	35%
Other	23%
Audience not interested in nano	4%

*Some respondents indicated more than one reason.

Respondents were asked to rate a list of common hurdles in relation to nanoscience exhibits and programs on a scale of 1 to 10 (where 1 is not concerned to 10 is highly concerned)(see Table 4). Funding was the greatest concern.

Table 4: Concerns Regarding Common Hurdles (n=33)

	Average Rating
Money to purchase or create nanoscience exhibits or programs	9.1
Marketing a difficult subject	6.2
Audience Interest	6.1
Space for exhibits or programming	5.4
Relevance to our mission	3.9

Size and Types of Exhibits and Exhibitions

Nanoscience exhibits and exhibitions will be dependent on the space institutions have available and are willing to devote to them. Over three fourths of respondents (79%)

indicated they were willing to devote space for small, stand-alone exhibits and over half (61%) said they would be willing to host an exhibition under 1000 square feet (see Table 5). Respondents also expressed willingness to fit what they could into their existing exhibit space. “Whatever we could fit in with our existing science showcase area - approximately 200 sq. ft.” and “If the angle is right we could incorporate exhibits, maybe software, into new exhibit space being planned.” In some instances, they expressed willingness to devote more than 1,000 square feet to nano with square footage ranging from 2,000 sq. ft. to 8,500 sq. ft. There were a number of respondents who suggested alternatives to exhibits or exhibitions they would be willing to work into their institution, such as wall-based posters and graphics, lab demonstrations, hands-on experiences, and a portable unit that could travel around the state. For a few of the respondents, willingness to devote space was also dependent on features of the exhibits and exhibitions: “long-term vs. traveling exhibit, hands-on vs. static exhibit,” “needs to have some depth to it,” and “modular to enter the building.”

Table 5: Space Willing to Devote to Nanoscience (n=33*)

	Percent of Respondents
Small, stand-alone exhibit	76%
1000 sq ft exhibition	61%
Over 1000 sq ft exhibition	18%
Other	18%
None	3%

*Some institutions were interested in more than one space.

In addition to space available, respondents were asked about the types of nanoscience exhibits and exhibitions they would be interested in. Most were interested in temporary exhibitions (91%)(see Table 6). More than two thirds (70%) were interested in interactive media displays. For some respondents, interest in long-term exhibitions was dependent on content. “We would be interested if it fit with other existing themes (i.e., human body),” and “As long as it is in the biological and environmental realm we are open to lots of things, permanent exhibits, classroom activities, maybe even the web.” Some institutions didn’t specify a type of exhibit or exhibition but discussed in a larger context how nanoscience could fit into their institution. “We are exploring the concept of scale and can see nanoscience playing a continuing role in that larger theme,” “Perhaps as a small part of our [existing] gallery,” and “Collaborating on exhibits that could be adapted to our unique setting (materials, design features, hardness).”

Table 6: Interest in Types of Nanoscience Exhibits and Exhibitions (n=33*)

	Percent of Respondents
Temporary	91%
Interactive media displays that can be updated regularly	70%
Long-term	42%
Other	15%
None	3%

*Some respondents were interested in more than one type of exhibit or exhibition.

Means to Acquire Nano Exhibits and Exhibitions

There was high interest in leasing a nano exhibition and in getting resources to create their own (see Table 7). One respondent commented that they would lease “if the price and size are right and if it’s a great exhibit! Wouldn’t be our first choice of topic.” Some respondents were specifically interested in both leasing an exhibition and obtaining resources to create their own.

We would consider a combination of leasing a small exhibit while developing our own. To save resources, we would be interested in primarily complete exhibits (plans, models, etc.) that we could modify or adjust to our exhibition plans.

Respondents mentioned that their interest would be dependent on the price and kinds of exhibits that would be included.

Table 7: Means to Acquire Nano Exhibits and Exhibitions (n=33*)

	Percent of Respondents
Lease a nano exhibition	64%
Resources to help create our own nano exhibits or exhibitions	61%
Buy a nano exhibition	18%
Other	9%
Not interested in nano exhibits or exhibitions	6%

*Some respondents were interested in more than one means of acquiring nano exhibits.

For those who indicated an interest in obtaining resources to create their own nano exhibits or exhibitions, they were asked to rate on a scale of 1 to 10 (where 1 was useless and 10 was useful) how useful various resources would be in assisting them in developing nano exhibits or exhibitions (see Table 8). Respondents rated all of the resources presented to them as useful (i.e., there is really no significant difference between the responses about the usefulness of the resources).

Table 8: Usefulness of Various Resources in Creating Exhibits and Exhibitions (n=13)

	Average Rating
Access to detailed exhibit development and design work	9.5
Access to scientific visualizations	8.9
Access to content expertise	8.9
Access to media	8.5
Workshops on nanoscience exhibit development and design	8.1

Building the NISE Network

The final section of the survey asked for feedback to help guide the collaboration process between the NISE Network and other informal learning institutions. Respondents were asked to provide one good piece of advice, or a complaint from a collaborative project that has or hasn't worked in the past. The most common piece of advice was to make sure the roles and responsibilities of parties involved are clearly defined: "Our collaborations have worked best when we're clear about who's "driving" the project and defining what each partner is to deliver."

As a small museum, we have been invited to "workshops" that were really more of an attempt by larger museums to learn how to better package traveling exhibits to small museums. This is a worthy endeavor, but a little misleading to label it as a "workshop" when the small museums were really serving more in an advisory capacity. Setting up collaborative workshops should clearly define how both parties will benefit, or otherwise, the goals of the session should at least be clearly laid out.

A few respondents also stressed the importance of working as a team, focusing on the same goals, and meeting deadlines. Respondents felt there were many benefits to being a part of a successful collaborative partnerships including an increase in staff content knowledge, creation of quality exhibits, opportunities for professional development, ensuring scientific accuracy of programming, providing access to experts, and sharing resources.

Respondents were also asked to rate ten different ways that the NISE Network could be useful to informal learning institutions interested in nanoscience on a scale of 1 to 10 (where 1 is useless and 10 is useful)(see Table 9). Throughout the survey, respondents stressed concerns regarding funding nanoscience exhibits and programs.

We are a museum who has an annual budget of \$180,000 so spending \$25,000 on a two-month rental would be a huge portion of our already tight budget. I'm wondering if somewhere down the line after all the big museums have had a traveling exhibit, and it's on its last leg, that it could be offered at a reduced rate to a facility like ours.

Respondents see the NISE Network as most useful as a resource to provide funding to both buy and help create exhibits and programs. “If you’d like us to do something, give us money to build something and/or staff time for developing ideas and testing with visitors.”

Table 9: How NISE can be Useful to Informal Science Organizations (n=27)

	Average Rating
Funding to buy exhibits and program materials	9.3
Funding to help create our own exhibits and programs	8.0
Online resource center (articles, lessons learned, etc.)	7.2
Introductions to local scientists and science organizations	7.1
Inclusion into the NISE exhibit and program development process	7.0
Invitations to local/regional NISE events	6.5
Professional development workshops	6.4
Guidelines for evaluation	6.2
Email newsletter	6.0
Allow access to NISE meetings	5.9