Science centers serve a variety of core audiences, from visitors to volunteers to Internet users. But who are these audiences and what kinds of experiences are they looking for? A recent Reach Advisors–ASTC survey identified mothers of young children as one of the largest science center audiences, and men over 60 as one of the most committed. In this issue, we take a look at these and other core users and examine ways to keep them happy and engaged.

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Cover: Science centers serve users of all ages through exhibitions, events, and programs. Photos, clockwise from top left: Teens enjoy some time up close with nature (courtesy the Peggy Notebaert Nature Museum); visitors learn about cloud motion at the Discover R Weather exhibition (courtesy Rochester Museum & Science Center); staff member Christie Leece (right) shows Ashlesha Patel how she can replicate an alternative lawn in her own backyard (courtesy the Peggy Notebaert Nature Museum); a teacher learns how to integrate science into core curriculum subjects during a hands-on session (courtesy EdVenture Children’s Museum); students from the Museum Apprentice Program prepare a fossil in Dinosphere: Now You’re in Their World (copyright 2006, the Children’s Museum of Indianapolis).
Moms, Museums, and Motivations:
Cultivating an Audience of Museum Advocates

By Susie Wilkening

Go to any science museum on a Saturday morning, and a sight awaits you. Children, in particular, are exploring science while having a great time. But what is going on in the heads of the adults, especially the parents, at the science museum? Are they equally engaged, or do they feel that more could be done to captivate their interests and their intellect?

This year, working with ASTC, Reach Advisors, a marketing strategy and research firm based in Slingerlands, New York, set out to explore the motivations and engagement levels of visitors to science museums. When we examined the data, however, we were particularly surprised by the thoughts and expectations of mothers who visit with their children.

Survey methodology

In early 2008, Reach Advisors and ASTC designed a survey to delve into a number of issues of visitor satisfaction and motivations. We then worked with 50 ASTC-member science museums in four countries (the United States, Canada, the United Kingdom, and Australia) to survey their core visitors. Each museum invited those on their e-mail list to take the survey. The e-mail lists included but were not limited to museum members. Over 14,400 respondents completed the survey, with 58 percent of survey-takers responding to the invitation of a science center, 13 percent to a children's museum, 11 percent to a natural history museum, and the balance to other museums that did not fall neatly into any of the above categories. In this article, “science museum” is used as an umbrella term to refer to all these different kinds of museums.

Two-thirds of respondents are parents of minor children, 73 percent of respondents are female, and the respondent base is considerably more affluent and well educated than the general public in all four countries. Most respondents (88 percent) are white.

Respondents overwhelmingly believe their local science museum is “very trustworthy” (84 percent). Additionally, nearly half (47 percent) visit the museum four or more times a year. Nearly three out of five believe that the museum does a good job engaging children “of all ages.” Yet there are challenges, too. When asked what their science museum does particularly well, and instructed to choose the options most important to them, only 8 percent of respondents say they feel that the staff cares about them, and only 14 percent of respondents report that the museum helps bring the community together. These two statistics are consistent with our previous research within the museum field.

Perception: Science centers are for kids

Overall, there is a genuine sense among respondents that science centers in particular (and, to a lesser extent, natural history museums) are designed for children, not adults. (Children's museums are also perceived, not unexpectedly, as being for children, but adults do not have as much of an expectation that a children's museum can, or should, strengthen adult offerings, in contrast with science centers.) And when asked what audiences are served best by the museum, respondents overwhelmingly say children and their families, followed by students. Just over a fifth say adults, while the response for teens is even lower. (See the chart below; note that respondents were asked to indicate all audiences that they thought the museum served best.)

When asked who their science museum serves best, more than 80 percent of survey respondents say children and families. They were instructed to select all that apply.

A mother and child explore the Tinkering exhibition at San Diego's Reuben H. Fleet Science Center. Mothers make up 44 percent of respondents to the Reach Advisors–ASTC survey. Photo courtesy Reuben H. Fleet Science Center
The desire of respondents for additional programming correlates directly with their life stage, especially parenthood. That is, respondents in their 20s want more programming for adults, respondents in their 30s want more for younger children, respondents in their 40s want more for older children, and respondents in their 50s want more for adults.

**Moms: The big challenge**

As we dug through the data, it became clear: Moms are a challenge. While they make up 44 percent of survey respondents, their level of engagement does not match that of adults visiting without minor children. (See the sidebar on page 6.)

Overall, compared with the general public, moms in their 30s and 40s are a well-educated and affluent audience, and most of the moms responding to the survey have children in elementary and/or middle school. They visit a lot; most visit four or more times a year. But unlike the nonparents responding, moms visit for their children. Four out of five moms visit for learning opportunities for their children, two-thirds because their children like to visit, and over half for family time. The focus is entirely on the kids.

What is missing here? **Mom’s interests.** Moms rarely write about their own interests in their written-in comments. And who is also missing here? Dad. Very few fathers responded to the survey. Dads do not come up in the moms’ written-in comments, either. Dads’ interests and engagement are clearly not a priority.

When it comes to membership, moms are budget oriented. Nearly 60 percent of moms join because their memberships pay for services received, and just over half join to save money. Moms cite philanthropic reasons for supporting the museum (such as helping to improve the museum or supporting community organizations) significantly less often than budget reasons.

Moms are also significantly less curious than the topline, or overall, average, with only a third identifying themselves as curious and loving to learn about science. Additionally, moms are significantly less likely to enjoy visiting other types of museums. They only sometimes feel that the science museum makes them better informed, but they want the science museum to inspire them to explore and learn more.

Ultimately, we found that, for the most part, moms are simply not that happy at the science museum. Only a third feel the museum meets the needs of their families. Moms are also generally more negative than other audience segments about the museum, and overwhelmingly think the science museum is for children, not adults.

We believe that moms make themselves second-class visitors at science museums. It is not something the museum does, but a position that moms put themselves in. This became clear when we read the moms’ written-in comments, where most moms write about their children and rarely about themselves and their own interests. But moms do not have to be second-class visitors. They can be engaged as well, without sacrificing any of the experience of their children. Our fear is that if a museum doesn’t engage moms, their ambivalence about the museum will subconsciously rub off onto their children, causing them to stop asking to go to the museum at an earlier age than they would otherwise. Additionally, this may prevent the family from moving on to visit other types of museums, a metric that we are finding to be terribly important, as explained below.

The bottom line on Mom is that she is there for the kids, but not for herself. She is not that engaged, and we need to engage her, her interests, and her intellect, for long-term sustainability. (See the article on page 5.) Instead, moms are going through a pattern of cycling in and cycling out of certain types of museums rather than making a lifelong commitment to museums. What we need are more Museum Advocate moms.

**Museum Advocates**

Reach Advisors has coined four terms to describe people by their relationships with museums: General Public, Casual Visitor, Core Visitor, and Museum Advocate. When we look at demographic profiles of museum visitors and the General Public, we find that a large part of the public does not interact with museums much at all. Within that sphere is a somewhat smaller group of individuals, Casual Visitors, who may visit a museum while on vacation, or for a specific event or exhibition, but generally does not make visiting museums a part of their lives.

Core Visitors make up an even smaller segment of the public. They are individuals who do visit museums on a regular basis, are members, are on e-mail lists, and respond to surveys. Core Visitors think museums are important, but they do not exhibit a strong emotional connection to museums.

The smallest segment of the public, Museum Advocates, does feel this emotional connection to museums. Museum Advocates are engaged.
Science for Mums

By Sue Stocklmayer

The mothers of high school students are a much neglected resource when it comes to communicating science. Research evidence indicates that parents have a strong influence not only on their children’s attitudes toward science, but also on their future career choices. The recent Reach Advisors–ASTC survey, however, indicates that mothers frequently are not personally engaged at science museums. (See the article beginning on page 3.) My colleagues and I have observed that in science museums, mothers often stand back, allowing the dads to dominate the science discussion.

Science for Mums, a pilot program run jointly by the Australian National University’s Centre for the Public Awareness of Science and Questacon, the National Science and Technology Centre (both in Canberra, Australia), set out to address this problem by giving 18 mothers more confidence in talking about science with their children. The course, held one morning each week for six weeks, dealt with the “big ideas” of biology, chemistry, and physics. It included simple hands-on activities that could be demonstrated back at home.

The focus of the program was the high school syllabus, because many mothers play a big part in primary schooling, but feel alienated by high school science. This meant “difficult” ideas such as forces, fields, the periodic table, chemical formulas, and DNA had to be included. The course was designed with a firm eye to gender and misconceptions research. For example, when the group discussed forces in physics, the session began with extensive hands-on activities to gain experience of Newton’s Third Law, an area that, according to misconceptions research, has proved difficult for students. Research into gender aspects of science indicates that a strong emphasis should be placed on relevance and personal contexts. The three facilitators were all female, and the topics were discussed within a framework of issues of interest to women. These included the nature of drugs, the effects of caffeine, chemical problems with cosmetics, forces in the school playground, and so on. Many activities were designed explicitly for the program.

Evaluations indicate that the course was highly successful. All the participants felt that their understanding had increased, and that their pleasure in science center exhibits was enhanced. They felt more able to explain exhibits to their children. At home, the mothers helped with their children’s homework and received help in return to complete their own weekly tasks. They all demonstrated the hands-on activities for their families. At home, the mothers helped with their children’s homework and received help in return to complete their own weekly tasks. They felt even more able to explain exhibits to their children. At home, the mothers helped with their children’s homework and received help in return to complete their own weekly tasks. They felt more able to explain exhibits to their children. At home, the mothers helped with their children’s homework and received help in return to complete their own weekly tasks.

The eventual aim is to make the Science for Mums program transferable, so that other institutions can follow suit. A publication about the program is underway. Meanwhile, a follow-up is planned for 2009, including a repeat of the pilot with a second group of mothers. Grandparents have also been identified as a group that would like such a program.

Sue Stocklmayer is director of the Centre for the Public Awareness of Science at the Australian National University, Canberra, Australia. She was the instigator of the Science for Mums program and was one of the three facilitators.

To learn more about related research, see the following resources.


While composing only 6 percent of the overall sample of the Reach Advisors–ASTC survey, men over the age of 60 demonstrate extremely high degrees of personal interest in and engagement with science museums. (See the personal narrative on page 7.) Additionally, their desire for adult programming is representative of adult learners.

The older men in the sample are highly affluent and very well educated. Compared with the overall sample, they are less likely to visit with minor children. They visit two or more times a year, largely because they are curious about science, but also because they feel that science is presented well and science museums are fun. But ultimately, their interest in science museums is self-motivated, stemming from their own personal interests in science. (Nearly a quarter of them are engineers, an increase of 50 percent from the overall, or topline, sample.)

These affluent older men have philanthropic motivations for supporting and joining the museum. Nearly two-thirds contribute to the museum because they like to support organizations in their community, and just over half do so to help the museum improve. Personal budgetary reasons hardly register. And of all the demographic segments in the survey, men over the age of 60 are the most likely to be members.

Older men are also the happiest audience segment at the museum. Fifty-eight percent say the museum meets their needs, an increase of 50 percent from the topline. Their curiosity levels are significantly higher than the topline, and over half believe that the museum makes them better informed about science, also significantly higher than the topline. But while they are finding content that fulfills them, they still would like to see more for adults. These men also enjoy a wide variety of museums, particularly history-based museums.

Ultimately, older men are an extremely engaged audience and they are making a long-term commitment to museums of all types, including science museums. With their interest and affluence, they are also likely to be an undertapped resource for visitation, volunteering, and development.

Continued from page 4

curious individuals who love to learn and who choose to visit a wide variety of museums in their leisure time.

When we look at the museum visitation patterns of Museum Advocates as they go through life stages, and compare those patterns with those of Core Visitors, we find that they are quite different. Museum Advocates typically grow up going to museums, and when they become parents, they take their children to a wide variety of museums from an early age. They layer on new types of museums as they become age appropriate, but generally do not drop any museums from their lives. This creates a lifelong museum habit that Museum Advocates embrace, and it creates a pattern of visiting, and supporting, a wide variety of museums. Museum Advocates are omnivorous museumgoers.

Core Visitors have a markedly different pattern. They tend to take young children to children’s museums and zoos, but they start this at a later age than Museum Advocates, who often begin bringing their children to museums during infancy. Core Visitors then progress to science centers, while continuing with zoos. But as their children get older, they may only sporadically visit museums, dropping back into casual visitation. The cycle repeats itself, with Core Visitor children repeating it as parents, and parents repeating it as grandparents, cycling in and out of museums without making a sustained commitment.

To find the Museum Advocate moms in our sample, we ran a filter for moms in their 30s and 40s who identify themselves as curious and who feel that adults are well served at the museum. In the Reach Advisors–ASTC study, only 7 percent of moms meet these criteria. While we undoubtedly filtered out a few Museum Advocate moms with this method, this still indicates a very low proportion of Museum Advocates. In contrast, in our study of Connecticut Cultural Consumers, which surveyed mainly visitors to history-based and art museums, nearly half of moms responding were Museum Advocates.

When we examined the data based on type of museum, we found that 11 percent of moms responding to natural history museums in the survey are Museum Advocates. The number falls to 6 percent for moms responding to children’s museums. Moms responding to science centers match the topline results of 7 percent.

Having low percentages of Museum Advocates is not all bad, however. Museums with high densities of Core Visitors tend to be museums that have lower perceived barriers of entry. They have an easier time attracting broader audiences, and a greater opportunity to reach Core Visitors and work to convert them to Museum Advocates. Museums with much higher densities of Museum Advocates, such as art or historic house museums, seem to have a bigger challenge reaching broader audiences, as Core Visitors perceive higher barriers of entry to those museums. But why are Museum Advocates so important to science museums?

Museum Advocate moms are dream visitors

When we examined the responses of our Museum Advocate moms, and compared them with Core Visitor moms, we were astounded at the differences. Just over half of Museum

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2 Art museums, which do see a drop in visitation from even Museum Advocates while their children are toddlers, are the exception. However, Museum Advocates return to art museums when their children are about 6 or 7 years old, while Core Visitors generally wait until their kids are about 9.

3 From other fieldwide studies, we have found that adults who self-identify as “curious” and who feel adults are well served at a museum are overwhelmingly Museum Advocates.
Advocate moms feel the museum that sent them the survey request meets their family’s needs, significantly more than the 35 percent of moms in the overall sample who feel this way. Generally, these moms are more positive than the other moms about the science museum, being twice as likely to believe that the museum presents science well and also about twice as likely to feel there is always something new to see or do at the museum. They are significantly more likely to support their local science museum for philanthropic reasons, implying that they are more likely to be donors as well as members. Also, they are twice as likely to support the museum because they like to support science organizations.

There is even more good news with these engaged moms. When compared with the entire sample of moms, they are three times more likely to believe the museum serves teens and adults well. They are also twice as likely to believe the staff cares and that the museum brings the community together. Museum Advocate moms are twice as likely to feel that the museum makes them better informed and even more likely than the overall average to believe the museum is trustworthy (and the topline is 84 percent).

Dream visitors, indeed.

Museum Advocate moms also enjoy visiting a wider variety of museums than Core Visitor moms. They are much more likely to report enjoying science centers, natural history museums, history-based museums, art museums, botanical gardens and arboretums, and nature centers.

As we examined this data, and compared it with our other research on Museum Advocates, it became clear that this omnivorous consumption of museums is really important. Museum Advocate moms are creating new generations of Museum Advocates, and their engagement and involvement create a more sustainable and continued level of support, not Continued on page 8

Where Everybody Knows Your Name

By Bob Silberman

The recent Reach Advisors–ASTC survey of science museum audiences found that men over 60 are a small but enthusiastic and committed group of museum users. (See the sidebar on page 6.) In this personal narrative, adapted from an interview conducted as part of the Institute of Museum and Library Services–funded Volunteers TryScience (VolTS) project at the New York Hall of Science, Queens, a volunteer tells of his dedication to his local science museum.

I began volunteering at the Sciencenter in Ithaca, New York, eight years ago, after having taught chemistry for almost 40 years in a local university. I originally got involved with the Sciencenter during my last sabbatical, when I had the opportunity to volunteer for a semester as their chemistry resident. I had such an interesting time that I continued on as a volunteer after I retired. Woodworking has been a hobby of mine for quite a number of years, and I’ve had the opportunity to help build over 25 interactive science exhibits. I have also had the chance to use my expertise and lifelong interest in chemistry to develop a number of chemistry-related, interactive floor activities. As part of this work, I mentor a group of local high school students with whom I developed a popular chemistry demonstration show, called Chemsations, which we put on regularly at the Sciencenter.

Ithaca is an academically oriented community that has several excellent colleges and a university. The Sciencenter welcomes and benefits greatly from volunteers who have retired from academia and donate their time. I spend perhaps 20 to 30 hours a week at the center. The staff encourages volunteers and values them, and volunteers usually have the chance to work at something that utilizes their expertise. We’re a small place that has a family-like atmosphere. Everybody knows your name, everybody knows something about you, and everybody knows what you’re interested in doing.

Our science center is committed to making science accessible and fun for visitors, and the people who volunteer there are very much attuned to this. I think that science centers are valuable because they allow people to experience the excitement of science. Science centers are important assets to the communities they serve, and the Ithaca community supports ours very well. I see that many people who enjoy the museum really get involved. They keep coming back. My wife, June, volunteers in the Sciencenter’s early childhood center, where she has gotten to know visitors well who have returned with children or grandchildren again and again.

Volunteering at the Sciencenter has been a very positive experience for me. My wife said, “You didn’t retire; you just changed jobs,” and she’s right. I always liked teaching and I always liked involving people with science. I can do both at the Sciencenter without the activities that I didn’t like as a teacher, such as grading papers and dealing with administrative obligations. So to me, it’s the ideal retirement activity.

Photo courtesy the Sciencenter

Bob Silberman is a retired chemistry professor and volunteer at the Sciencenter, Ithaca, New York.
happen. By working together, narrative-based museums and hands-on museums can build on each other’s strengths, increasing engagement and visitation. We believe working together will not only help raise new generations of Museum Advocates, but also pave the way emotionally engaging Core Visitor moms and converting them into Museum Advocates. Narrative hooks seem to be key to engaging visitors emotionally, and that is the leap we want Core Visitor moms to make. Additionally, it will help science museums reach a larger network of adult audiences that may not now visit. Everyone wins by working together: the museums, the children, and the moms.

Concluding thoughts

Science museums are fantastic places, and the respondents to the survey clearly believe in the work done by science museums. But when we peeled back the data, we found a gap with moms who feel that the science museum is important to their child’s enrichment, but are not as engaged themselves. By working with narrative-based museums to provide stories and emotional hooks to connect with both children and adults, and by layering that content, as well as content that is more appropriate to adults, onto the fantastic hands-on experiences already available, science museums can serve family audiences even better.

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only for science museums, but also for the museum field as a whole.

Creating more Museum Advocates

So how do we create more of these dream visitors? How do we not only grow new generations of Museum Advocates, but also convert Core Visitor moms into Museum Advocate moms?

When we closely examined the data, and compared Core Visitor moms with Museum Advocate moms in a number of our studies, some key differences became clear. Although there are no identifiable demographic differences, there are important behavioral differences. Museum Advocate moms are forthrightly seeking different kinds of experiences than Core Visitor moms, and the key difference, and driver, is narrative.

When we compare the written-in comments of Museum Advocate moms with those of Core Visitor moms, both in this study and in our study of Connecticut Cultural Consumers, we find a much stronger emphasis on narrative in the comments of Museum Advocate moms.

Museum Advocate moms are specifically seeking out narrative experiences to go with hands-on experiences. There is no question that hands-on experiences are desired, and there is no question that they are an important form of learning. But the narrative experience is just as important to these moms, and Museum Advocate moms seek out both. Core Visitor moms, in contrast, focus primarily, and often solely, on the hands-on experiences that they believe engage, educate, and entertain their children.

For this reason, we believe it is incredibly important for museums that excel with hands-on experiences, such as science centers and children’s museums, to further integrate narrative into the museum, and we strongly encourage these museums to work with narrative-based museums, including history museums, historic sites, and art museums, to make this

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This short article only scratches the surface of the results from this study. For more of the results, please check the Reach Advisors blog at http://reachadvisors.typepad.com and click on the category “Science Museum Visitors.”

Susie Wilkening is senior consultant and curator of museum audiences at Reach Advisors, Slingerlands, New York.
Attracting Core Audiences Through a Local Focus

By Lori Geller

Recently, Reach Advisors and ASTC collaborated on an international study of science museum audiences. (See the article beginning on page 3.) Chicago’s Peggy Notebaert Nature Museum stood out as having particularly satisfied visitors. In all, 104 of our visitors responded to the survey. Specifically, the results revealed that, when compared with the topline, or overall, average, the Nature Museum attracts a higher percentage of Museum Advocates, curious visitors who frequent a wide variety of museums. Our visitors are more likely than the topline average to join the museum for altruistic reasons; 54 percent join because they believe the museum is an important part of the community. Our audiences also tend to visit often; 55 percent come to the museum at least four times a year.

The dedicated team at the Peggy Notebaert Nature Museum believes that our strong grounding in science, local focus in Chicago, and commitment to conservation and urban nature education ultimately drive visitors to the museum, getting them excited about and engaged in nature.

A trusted resource

Since they were founded in 1857, the Nature Museum and its parent institution, the Chicago Academy of Sciences, have been committed to the ecology of the Chicago region, specializing in collections, research, and permanent exhibitions on the Midwest and Great Lakes. According to written-in comments on the survey, our association with the Chicago Academy of Sciences and other scientific institutions helps strengthen the view that we are “well respected in [the] scientific community.” Eighty-six percent of respondents say the Nature Museum is trustworthy. One visitor writes that the museum gives “authentic information that reinforces [and] stimulates learning.”

Local focus

The Nature Museum is focused on helping and encouraging individuals to look beyond the beautiful Chicago skyline to see the nature of the landscape. One survey respondent writes that the Nature Museum “is one of the only places where one can go to learn about the natural science of Chicago.”

The museum’s strong local focus is evident in our exhibitions: The interactive RiverWorks exhibition explores animal and plant life in Chicago’s waterways; Hands-on Habitat teaches children about animals that live in the soil beneath their feet; and Wilderness Walk re-creates three Midwest environments (prairie, savanna, and dune).

Conservation and restoration

The museum is committed to demonstrating ways that the general public can help the environment. Visitors are very supportive of the museum’s environmental education efforts; 95 percent of respondents want us to teach about the environment and climate change, and 73 percent think the museum should teach visitors how to change their habits to benefit their community and the world.

One survey respondent writes, “The Nature Museum has been a leader in demonstrating environmentally sustainable technologies, promoting environmental practices, and facilitating discussions on environmental topics.” For example, our Little Green People Show, a weekly podcast hosted and produced by museum staff, focuses on providing sound advice about sustainable living in an urban setting. Several survey respondents also comment on our recycling programs. The Nature Museum is home to the only recycling drop-off center in Chicago’s Lincoln Park.

Visitors also appreciate our restoration programs; one writes that the museum “helps [the] community value endangered species.” For the past year, museum staff have been dedicated to restoring the population of the Blanding’s turtle, Illinois’s most threatened species. Through collecting their eggs, incubating them, and caring for the young Blanding’s before releasing them into protected natural areas several months later, staff members give the turtles a better means of defense out in the wild, and thus, a better survival rate. Butterfly restoration is another area of specialty for the Nature Museum. Museum staff members are seen as experts in the breeding and genetic research of the swamp metalmark butterfly, the local species most at risk of extinction in the near future.

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Visitors by Any Other Name... 

By Laura Farra Myers and Bart A. Roselli

What’s in a name? Well, quite a bit, really! A change in the way visitors are named is one of the many pieces of a new strategy for how experiences are designed at the Rochester Museum & Science Center (RMSC), New York.

The people who enter our museums and science centers to enjoy what we have to offer are variously called visitors, guests, customers, audiences, families, and even the general public. These labels ultimately affect all aspects of the museum experience—influencing everything from exhibit design and building layout to front desk and on-the-floor interactions. Language, definitions, and tools shape our reality. Yet definitions of what to name visitors and the tools to design experiences for them had not been fully developed in RMSC’s work. This initiative was designed to adopt new views and methods to make our offerings more appealing and effective.

Serving Rochester

In 2005, RMSC began a multiyear, Institute of Museum and Library Services–funded project entitled Serving Rochester: Strengthening Lifelong Learning Through a Deeper Understanding of Audiences. This project was designed to change our perception of our audiences—to identify them as “learners.” Consciously choosing this label was the first step toward a better understanding of the different groups of people that visit RMSC. While the project was intended to help us better serve our audiences, it also represented a major conceptual shift for the organization by involving all staff in the effort. At the end of the project, our definition of learners expanded and deepened to include families, who did not necessarily come primarily to learn. With the help of two consultants, Jeanne Vergeront, museum learning specialist, and Vincent Hope, professor of marketing at the University of Rochester’s Simon School of Business, we completed our work in five major steps.

The project’s design

Step 1: Find out what staff perceptions of the audiences are.

The project began with an analysis of what RMSC staff knew and believed about who typical RMSC visitors are and what they want from RMSC. Information-gathering sessions were held with staff, bringing together people with many years at the institution and those with only months of experience. The sessions also included staff members who rarely interact with the visitor and those whose primary responsibilities are visitor learning experiences and satisfaction.

At its core, the project also sought to change our perception of our audiences—to identify them as “learners.” Consciously choosing this label was the first step toward a better understanding of the different groups of people that visit RMSC. While the project was intended to help us better serve our audiences, it also represented a major conceptual shift for the organization by involving all staff in the effort. At the end of the project, our definition of learners expanded and deepened to include families, who did not necessarily come primarily to learn. With the help of two consultants, Jeanne Vergeront, museum learning specialist, and Vincent Hope, professor of marketing at the University of Rochester’s Simon School of Business, we completed our work in five major steps.

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Information from the sessions provided a baseline against which demographic and descriptive data could be compared. These sessions also represented the beginning of an institu-
tional engagement with our learners. As a result of these sessions, staff elected to spend time in the museum’s public spaces in order to interact more with visitors and better understand their varied experiences.

Step 2: Come to a shared understanding of what learning is. In the original project goals, learning was not highlighted as a primary focus of the project. However, as the project evolved, it became clear that in order to understand how to engage audiences in shared learning experiences, we would need to understand what we meant by the terms “learning” and “shared learning.” This was hard work; there was initially little consensus among staff as to what these terms meant. Through an extensive literature review and many staff work sessions, a Learning Framework was created with the help of Vergeront. The framework consolidated and articulated RMSC’s core goals and what it considered its value to its audiences.

Step 3: Find out who our audiences are. In order to gain both broad and deep understanding of the audiences that choose to visit RMSC, we undertook two distinct data collection and analysis efforts. Using visitor postal code data, along with U.S. Census data and other regional marketing databases, we were able to map out attendance patterns and look for demographic variables that could be tied to visitation patterns. We conducted visitor surveys and focus groups, parallel to the demographic analysis, to create a more nuanced view of the visitor. The resulting descriptive data was used to create learner profiles with a particular emphasis on the types of experiences that each audience was expecting on a visit to RMSC.

Step 4: Identify which audiences to focus our limited resources on. The project team began with an open mind, allowing the data to describe as many audience groups as naturally exist. RMSC leadership identified criteria that could be used to prioritize audience groups, including the ability to advance RMSC’s mission, opportunities for new revenue, efficiencies for marketing and service, population size, and new funding opportunities associated with each audience group. Using these criteria, project staff members were able to identify eight different audiences: Adults, Builders, Samplers, Grandparents, Experts, Facilitators, Contributors, and Underserved. We named Builders and Samplers our primary audiences based on their inclinations and preferences for using RMSC.

Step 5: Identify concrete next steps to continue learning about visitors and effective experience design. The project team has determined that to deeply change institutional culture, we need to continue researching Builders and Samplers and building internal awareness about their characteristics, apply this understanding to program and exhibit development, and share our findings with the profession and others. Continued on page 12

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### Characteristics of Builders and Samplers

#### Builders
- Naturally curious
- Adult interprets experiences
- Adult guides child
- Adult challenges child
- Invoke emotional or learning memories
- Focus on together, being in sync
- Use of questions
- Engage in discussion
- Adults and children active
- Focus on shared achievement

#### Samplers
- Apparent interest in group harmony
- Gravitate toward structured experiences
- Adult engages with kids as play partners
- Adult relates to what’s familiar
- Invoke memories of accomplishments
- Focus on getting along together
- Emphasis on having fun together
- Focus on time
- Adult encourages kids to do/see
- Focus on individual accomplishment

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Visitors explore a stream table and climbing wall in the AdventureZone exhibition. Photo courtesy Timothy J. Toul Photography
Project outcomes

The key products to emerge from the project are two detailed profiles describing Builders and Samplers. (See the chart on page 11 for a summary.) These two groups represent the bulk of RMSC’s family audience. We like to say that Builders are curious learners having fun discovering, and Samplers are adventurous players having fun discovering. The parallel language of “having fun discovering” is intentional. We observed that each group uses RMSC in a unique way, yet both ultimately experience the fun of discovery as a result of an RMSC visit.

Although the project still works to more precisely identify Samplers and Builders, we found that by understanding both groups, we could create advertising and experiences that spoke to each group. Builders and Samplers do not dress differently or speak separate languages. They do experience the museum in two very different ways. We are experimenting with ways to reach each group through specific communication messages and vehicles and we know we can serve both groups by designing experiences that offer something for each. For example, a climbing wall (a Sampler-friendly experience) is combined with a graphic and label depicting and explaining the local geologic column (a Builder-friendly experience).

We are continuing to work with marketing consultants to find key characteristics that we can observe and measure in the wider market or through on-site interviews that will identify each group. Various demographic and psychographic data, such as magazine subscriptions, entertainment choices, and even the Myers-Briggs Type Indicator personality test, are being explored as the next steps in making this project’s initial findings even more useful and tangible.

In the final project report, there is, of course, a more exhaustive list of outcomes and products. Yet a very valuable outcome of the project wasn’t one that could be easily recorded or codified. Serving Rochester challenged RMSC staff to get to know visitors, first by spending time with them on the floor and second by coming to understand that visitors are, in fact, learners. The project began a discussion (which is far from over) about how we understand and portray concepts like learner, learning, fun, and experience. The project helped to increase communication between the people who design programs and exhibits and the people who promote those experiences to the public.

Ultimately, the findings from the Serving Rochester project provide a beginning point: a view of RMSC’s audiences and a framework for better serving them.

Laura Farra Myers was project director of Serving Rochester from 2006 to 2007, as director of education at Rochester Museum & Science Center (RMSC), New York. She is now a freelance museum education consultant based in Pittsburgh. Bart A. Roselli oversaw the project proposal to IMLS and was Serving Rochester project director in 2008. He is RMSC’s vice president for collections and special projects.

Continued from page 9

Education

The Nature Museum offers more than 100 unique programs, including workshops, tours, and training for teachers and their students. In 2007, over 65,000 students participated in award-winning educational programs; 45,000 of these students visited the museum with their teachers on field trips.

One teacher who responded to the survey writes, “I give my highest recommendation to colleagues about [the museum’s] professional development and programs for students. The highest regard is consistently demonstrated for teachers of all types. I have personally been enriched through my experiences there.”

Looking ahead

The Peggy Notebaert Nature Museum, through programs, exhibitions, and conservation and education efforts, is dedicated to making a distinctive contribution to the city of Chicago.

One respondent writes, “The Notebaert Nature Museum is a smaller institution in a big city, but it has had a profound effect on the course of science education and public awareness in this world-class city. It is a treasure of a museum.”

As our president and CEO, Laurene von Klan, says, “The Peggy Notebaert Nature Museum is proud to serve as a vehicle for teaching citizens to make the best use of resources and foster a bond with the natural world.”

Lori Geller is marketing and public relations associate at the Peggy Notebaert Nature Museum in Chicago.
If you’re pondering new audiences for science centers, there’s nothing like watching a guy with a green face and a black cape dancing next to a ferrofluid piano exhibit to expand your thinking.

On YouTube (www.youtube.com), the man in the cape is a video blogger from Pennsylvania who hosts something called The Mo Show. But at the opening night party for the 888TorontoMeetup (888) at the Ontario Science Centre (OSC), Toronto, he became the physical embodiment (and quite an embodiment it was) of a virtual community.

Some 460 YouTubers—from as far away as Argentina, Australia, and the United Kingdom, and as nearby as the couple from two blocks over who’d never visited the OSC before—attended on August 8, 2008, what we believe is the first-ever YouTubers meetup organized by and held at a science museum. (Check out the links on page 14.)

When the OSC began posting videos on YouTube in October 2006, our idea was to explore opportunities for engaging people with science in an emerging online space where millions were creating, sharing, and responding to each other’s work. So far, we’ve amassed more than 5 million views of OSC-produced videos on 19 different video-sharing sites.

But we’ve had nagging questions: How could this online activity drive physical visits and deeper engagements at, and with, our science center? How could we become a catalyst and partner in the rapidly evolving social media activities of our publics?

YouTube itself suggested an answer in the spontaneous emergence of user gatherings in 2007. Meetups held in cities from San Francisco to New York to Atlanta to Chicago inspired audiovisual designer Kathy Nicholaichuk—who as “videochick770” is the YouTube persona of the OSC—to create a meetup promotional channel around which a community quickly coalesced. The group used Web 2.0 tools such as Facebook, Twitter, and Flickr to communicate about 888. A Stickam feed streamed live video, enabling others from around the world who couldn’t attend to talk to the YouTubers on our floor.

Yet despite all that shared community effort, hosting 888 wasn’t simple or cheap. We calculated the cost to pull it all together—including staff time in the months before the event working with the YouTube community—at more than $43,000 CAD (about U.S.$33,535 at the time of publication), or about $95 CAD (U.S.$74) per attendee. So we’ve been asking ourselves a few questions.

Who came and what did they do?

Half the 132 attendees we surveyed were under 19, and most were local. More than a third had never visited the OSC, and about two-thirds came with friends or family. We estimate at least 1,000 videos were produced around the event, which featured performances by famous and not-so-famous YouTubers, along with a free run of our exhibit floor for those who...
preregistered.

We analyzed 100 videos in detail: 70 were “social,” featuring purely personal interactions and reflections of participants, and 29 were “marketing/promotional,” prominently featuring the OSC and its offerings. One video—a nine-minute meditation on culture, community, and technology—fit a remaining category we called “science communication.”

Clearly, meetup participants were first and foremost interested in each other. The OSC was the context, not the star. Videos that showcased the meetup-as-party/science-center-as-party-place positioned us as a cool place for young adults to hang out, and that’s an audience we’d like to grow. How does that image fit with a core audience of families with kids? Savvy online visitors may be able to distinguish between the different contexts of different audiences, but that’s still a question any science center considering holding a meetup should ask—and given YouTube’s ubiquitous reach, a meetup could be considered no matter where you are.

**What’s the impact?**

We estimate print, radio, and TV coverage of the 888 event reached a potential audience of over 2 million. And the 100 videos we analyzed had drawn more than 880,000 views and 13,800 comments within a few weeks of 888. Feedback from participants themselves was overwhelmingly positive—a few said it changed their lives forever. (See comments within a few weeks of 888.)

Feedback from participants themselves was overwhelmingly positive—a few said it changed their lives forever. (See comments within a few weeks of 888.)

We want to engage this group—being a meeting place is a start.

**What’s next?**

Local YouTubeers are one online community that offers a physical fit for science centers, but they’re by no means the only one. Who are your local alpha bloggers? What online hobby groups fit your exhibit offerings? Does your town have a critical mass of artists or photographers who’d find it intriguing to blur the lines between art, technology, and science at an informal meetup event—with an associated wiki and Flickr group?

Museum consultant Nina Simon, who followed the development of 888 online, nails this concept in a recent blog post titled “New Models for Community Partnerships: Museums Hosting Meetups” (www.museumtwo.blogspot.com). In the spirit of valuing the virtual, she’ll have the last word:

> People who engage deeply in any online community, whether a bulletin board or social networking site, want to meet in person. Right now, they are primarily meeting in commercial spaces—restaurants and bars—which benefit from their business and their buzz. If museums get involved in these online-offline partnerships, we can bring new audiences through our doors, familiarize them with museum-going in a comfortable way, and reap the benefits of their online musings about their real-life experiences.”

Kevin von Appen is associate director of daily experience operations at the Ontario Science Centre, Toronto, Canada.

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**For more on the 888TorontoMeetUp:**

http://ca.youtube.com/888torontomeetup
http://ca.youtube.com/user/888archive

**Want to get your science center involved with a global, networked YouTube meetup in 2009?**

http://ca.youtube.com/user/999globalevent

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**Calendar**

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**FEBRUARY**

15–21 National Engineers Week (U.S.) “Engineers Make a World of Difference.” Details: www.eweek.org

**APRIL**


**JUNE**


**OCTOBER**

31–Nov. 3 ASTC Annual Conference. Hosted by Fort Worth Museum of Science and History, Texas. Details: www.astc.org/conference
The Philadelphia Story

From October 18 to 21, science center professionals gathered in the City of Brotherly Love (and the Cheesesteak) for the 2008 ASTC Annual Conference. With the Phillies headed to the World Series, Philadelphia was in a celebratory mood, and conference attendees enthusiastically partook of all the city had to offer. They walked in the footsteps of scientist and statesman Benjamin Franklin, visited Philly’s world-class museums, hopped and bopped at the Franklin Institute’s Bandstand Party, and indulged in local treats like soft pretzels and shoofly pie at the historic Reading Terminal Market.

The conference welcomed more than 1,800 attendees from 31 countries, making it ASTC’s second highest-attended meeting ever. The largest non-U.S. delegations came from Canada (79), the United Kingdom (28), and Mexico (13). In the exhibit hall, a total of 202 booths represented 157 exhibiting companies. More than 140 conference sessions challenged participants to explore their responsibility to their scientific and public constituencies, reflecting the theme, “In the Public Eye: Science Centers at the Crossroads of Science and Culture.” (Audio recordings of most sessions can be purchased on CD from Convention Recordings International. Visit www.conventionrecordings.com and click on “Conferences.” A complete set costs $149.)

Our thanks to president and CEO Dennis Wint and his staff at our host museum, the Franklin Institute, for their hard work and warm welcome.

A new direction

At the Saturday business meeting, ASTC’s president, Lesley Lewis (Ontario Science Centre, Toronto), outlined ASTC’s new strategic direction. ASTC’s Board is committed to positioning science centers as “forces for good,” addressing relevant global and local issues. Lewis described ASTC’s four central priorities: science and society leadership, alliances and partnerships, impact and communications, and professional development. She stressed that the new strategic direction is not a move away from teaching basic science, but is an effort to ensure that science centers are valued and regarded as essential by the public.

In an open forum Monday, the Board presented more details of the strategic direction, and attendees asked questions and gave input. Members will be invited to participate in online discussions over the coming months as the organization charts its course.

Officers and directors installed

Lewis also announced the results of ASTC’s 2009 election. All officers were re-elected to another one-year term: Lewis, president; Bryce Seidl (Pacific Science Center, Seattle), vice president; Nancy Stueber (Oregon Museum of Science and Industry, Portland), secretary-treasurer; and Tuan Chiong Chew (Science Centre Singapore), member-at-large. Graham Durant (Questacon, Canberra, Australia), Erik Jacquemyn (Technopolis, Mechelen, Belgium), and Charlie Trautmann (Sciencenter, Ithaca, New York) were re-elected for three-year terms and Chevy Humphrey (Arizona Science Center, Phoenix) was re-elected for a two-year term. Dennis Bartels (Exploratorium, San Francisco) was elected to the Board for the first time. Many thanks to Mary Sellers (South Florida Science Museum, West Palm Beach) for her service on the Board.

Wint named ASTC Fellow

Dennis Wint became the 2008 recipient of ASTC’s highest honor, the ASTC Fellow Award for Outstanding Contribution. Wint has served as president and CEO of the Franklin since 1995. His more than 35 years of service to the museum community include tenures as president of the Saint Louis Science Center, Missouri; director of the Cranbrook Institute of Science, Bloomfield Hills, Michigan; and vice president of Philadelphia’s Academy of Natural
Scientists. He is an active member of ASTC and has served the organization in a variety of capacities, including as co-chair of the Governance Committee, co-chair of the International Advisory Board, and president.

“ASTC is a far better, far stronger organization because of Dennis’s leadership and involvement,” said ASTC executive director Bonnie VanDorn. “I think of him as this organization’s ‘compass.’ If we start to lose our way, we can always turn to Dennis to get us pointed in the right direction again.”

Speakers spark conversation, contemplation

Journalist and cultural critic Steven Berlin Johnson gave the keynote address on Saturday morning, drawing upon the story of London’s 1854 cholera outbreak, as told in his book, The Ghost Map. Johnson encouraged science centers to fill a role as places where new ideas can grow. “The history of ideas is filled with hunches that had leisure time to develop,” he said.

At Sunday morning’s plenary session, “Global Sustainability: Where Do Science Centers Fit In?” Joe Palca of National Public Radio moderated an animated discussion with panelists Anthony Leiserson of the Yale Project on Climate Change, children’s author and illustrator Lynne Cherry, and Philip C. Myrick of the Project for Public Spaces. After the session, participants met with the panelists in small groups to discuss how science centers can catalyze public understanding and local action on climate change.

IGLO in Philly

Participants from five continents took part in a day-long workshop, “Measuring Our Carbon Footprint and Fingerprints on Climate Change,” hosted by the Academy of Natural Sciences, Philadelphia. ASTC’s International Action on Global Warming (IGLO) initiative invited representatives from research and nonprofit institutions, including the National Oceanic and Atmospheric Administration, the Goddard Space Flight Center, and Appalachian Voices. Speakers presented their latest findings in climate change research and efforts in public education and discussed how science centers might engage the public on this issue.

Also at the conference, IGLO formally unveiled a new National Science Foundation–funded project, Communicating Climate Change (C3). (See page 17.)

Six ‘Edgies’ awarded

Four ASTC-member organizations and two science center professionals were honored with Roy L. Shafer Leading Edge Awards. Now in their fourth year, the “Edgies” recognize both small and large ASTC members and their employees for extraordinary accomplishments in Visitor Experience, Business Practice, and Leadership in the Field. The awards, presented annually at the conference banquet, commemorate the late Roy L. Shafer, a former science center director and ASTC president. Recipients receive an etched glass award and a paid registration to the following year’s ASTC Annual Conference.

Jury chair Alan Nursall, principal, NEXT Exhibits + Creative Communication, Sudbury, Ontario, Canada, presented the Leading Edge Award for Business Practice (Large Institution) to the Saint Louis Science Center, Missouri, for its Strategy Playbook for the Body Worlds 3 exhibition. In addition to implementing a plan to provide excellent customer service for the crowds drawn by the exhibition, the Science Center also reduced staffing expenses, raised morale, and created a sense of common purpose among staff. The institution’s “Visitor Satisfaction Score” increased during the exhibition’s five-month run, which was experienced by more than 330,000 visitors.

The Leading Edge Award for Visitor Experience (Small Institution) was announced by jury member Emily Fox, CEO at the Discovery Center of Springfield, Missouri. The National Canal Museum, Easton, Pennsylvania, was honored for its permanent exhibition, The Science and Technology of Canals and Inland Waterways. Since opening in 2006, the exhibition has been enjoyed by over 456,000 visitors and has transformed the National Canal Museum from a didactic, artifacts-based history museum for canal buffs into an interactive science and history center for visitors of all ages.

The Leading Edge Awards Jury chose to bestow two Leading Edge Awards for Visitor Experience (Large Institution) this year. Jury member Sarah Wolf, executive director of Discovery Center Museum, Rockford, Illinois, presented the awards. The first “Edgie” went to the Ontario Science Centre, Toronto, for putting its Agents of Change initiative into practice with the Weston Family Innovation Centre, transforming not only the center’s physical space, but also its approach to visitor engagement. The new experiences encourage the attitudes, skills, and behaviors needed to address 21st-century challenges.

The second Leading Edge Award in this category was presented to the Virginia Living Museum, Newport News, for Survivor: Jamestown. This immersive maze exhibition is set in 1607 Tidewater Virginia, where basic game theory, history, and the complexities of life-and-death decisions are joined to create a role-playing experience.

Jury member Dennis Schatz, vice president of education at the Pacific Science Center, Seattle, presented the Leading Edge Awards for Leadership in the Field. The recipient for New Leadership in the Field was Cynthia Graville-Smith, education technology and development manager at the Saint Louis Science Center. Smith designed, built, and managed the online community for the center’s Youth Exploring Science (YES) program and used Web 2.0 technologies to showcase the work of YES teens.

Ingit Mukhopadhyay, director general of India’s National Council of Science Museums, was this year’s Experienced Leadership in the Field recipient. Mukhopadhyay has addressed the critical professional development needs in developing countries where the demand for science centers is increasing while the availability of leaders to create and operate them has not kept...
pace. He partnered with institutions and universities worldwide to expose graduate students to some of the best pedagogical and professional practices in the science center field.

ASTC extends its congratulations to all of the 2008 winners and sincere thanks to this year’s Leading Edge Awards jury, which, in addition to Nurrall, Fox, Wolf, and Schatz, included Julie Johnson, Science Museum of Minnesota, St. Paul; Moshe Rishpon, Clore Garden of Science, Rehovot, Israel; Jodi Schoemer, Denver Museum of Nature & Science, Colorado; Silvia Singer, MIDE, Museo Interactivo de Economía, Mexico City; and Jane Werner, Children’s Museum of Pittsburgh, Pennsylvania. ASTC also thanks the Denver Museum of Nature & Science for hosting the jury deliberation.

Guidelines and nomination forms for the 2009 “Edgies” are available online (www.astc.org/about/awards/leading_edge.htm). The application deadline is March 18. For more information, contact ASTC membership director Diane Frendak, 202/783-7200 x112, dfrendak@astc.org.

ExhibitFiles Awards
ASTC recognized the contributions of two ExhibitFiles (www.ExhibitFiles.org) power-users during a gathering at the conference. Paul Orselli, principal of Paul Orselli Workshop (POW!), was among the exhibit developers who guided early planning of the site. Gretchen Jennings was also among the early advisors and has spread the word about the site through presentations around the world. To them, and to all of our more than 980 members, thank you for so generously contributing to our common fund of knowledge and experience.

And now a word for our sponsors
As always, we extend our heartfelt thanks to the sponsors who made the conference possible:

- Silver Partners Aramark, and Evans and Sutherland and Spitz, Inc.
- Emerald Partners Community Counselling Service Co. and Superior Exhibits & Design Inc.
- Turquoise Sponsors Arts and Exhibitions International, Berry & Homer, Rohm and Haas, Sky-Skan, Universal Services Associates, and XpanD USA

Our sincere appreciation is due to these and our many other sponsors. Their generous contributions totaled $203,240, including $40,900 raised by the Franklin Institute.

Deep in the heart of Texas
Join us October 31–November 3 in Fort Worth, Texas, for the 2009 ASTC Annual Conference, “The Art of Science: Creating a Better Future/El Arte de la Ciencia: Hacia un Futuro Mejor.” Hosted by the Fort Worth Museum of Science and History, the conference will explore how the blending of art and science can engage people of all cultures, and will also address how science centers can become essential partners in addressing key societal issues. We look forward to seeing you there.

Communicating Climate Change
ASTC’s new Communicating Climate Change (C3) project, funded by a $2,998,312 grant from the National Science Foundation, fosters innovative partnerships between research centers, the media, and science centers, and showcases science centers’ central role in educating the general public about global climate change. The project is part of ASTC’s ongoing IGLO initiative.

Twelve U.S. science centers have signed up for the project, which pairs each center with a local research institute. Together, the science centers and research institutes have chosen local indicators of climate change—such as failing health of pine forests in Arizona or deterioration of coral reefs in Hawaii. With additional input from START/American Geophysical Union, the National Oceanic and Atmospheric Administration, and the University Corporation for Atmospheric Research, the science centers are conducting public education on their chosen indicators and the broader implications related to global climate change.

C3 will offer additional services to the broader ASTC community, including a series of videos on climate change science, a web-based interactive climate change map, and new hands-on learning activities for the IGLO Toolkit.

Noyce Leadership Institute Awarded IMLS Grant
The Institute of Museum and Library Services (IMLS) awarded a $199,426 National Leadership Grant to ASTC to support the Noyce Leadership Institute (NLI), a project undertaken in partnership with, and with lead support from, the Noyce Foundation. This is IMLS’s second grant to NLI. The David and Lucile Packard Foundation and the Gordon and Betty Moore Foundation have also awarded grants to the project.

The grant will provide funds for a second cohort of new science center and children’s museum CEOs to participate in a year-long leadership program. NLI will also launch a new program for senior managers and individuals who aspire to leadership roles. The grant will fund research and evaluation of these programs and their collective impact on the field. ■
A guide prepares to take children inside a re-created volcano at El Museo de los Niños de Caracas, Venezuela. Photo courtesy El Museo de los Niños de Caracas

PLAYING WITH FIRE—On August 14, 2008, El Museo de los Niños de Caracas, Venezuela, opened a new permanent exhibition, Terremotos y Volcanes, Fenómenos Naturales (Earthquakes and Volcanoes, Natural Phenomena). In the exhibition, children can walk inside a re-created volcano, where they can feel tremors, witness rising magma, and hear the sound of explosions.

At 160 square feet, the exhibition is large enough to hold a group of 10 people at a time. Before children enter the volcano, a guide explains to them what volcanoes are and how they form, the different types of eruptions, and the relationship between volcanoes and earthquakes. Visitors then spend about 10 minutes inside the exhibition, experiencing a virtual eruption.

From the outside, the exhibition resembles a mountain with different types of lava cascading down its exterior. Redder, “hotter” lava appears at the top and middle of the volcano, while denser, darker lava is shown on the bottom. While they are waiting to enter, visitors can watch the volcano “erupt.”

The firm Total Venezuela contributed funds to build the exhibition.

Details: José Ángel Andrade, administration, ja.andrade@maravillosarealidad.com

A MUSEUM GROWS IN BROOKLYN—What’s bright yellow and green all over? The expanded Brooklyn Children’s Museum in New York, which opened September 20 with a new, yellow facade and many environmental features. Designed by architect Rafael Viñoly, the expanded building incorporates the mostly subterranean former facility, doubling the museum’s total space from 51,000 to 102,000 square feet. The museum now includes 17,500 square feet of new exhibition space and also adds new classrooms, workshops, and a children’s library.

The expanded Totally Tots exhibition allows children 5 and under to splash in Water Wonders, draw or sculpt in the Art Studio, and play musical instruments in Sound Around. Those 18 months and under can explore a colorful, padded area called the Baby Hub.

Neighborhood Nature, which re-creates Brooklyn’s natural habitats, including a pond, beach, and community garden, aims to inspire children to explore nature in their own backyards. Kids are encouraged to role-play citizen scientists, collecting beetles or calculating the ages of trees.

World Brooklyn presents a street with child-sized shops based on real Brooklyn businesses, introducing children to the cultural diversity of the borough. Children can join a Chinese New Year celebration, bake pretend pizza or Mexican bread, stock their shopping carts at an international grocery store, and learn the steps to traditional dances from around the world.

In Collections Central, children have access to a changing selection of the museum’s 30,000 specimens and artifacts. Role-playing areas allow children to sail a boat down the Amazon or design their own exhibit.

Among the building’s green features are a geothermal heating and cooling system, photovoltaic solar cells, and waterless urinals. The museum expects to save about $100,000 in energy costs each year and has applied for Leadership in Energy and Environmental Design (LEED) certification.

The City of New York contributed $48 million for the expansion and renovation, and New York State gave another $1 million. Private sources and competitive government grants provided $19.5 million for exhibitions, programs, and the endowment. An additional $11.5 million has been raised for the master plan’s future phases.

Details: Anne-Rhea Smith, public relations manager, asmith@brooklynkids.org, 718/735-4400 x321

THE OCEAN BLUE—“The ocean is a global system essential to all life—including yours.” This is the central message of the Sant Ocean Hall at the Smithsonian’s National Museum of Natural History, Washington, D.C. Museum staff worked with colleagues from the National Oceanic and Atmospheric Administration (NOAA) to create the 23,000-square-foot exhibition, which opened September 27.

The exhibition displays 674 of the museum’s 80 million marine specimens. Live collections are showcased in an Indo-Pacific coral reef aquarium, featuring 74 species. On loan are two preserved giant squids, as well as adult and juvenile specimens of a “living fossil,” the coelacanth.

A 45-foot model of an actual, living North Atlantic right whale—a 21-year-old female named Phoenix—is the centerpiece of the hall. A section on biodiversity presents a vast variety of species, from the yellow-bellied sea-snake to the regal thorny oyster. Open Ocean shows the adaptations of creatures from the ocean’s surface, the midwater zone, and the deep ocean. In Journey through Time, a series of fossils illustrates the evolution of life in the ocean. Shores to Shallows explores the areas of the ocean where humans have the greatest impact, while The Poles teaches visitors how living things adapt to the extreme conditions of the Arctic.
Grants & Awards

The Franklin Institute, Philadelphia, was honored at a White House ceremony as a 2008 National Medal for Museum and Library Service recipient. The award is given annually by the Institute of Museum and Library Services (IMLS), in coordination with the White House, to 10 museums and libraries.

On September 10, IMLS awarded 44 National Leadership Grants, totaling $18.2 million. (All awards require matching funds.) The following ASTC members were among the recipients:

- **Boston Children’s Museum**, Massachusetts: $840,713 to develop an exhibition to help adults prepare their children for kindergarten.
- **COSI**, Columbus, Ohio: $485,395 to partner with Ohio State University to bring research activities into the museum.
- **ECHO Lake Aquarium and Science Center**, Burlington, Vermont: $352,173 to create an online network of residents living near Lake Champlain, to improve the lake’s health.
- **Lawrence Hall of Science**, Berkeley, California: $499,455 to work with libraries on Check Out Science!, a family reading program to promote positive attitudes toward science.

On October 30, the National Institutes of Health (NIH) awarded close to $17 million in Science Education Partnership Awards (SEPA) to 16 institutions, including the following ASTC members:

- **American Museum of Natural History**, New York City: $1.09 million to create new productions for the museum’s Human Bulletins news program, as well as a mini-course on health research and a drop-in science club (five-year award).
- **Denver Museum of Nature & Science**, Colorado: $655,000 to establish a community-based research laboratory where families participate in a research project on the genetics of taste (three-year award).
- **New York Hall of Science**, Queens: $1.35 million to create a traveling exhibition that takes an evolutionary perspective on health issues (five-year award).

THE HILLS ARE ALIVE—Three years after breaking ground, the California Academy of Sciences, San Francisco, opened its new green building on September 27. The Academy formerly existed in 12 separate structures, but its new building brings all of those components under one roof. In fact, the roof is the building’s most prominent feature. With 1.7 million native plants, the hilly, 2.5-acre “living roof” blends in with the museum’s surroundings in Golden Gate Park.

Architect Renzo Piano’s design includes many other green features, such as 80 skylights that provide natural light and ventilation, and photovoltaic cells that generate 5 to 10 percent of the 410,000-square-foot building’s energy. The new Academy has received LEED Platinum certification.

Inside, the Academy’s Steinhart Aquarium is home to 38,000 animals representing 900 different species. The Philippine Coral Reef houses more than 2,000 reef fish in a 210,000-gallon tank. Water Planet is a flexible exhibition where different species of fish, reptiles, amphibians, and invertebrates are rotated in and out. Visitors can tread a walkway along the surface of the Northern California Coast tank, peering down at sea stars, eels, and anemones beneath their feet. In the four-story Rainforests of the World exhibition, encased in a glass dome, visitors can climb to the top of the canopy for a bird’s- or butterfly’s-eye view, descend through the trees in a glass elevator, and then walk inside a clear tunnel through the flooded Amazon basin.

In the Kimball Natural History Museum, iconic exhibits like an 87-foot-long blue whale skeleton coexist with new displays. In African Hall, five new dioramas featuring live animals (including a colony of African penguins) join 16 updated dioramas with mounted specimens. The new Islands of Evolution exhibition features collections from Madagascar and the Galápagos. Altered State: Climate Change in California teaches visitors about the local and global effects of climate change. Visitors can also look through windows to watch scientists at work in a Research Lab.

The Academy’s 100,000-square-foot public area also includes the digital Morrison Planetarium and a resource center. Private gifts and local, state, and federal funding have provided $465 million toward the construction of the $488 million building. The remainder will be raised through contributions from individuals, corporations, and foundations.

Details: Stephanie Stone, director of communications, sstone@calacademy.org

A model of Phoenix, a North Atlantic right whale, is the centerpiece of the National Museum of Natural History’s new Sant Ocean Hall.

Photo by Chip Clark Smithsonian Institution

and Antarctic. In Ocean in the News, kiosks provide daily updates on weather patterns, tide levels, and discoveries. The hall also explores the relationships between indigenous people and the ocean. A 26-foot Tlingit canoe from Alaska was commissioned for the hall.

Throughout the hall, a cartoon drawing of Phoenix addresses children, often with a sense of humor. In an exhibit of crinoid fossils, the whale instructs, “Try to find one thing they all have in common (besides the fact that they’re all dead).”

Funds for the $49 million hall included $22 million from NOAA, $15 million from Victoria and Roger Sant and family, and additional donations from the 3M Company, Ocean Conservancy, Guenther and Siewchin Yong Sommer, Sony Electronics Inc., JAM- STEC, and an anonymous donor.

Details: Kelly Carnes, public affairs specialist, carnesk@si.edu

Out of the 44 awards, ASTC members were among the recipients:

- **Boston Children’s Museum**, Massachusetts: $840,713 to develop an exhibition to help adults prepare their children for kindergarten.
- **COSI**, Columbus, Ohio: $485,395 to partner with Ohio State University to bring research activities into the museum.
- **ECHO Lake Aquarium and Science Center**, Burlington, Vermont: $352,173 to create an online network of residents living near Lake Champlain, to improve the lake’s health.
- **Lawrence Hall of Science**, Berkeley, California: $499,455 to work with libraries on Check Out Science!, a family reading program to promote positive attitudes toward science.
- **Oregon Museum of Science and Industry**, Portland: $249,876 to partner with libraries to develop science literacy programs for adults.

On October 30, the National Institutes of Health (NIH) awarded close to $17 million in Science Education Partnership Awards (SEPA) to 16 institutions, including the following ASTC members:

- **American Museum of Natural History**, New York City: $1.09 million to create new productions for the museum’s Human Bulletins news program, as well as a mini-course on health research and a drop-in science club (five-year award).
- **Denver Museum of Nature & Science**, Colorado: $655,000 to establish a community-based research laboratory where families participate in a research project on the genetics of taste (three-year award).
- **New York Hall of Science**, Queens: $1.35 million to create a traveling exhibition that takes an evolutionary perspective on health issues (five-year award).
**Margaret Honey** is the new president and CEO of the New York Hall of Science, Queens. She replaces **Marilyn Hoyt**, who retired last year after 23 years at the Hall. Honey previously served as vice president of the Education Development Center (EDC) and director of EDC’s Center for Children and Technology.

**Paul Ricchiuti** was chosen as vice president of information technology services for the Franklin Institute, Philadelphia. He was formerly chief information officer for the Penn-Delco School District in southeastern Pennsylvania.

COSI, Columbus, Ohio, named three vice presidents. **Jen Snively**, who had formerly served as senior director for community and outreach programs, was promoted to vice president of programs. **Steve Langsdorf**, previously senior director of experience programs, became vice president of experience. Former vice president for learning and research partnerships **Kimberlee Kiehl** was promoted to senior vice president and chief strategy officer.

The Academy of Natural Sciences, Philadelphia, recently appointed three administrators. **Ted Daeschler** is the Academy’s new vice president for the Center for Systematic Biology and the Ewell Sale Stewart Library. He began working at the Academy in 1987 and most recently served as associate curator and chair of vertebrate zoology. In addition, **Danianne Mizzy** has taken the post of director of the Ewell Sale Stewart Library. Most recently, she worked as assistant head of the University of Pennsylvania’s Engineering Library in Philadelphia. The Academy also chose **Tatyana Livshultz**, formerly assistant professor of biology at the University of Nebraska, Omaha, as its new botany curator.

**Walter Kitundu**, multimedia artist at the Exploratorium, San Francisco, since 2003, was named one of 25 MacArthur Fellows for 2008. Kitundu will receive a $500,000 grant over the next five years from the John D. and Catherine T. MacArthur Foundation.

On September 17, ASTC welcomed **Ellen Alderton** as project manager for its Communicating Climate Change (C3) project. (For details on the project, see page 17.) Before joining ASTC, Alderton developed curriculum and multimedia projects in Santa Cruz, Bolivia. She has also overseen informal science education campaigns at Acceso Hispano/Self Reliance Foundation, Washington, D.C.