



ASSOCIATION OF CHILDREN'S MUSEUMS

Great exhibits stay with you. In the fall 2012 issue of *Hand to Hand*, we presented stories about memorable exhibit experiences

The Future of Exhibits: Where Are We Headed?

PART TWO OF A TWO-PART ISSUE

from nineteen exhibit designers, museum directors, teachers, and writers. From design theories, visual subtleties and practical mechanics to unusual topics, quirky details, and welcomed messes, we learned how some exhibits hit home and remained inspiring for years to come.

As we move to the conclusion of the Association of Children's Museum's Reimagining Children's Museums initiative, in this second issue of a two-part exploration on the topic of exhibits, we shift our focus to the future.

What are people thinking about now when they plan new exhibits to achieve maximum impact for museums? How is the exhibit environment changing? What are today's audiences like, what do they find compelling, and how are children's museums responding? Great exhibits result from many decisions, large and small. The exhibit subtleties we explored in part one profoundly affected the visitor experience. What small subtleties—or big ideas—are affecting the next generation of great exhibits? What is in that next generation, and who's producing them?

—Mary Maher, editor

Exhibits: Which Way to Go?

Alissa Rupp, The Portico Group



Dorothy: Now which way do we go?

Scarecrow: Pardon me, this way is a very nice way.

Dorothy: Who said that?...Scarecrows don't talk.

Scarecrow: [points other way] It's pleasant down that way, too.

Dorothy: That's funny. Wasn't he pointing the other way?

Scarecrow: [points both ways] Of course, some people do go both ways.

—*The Wizard of Oz*, 1939

In our recent work, and in our travels, we have seen children's museums lean toward one of two design approaches to define their visitor experience. This is a simplified dichotomy for the purpose of this discussion, but let's call these approaches "artful use of available space" on the one hand, and "themed immersive environments" on the other. The first is emerging in tandem with STEM (Science, Technology, Engineering and Math) and Maker/Tinker trends, and tends to rely on local artists, fun and quirky design elements, eclectic use of materials, and plenty of open, flexible space. The second is based on rich regional themes, imaginative and imitative play, and an immersive environment. Neither approach is inherently better; both can result in an exhibit gallery that is clearly great for learning through play, fun to look at, and strongly rooted in its location. We do wonder, however, whether the field is trending one way or the other, and why.

While strongly themed spaces can give a clear sense of place, we have seen larger, established children's museums move away from richly themed environments and toward a "maker" or "tinker" aesthetic. Chil-

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ASSOCIATION OF CHILDREN'S MUSEUMS

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*The Driftwood Fort Construction Area,
part of the new Outdoor Discovery Center
at Hands On Children's Museum,
Olympia, Washington.*



The Portico Group

What is next in exhibit and program design? As children's museums continue to evolve, grow, and respond to the interests and needs of their visiting families, how will exhibit designs respond to ideas coming around the next corners? There are a few trends that we see emerging, which may in turn have impacts on exhibits, program, and design. Some could be considered to be in the wings, though it remains to be seen whether they come forward subtly, or with lasting effects on the look and feel of the exhibit gallery.

dren's Museum of Pittsburgh and the Children's Museum of Phoenix are wonderful examples. These museums contain spaces that rely on visitors' sense of curiosity and creativity, as well as the dedication of a very strong staff, to work well. This seems to be happening just as other museums strive to make their spaces more immersive and more highly themed, using geographical and cultural contexts to provide the settings and backdrops for play and learning. In some cases this may be seen as a safe way to bring a museum to a community for the first time, as more people become aware of children's museums around the country and associate their development with a more traditional "mini city" approach. In others, as with Hands On Children's Museum in Olympia, Washington, rich theming ties the museum even more strongly to its region, giving funders and visitors the sense that this museum is truly theirs, and could not be located anywhere else but in the South Puget Sound region of Washington state. Visitors recognize their region and themselves in the exhibits.

As children's museums continue to assert themselves in the cultural and educational landscape of the country, the two design approaches may become less distinctly identified with specific museums. Why? First, the background and inclinations of the staff are important, as they need to maintain and

grow the museum toward its own future successes. The field is welcoming a generation of directors, educators, and designers who have a broad, holistic understanding of what children's museums can do and how they can learn from other cultural venues; these new contributors bring an artistic, innovative approach to the development of their museums. Second, many children's museums can now take more aesthetic risks with their spaces and their programs—there is a wide base of research and study to support their missions and programs, and so they (and their supporters) can be confident that they are delivering on those even as they do it via a wider variety of spaces. Third, there may be assumptions (or knowledge) of what visitors and funders are expecting from the museum, or staff may be influenced by the tone set by other organizations in the region. A more traditional approach may be seen in a region where a children's museum is a new idea, or where there is not a wide variety of other cultural facilities. As the diversity of options grows, however, a children's museum need not choose one approach or the other. In Chapel Hill, North Carolina, the thriving arts community, strong support of the nearby university, and diverse museum backgrounds of the staff allow Kidzu Children's Museum to take an artful approach that strongly reflects a creative and contem-

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Following the lead of Reimagining Children's Museums (RCM), a project to explore the possibilities for children's museums while considering the many different needs of the communities they serve, the Association of Children's Museums (ACM) has been on the lookout for innovative trends that will help prepare for the future of exhibits. For this article, we asked member museums from around the world to share their insights on exhibits, and discovered three main themes expected to take precedence in the 21st century: 1) visitor centricity and customization, 2) utilizing local resources, and 3) helping adults learn.

Visitor Centricity and Exhibit Customization

Exhibits in 21st century children's museums have morphed into experiences. In order to make these experiences more personal and lasting, museums are looking to tailor exhibits for their visitors' specific needs and desires. Increased visitor centricity emphasizes the importance of knowing visitors and



What We See Happening: Children's Museums Share Insights on Exhibits

Elizabeth Stein
Association of Children's Museums

their expectations, and looking for ways to relate to and reach them more effectively. One of these ways is exhibit customization, as suggested by Keith Ostfeld, director of educational technology and exhibit development at the Children's Museum of Houston, TX. Customizations can include the different ways in which visitors may view information and in what quantities. For example, it can allow a visitor to spend more time on an exhibit and dig deeper for more information if desired. Ostfeld suggests that by customizing experiences, visitors can be guided by their personal interests, allowing for a more meaningful visit. Deborah Spiegelman, CEO/executive director at Miami Children's Museum, FL, concurs that museums will continue the trend towards visitor centricity to create individual entry points for visitors, therefore attracting a larger viewing base as well as boosting visitor engagement and empowerment. Tomoko Kuta, director of education and exhibitions at The New Children's Museum, San Diego, CA, expands upon this point to suggest that the increased ability to affect outcomes

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Playing Now!

We asked member museums to recommend exciting and inspiring current exhibits. Check out their likes!

Feast: The Art of Playing With Your Food The New Children's Museum San Diego, CA



Feast: The Art of Playing with Your Food features artworks that focus on aspects of food such as transport, sustainable living practices, sounds, etc. The exhibit offers a look at our relationship with food through the lens of artists using food as part of their practices.

www.thinkplaycreate.org/exhibition/feast

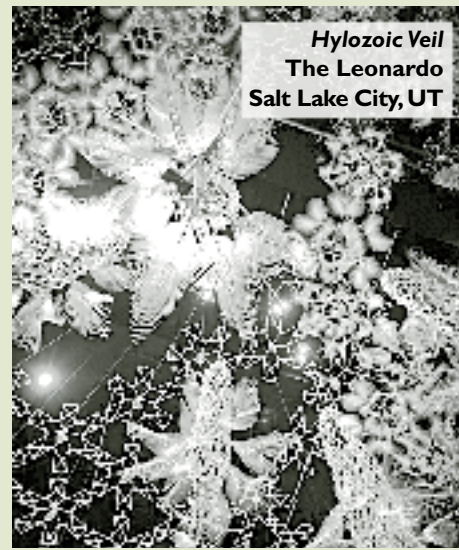
Solar Spot—Inside Mid-Michigan Children's Museum Saginaw, MI

Solar Spot—Inside features an interactive dance floor where children represent electrons jumping on a solar panel to generate energy in the form of light.

www.michildrensmuseum.com/explore/galleries/

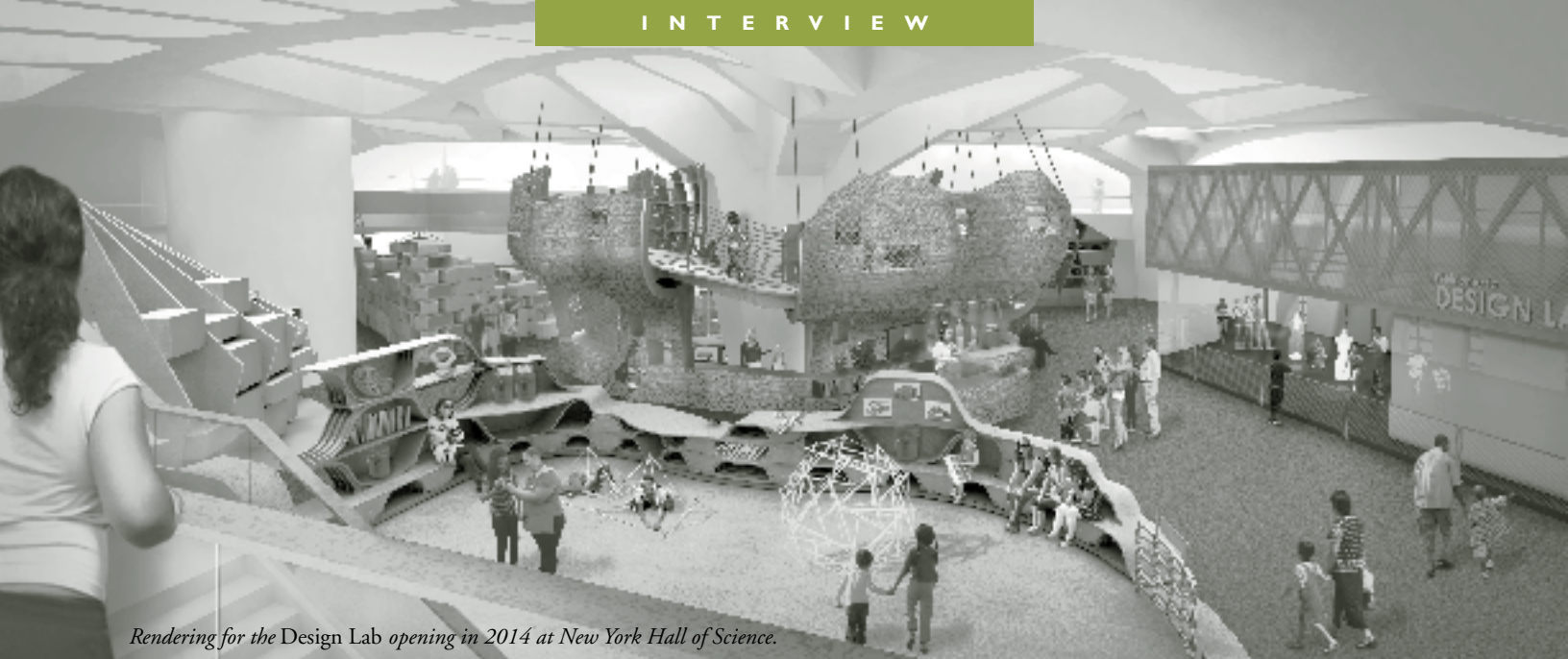


Hylozoic Veil The Leonardo Salt Lake City, UT



The immersive environment of the *Hylozoic Veil* uses physics, chemistry, sculpture, biology, materials science, and engineering to subtly respond to a visitor's presence. This evolving installation explores responsive architectural systems that may someday recognize and react to our needs.

www.theleonardo.org/exhibits/discover/hylozoic-veil/



Rendering for the Design Lab opening in 2014 at New York Hall of Science.

Situ Studio

Peggy Monahan is the Exhibit Projects Creative Director at New York Hall of Science. Monahan has more than two decades of experience in museums such as the Boston Children's Museum and San Francisco's Exploratorium, and has created and directed exhibitions on topics ranging from genetics to creativity. She strives to create deeply interactive social exhibits that involve visitors of all ages working together for extended periods. As Director of Exhibits and Programs at The Tech Museum in San Jose, she adapted a successful but long-term design-challenge methodology for use in shorter-experience exhibitions and floor programs, refocusing the museum's efforts to use exhibits to support pedagogy and "inspire the innovator in everyone."

Monahan's exhibits and projects have included the Geometry Playground at the Exploratorium (San Francisco, California); the Secrets of Circles at the Children's Discovery Museum of San Jose (California); the Imagination Playground at The Tech Museum of Innovation (San Jose, California); Every Rock Has A Story at Cranbrook Institute of Science (Bloomfield Hills, Michigan); and Water Ways at the Providence Children's Museum (Providence, Rhode Island).

She is currently leading the creative development of three exhibitions at the New York Hall of Science, including the Design Lab, scheduled to open in 2014, a 7,000-square-foot exhibition dedicated to in-depth design activities.

Robin Meisner is the Director of Exhibits at Providence Children's Museum in Providence, Rhode Island, where she oversees the de-

In Support of Things that Live in the Cracks



An Interview with
Peggy Monahan
New York Hall of Science

Interviewed by Robin Meisner
Providence Children's Museum

sign, creation, assessment and maintenance of the museum's exhibits and environments. She holds a doctorate in education research from Kings College London, with a focus on children's informal science learning in science centers and children's museums. She began her career at Providence Children's Museum in 1998 as an educator and science developer. After completing her doctorate in 2007 and directing public programs at MIT Museum for three years, she returned to take a leadership role at Providence Children's Museum in 2011.

MEISNER: *Is there anything you would consider unexhibitable in a children's museum?*

MONAHAN: Every time I try to think of something unexhibitable it just makes me think of how I would exhibit it. Some of the craziest ideas for a children's museum exhibit have already been done—*Endings*, for example, Janet Kamien's 1984 exhibit about death at the Boston Children's Museum. I value kids' experience of the world, and I think they have a broader range of experience than we expect, which is why topics like death are not unexhibitable.

MEISNER: *What exhibit do you most want to make that you also think would be the most difficult to make?*

MONAHAN: For more than twenty years, I have wanted to do a music exhibit that isn't necessarily about instruments or sound but about the emotional, expressive possibilities of music. I'd like to design an exhibit that would allow people to accurately express musically what they are thinking. This is hard to do because personal thoughts and feelings are so subjective, but I think we now have the technology to try it.

MEISNER: *What part of the exhibit design and development process do you love the most, and what part is the hardest?*

MONAHAN: I love the blue sky period where everything is possible. All you have to do is learn and ferret out the coolest parts of a topic. But it can also feel overwhelming. I spend a lot of time during this part being both excited and deeply confused. But the best part of the exhibit process comes with the first, barely exhibitable prototypes. You've made this inchoate idea real, at least momentarily, and present it to real people

I'm an educator and an experience designer, and my medium is exhibitions. I don't design exhibit furniture or come up with colors or graphics. I arrange experiences, crafting them into what I hope will be transformative experiences that become implanted in people's lives. We often focus on the impact of repeat visits, but I'm not willing to consign one-off visits to unimpactful nothingness. Each visit can have impact if it's memorable.

I want to figure out how to make the best use of a single two-hour exhibit experience.

for feedback. It's exciting and super terrifying. Then you figure out how to make it even better.

MEISNER: *Can you remember an example of a really cool prototype: how visitors reacted to it and where those reactions took you next?*

MONAHAN: Among the prototypes for the *Secrets of Circles* exhibit at the Children's Discovery Museum of San Jose were these really awesome gears. We wanted them to be stackable so you could change gear ratios, and we placed simple patterns on them so you could see how fast they were moving. When I looked at it, I thought, "cool set of gears, but why would anyone go near it unless they were already into gears?" When I watched people encounter it, they had fun but didn't stay long. It was a smart design, but it was also really neutral and utilitarian rather than inviting. I added some beautiful patterns and intriguing pictures of circles, making them visually more interesting and that made a few more people sit down and explore the activity.

One day, we had a group of Vietnamese visitors. One of the pictures that I'd posted on top of the gears was of a cyclo, a traditional Vietnamese three-wheeled bicycle taxi. A woman sat down on a bench near the gear table. She didn't appear drawn to working with the gears, but when she saw the picture, she got excited and called somebody over and they had an animated conversation in Vietnamese. Soon other people in her group came over and started playing with the gears. Their initial attraction to the exhibit didn't have much to do with any interest in gears, but I was reminded how important it is to use a lot of techniques to invite people to an exhibit who may not necessarily be drawn to the topic.

MEISNER: *What do you think about when planning a new exhibit?*

MONAHAN: I think a lot about people—who's coming to the exhibit and how they interact. In an exhibit I am working on now—essentially a series of tinkering activity spaces facilitated by explainers—I think about ways to get people talking to each other. How do we get visitors to respond not just to the things we design, but to the things that other visitors make and leave behind? People respond to the visitor-built

examples almost more than anything else. In tinkering spaces, the work of previous visitors affects the experience of subsequent visitors.

I also think about the way that interactions among visitors can carry the lasting impact of the exhibit experience even further.

In developing the *Design Lab* I think more about formal education than I have in a long time, since we're involving teachers in improving connections between school and field trip workshops at the museum. It's not enough to say, "I'm going to serve grade-level content goals," because I'm not convinced that we do that particularly well. But what museums do very well is provide lots of different ways for people of all ages to show they're smart. I'm about to create what I'm calling the "doc tool," a documentation tool for teachers. It's similar to an iPad app that lets teachers take pictures of what their kids are doing. I don't think teachers get enough opportunities to step back and observe. Doc tool prototypes have strips of paper attached that say things like "capture your students' learning," "look for concentration, frustration, trying things again and again," and "how are kids learning here in ways that are different than school?" Then they can take these photos that show instances of museum learning success—and sometimes with the most unlikely kids—back into the classroom along with suggestions on how to extend the exhibit experience.

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MEISNER: *What museum exhibit or experience—whether from childhood or adulthood—has been the most memorable?*

MONAHAN: When I was a kid, there was an outdoor sculpture of a whale at the Museum of Science in Boston. Everybody

climbed on its back and slid down its face. I'm sure that wasn't what was supposed to happen, but I remember it because it was thrilling to feel like I was doing something slightly transgressive. I also remember the museum's ball track and turning the handle so the bowling ball would go up. The exhibit was labeled with all the different types of energy: kinetic, mechanical, potential, electrical, etc. That level of detail didn't stick at the time—all I knew was that it had something to do with energy.

Another reason I remember this is that I now have a love/hate relationship with vocabulary in exhibits. I hate the "anti-label fundamentalism" in our field: "Oh, we don't want to put words on our exhibits because people should know what to do." The point isn't focusing on vocabulary—some people just like to read. I remember the labels "kinetic energy" and "potential energy" in the ball exhibit because the word "kinetic" was so weird to me back then. Years later, when talking about kinetic energy and potential energy in my high school physics class, it clicked, "Oh! Like that ball machine at the Science Museum." When I think of kinetic energy, potential energy and energy transfer, I picture the exhibition from my childhood—and part of the picture are those words.

As an adult, I remember the wacky, impossible places. I love City Museum in St. Louis. You want to talk transgressive? The City Museum is incredible. I love the Children's Museum of Pittsburgh and its clear vision of honest and real materials. The American Visionary Art Museum in Baltimore is also incredible. Each of these three museums has a strong singular vision. Both the American Visionary Art Museum and City Museum have an artist's sensibility about using found objects. And the Children's Museum of Pittsburgh has this deep sensitivity and respect for all visitors—putting real stuff in people's hands.

MEISNER: *What do you think today's kids will remember about museums when they get older? What types of experiences will stick?*

MONAHAN: Most people think it will be the high-tech experiences, but I think it will be the things that are deeply personal, things you make yourself, experiences that

I think about providing opportunities for creative misuse in our *Design Lab*. I love it when people misuse things in inventive ways, which is different from the misuse that signals that they couldn't figure out what to do, which means I got something wrong and need to fix it. I love the misuse that says they're not doing what I wanted because they had a better idea and it's cooler than what I could come up with. Experiences like sliding down the whale's face or feeling the tension of pushing beyond boundaries will be memorable.

are a bit transgressive. I think about providing opportunities for creative misuse in our *Design Lab*. I love it when people misuse things in inventive ways, which is different from the misuse that signals that they couldn't figure out what to do, which means I got something wrong and need to fix it. I love the misuse that says they're not doing what I wanted because they had a better idea and it's cooler than what I could come up with. Experiences like sliding down the whale's face or feeling the tension of pushing beyond boundaries are memorable.

MEISNER: *In your career you've worked in museums that span the range between very high tech and very low tech. What do you think about using technology in exhibits for young kids?*

MONAHAN: Technology is a tool for an experience rather than an end in itself. One of the hardest things in exhibits is to get people to notice what you want them to notice, and it can be hard to get people to look away from glowing screens. "Oh, let's put all our labels on monitors and then we won't ever have to print them!" I don't want people to just look at labels; I want them to notice and interact with all the other things—and people—in the exhibit. But, technology can fuel an experience that you want to provide. There is a part of the *Secrets of Circles* exhibit called Spin Pictures where you can set things to spin on a turntable, and by using a reflective box that you can put anywhere, you can take a long exposure picture from above. You need the technology—a camera and a screen—to fuel the experience, and even though the technology made it possible, the experience itself is of real motion in the world.

When I think about technology, especially screen-based experiences in children's museums, I think we're missing the point. Ideally, I want kids to experience things happening in the real world. If you overload an experience with technology, you're not following the rules of the world, you're following the rules of whatever programming you did. On the other hand, video opportunities to document what you did are very cool. It's all in how you use it.

MEISNER: *What are the most important elements that lead to the success of an experience or an exhibit?*



While prototyping gears for the Secrets of Circles exhibit at the Children's Discovery Museum of San Jose, staff discovered that gears that simply functioned well were attractive primarily to people who already liked gears. In order to inspire a broader audience to explore the wonders of gears, it was essential to make them visually appealing as well.

MONAHAN: People are very important, and exhibits must be visually inviting. There are a lot of good phenomena-based exhibits that don't invite you in to play unless you already like the topic. I think about the materiality of the exhibition—what things are made from. It doesn't have to look slick, but you have to design the environment as much as you design the individual exhibit components. Why would anyone walk up to an exhibit? What do visitors, solo or in groups, like to do? If I make something for kids, what's of interest to their parents?

MEISNER: *How do you include adults*

in the experiences that are largely seen as being for children?

MONAHAN: We're experimenting with providing a role for chaperones—other than standing in the back and policing behavior—by giving them a separate introduction that tells them what's going on and how they can participate. They're more ready than you might think to have a bigger role in the process.

I also think a lot about a visitor's identity within an exhibition. Some people are explorers, and others are facilitators. In children's museums it is very powerful to invite adult caregivers to note what their kids are doing. In a Tech Museum exhibition called *Imagination Playground* that was about creative play and technology, even though we worked hard to make sure adults would find it a playful place to play creatively, we knew that some adults wouldn't. So we put benches in places where people could observe others and reflect on how people were playing and how technology affected the way they played. Signs next to the benches said "Watching People Play" and had a little snippets about what they were probably seeing and encouraging them to think about the role of technology in life.

There are lots of schools of thought about benches. "There should be no benches because you want the parents in there playing with the kids." But I think no benches is a recipe for people not staying long at the exhibit because parents don't want to stand for long. At the Children's Discovery Museum in San Jose we used wide benches instead of stools so that each bench could seat a parent plus kids. If you want parents to hang out in an experience, put it on a table surrounded by seats so they can will sit down and do stuff with their kids. Make people comfortable.

We assume parents should actively play with their children, but not all cultures follow the same pattern. In research conducted at the Chicago Children's Museum, Suzanne Gaskins talks about different cultural attitudes toward play. Maybe we don't need to force people into doing things "our way." What we should be doing in exhibits is primarily providing for comfort. The act of learning is a transformative experience and by definition a little unsettling. If we want

People are at the core of maker spaces, and it's ideal when these participatory experiences are offered without overly managing materials, curating responses or facilitating discussions. So, yes, there's a lot of mess, but it's a productive mess....you don't want people to walk into chaos.

We want people to feel comfortable and welcome, like we respect them. We don't want to throw a party with plastic on the furniture, but we also don't want to invite people in when our laundry's all over the place.

people to take these leaps with us, the first thing we need to do is make them feel comfortable enough to take them.

MEISNER: *Speaking of taking leaps, how do you incorporate risk into the experiences that you create?*

MONAHAN: Well, there are two kinds of risk: risk for visitors and risk for developers. And for the visiting public, there's a difference between risk and hazard. In a risky activity, you're aware of the elements that go into it, but you do it anyway, whereas a hazard is the rusted bolt that causes the railing to give way.

At the Exploratorium we created a geometry playground with structures that had never been built before, including the Gyroid. Kids climbed through this crazy cube-like thing, sometimes sitting up or even standing on the top of the ten-foot-high structure. Some kids jumped off and got bumps and bruises. Even though we did a lot of prototyping, it was very risky (and expensive.)

I'm proud that we made the Gyroid, but in some ways it was a big mistake, since it was part of a traveling exhibition for other museums that weren't necessarily ready to take on that kind of risk. Some places set it up and some didn't. While developing the Gyroid, we brought together playground safety experts, including a playground safety control consultant. She watched kids climb all over it and said, "That's one of the coolest things I've ever seen, but also one of the most challenging." It was impactful—deeply exciting and educational but tough to navigate.

How do you handle risk in an exhibit? Prototype, prototype, prototype. Early and often so that you can encounter failure early on. I worked at a museum that wasn't used to prototyping and someone said to me before building a prototype, "Well, I'll work on this, but only if you promise that it's going to end up in the exhibition." I said, "I will promise you that at some point during this process we will spend a lot of time working on something that won't end up in the exhibition, and we'll be glad it's not there."

There's a second kind of risk—the kind taken by developers in deciding what to exhibit at all. In NYSCI activity spaces now, we're developing the activities and the fa-

cilitation training techniques at the same time. In some cases, I've given activity development entirely to the NYSCI "explainer residents," allowing them to take prototypes out on the floor that I don't think will work. Usually they need some changes, but I almost always learn something really important that I never would have considered. It's relatively low risk for me—I'm not out anything for allowing the explainer residents to prototype an activity. In fact, my work is stronger because of it. But it would be easy to just say, "No, do it this way." I've been very fortunate that I was able to take risks back in the day. And I think we need to give that opportunity to people around us.

MEISNER: *How has the design/development of exhibits changed since you started working in museums?*

MONAHAN: My first museum job was in 1986 at the Museum of Science in Boston where I worked as an explainer while still in college. Then I started working for Bernie Zubrowski at the Boston Children's Museum in 1990. My first exhibition there, *Build It*, was a fast-track construction exhibit—it went from project start to fabrication in four months.

Since my early days, everything has become more expensive, and every project is a much bigger deal. There's more tension and a tendency to overthink everything. It's not that we shouldn't care, but we are now much more cautious, even timid. I've always sought experiences where I can have a deeper hand in designing the exhibits in-house rather than hiring a design firm. I want to help create exhibits that feel homegrown rather than purchased from a catalog. I'm drawn to exhibitions that are so rooted in place, so clearly made by staff, and so expressive of the vision of the institution that if you were to take them somewhere else they would have to be radically transformed. There are a lot of design firms that are doing smart work, but there has been a trend to contract a design firm and order yourself up a children's museum. I'm drawn to work that is very grounded in individual institutions.

MEISNER: *What are you working on now, and what have you seen happening in the field that you're really excited about?*

MONAHAN: I'm interested in maker

spaces, in their materiality, as well as the visitor participation and visitor expression at their core. The maker trend is happening everywhere and in many different ways. There are maker spaces in museums, such as the Tinkering Studio at the Exploratorium, the Open Studio in TELUS Spark in Calgary, the Makeshop at the Children's Museum of Pittsburgh. But the trend also emerges in Nina Simon's Participatory Museum and the work she's doing at the Santa Cruz Museum of Art and History.

There's been an expectation of this kind of participation in children's museums for a long time. It's even in the name: we're not museums *of* art, but museums *for* children. It makes perfect sense to exhibit the things that children make. And now with the influence of social media, people expect to leave comments, to have their voices heard, and they expect to be able to express themselves through something they make and leave it for others. That impulse needs to make it into more of our exhibits.

MEISNER: *How does mess fit into the design process? In maker spaces, there's sort of a mental mess, but also a physical mess.*

MONAHAN: People are at the core of maker spaces, and it's ideal when these participatory experiences are offered without overly managing materials, curating responses or facilitating discussions. So, yes, there's a lot of mess, but it's a productive mess. There's an art to the right level of mess. In the *Design Lab* we're installing five exhibition spaces in stages. We will move into each area as soon as it's ready to gradually build that lived-in feel. Brand new maker spaces look sterile; they don't look like here's where people make stuff. We need to pull out some of the drawers, scatter materials in different places to activate the space and provide evidence of real kids making stuff. But, you don't want people to walk into chaos. We want people to feel comfortable and welcome, like we respect them. We don't want to throw a party with plastic on the furniture, but we also don't want to invite people in when our laundry's all over the place.

MEISNER: *We're big play advocates at Providence Children's Museum. But in the children's museum world and maybe*

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Barter, Borrow or Trade

Adding Art and Artists to the Mix

Anne Fullenkamp

Children's Museum of Pittsburgh

To bring fresh ideas to exhibit development, some children's museums are looking for inspiration and know-how from sources beyond traditional design channels. At the Children's Museum of Pittsburgh (CMP), artists have joined the exhibit design team and have helped everyone see the children's museum environment in new, thought-provoking ways.

The talent and innovative thinking of artists as experience-makers contribute to a more fundamentally creative design process and results in new pieces from people who generally work outside the children's museum field. Because the highly interactive spaces in children's museums are unlikely and unexpected settings for contemporary art installations, artists learn from museum staff how to create artwork that can sustain the rigors of a hands-on environment. Team members, receptive to each other's ideas, develop collaborations that enhance the quality of everyone's work.

Challenging presumptions of what children's museums are about, contemporary art links children's museums to the broader arts community. Through residency programs and gallery exhibitions, CMP provides artists with another venue in which to display their work or to create new work. By promoting the art and the artists, CMP attracts a more diverse audience, beyond the core demographic of families with young children. CMP makes art more accessible—and contemporary art can be some of the toughest work for anyone to understand and appreciate. Just as children's museums are often viewed as “starter museums” for nontraditional museum audiences, children's museums with strong contemporary

art programs offer a wide range of visitors an accessible and supportive environment in which to experience art without feeling lost or intimidated.

Contemporary art installations as hands-on exhibits expand the choices available to curators and exhibit development teams. In addition to seven permanent exhibit galleries, CMP has a 2,000-square-foot changing exhibit gallery that houses three to four exhibits annually; in addition, several other smaller spaces in the museum are available for temporary exhibit components. In order to better manage the demands of the exhibits calendar, museum staff designated the fall (typically late September to early January) as a time to install an interactive art piece in the changing exhibit gallery. CMP discovered several advantages to this approach. First, art installations are typically less expensive to produce than building new exhibits or renting traveling exhibits because the team works with the artist on scope of the project and its material costs. Shipping expenses, when required, are relatively low compared to traveling exhibits. Second, while collaborating with an artist for the fall show, the exhibits team has more time to work on other projects, enabling the museum to change exhibits more frequently. Finally, an art installation's theme bolsters other parts of the museum, extending new content, activities and programs throughout the institution.

CMP has found like-minded colleagues

at other children's museums who share an institutional commitment to original contemporary art. These museums have worked with artists—local and national—in hands-on interactive settings and faced similar curatorial challenges. Through informal discussions and meetings among museum staffs, CMP has built relationships through which art and information about artist-led projects are exchanged outside of the established sales or rental networks. In this ongoing experiment, artwork and ideas are bartered, creating a new model for exhibit partnerships among museums and artists that is highly flexible and adaptable to the scope of each project.

Exchange “Real Art”

Strong relationships with other museums of all types is key to a successful barter exchange. Traditional barter exchanges involve an immediate and equitable exchange of goods and services without the exchange of currency. The CMP barter model, adapted for museums, involves creative and often unconventional methods for determining what is “equitable.” Exhibit developers, designers, fabricators, curators and artists share experiences, ideas or actual artworks. In addition, storage space, shipping expenses, or installation costs can also be part of an equitable trade. This new twist on bartering provides access to original art without the expense of commissioning new work, operational and technical support for exhibit teams, and complementary education and public programs that have been tested in a hands-on environment.

CMP entered into its first barter-ex-

change partnership in 2012 with The New Children's Museum (NCM). The idea began in late 2010 when staff from The New Children's Museum (San Diego) (NCM) visited CMP to discuss exhibit design in general. It soon became clear where the two teams overlapped. Like CMP, NCM commissions contemporary art pieces. Their staff works closely with artists to create pieces that are tactile and interactive, making contemporary art accessible to children through hands-on, participatory experiences. Unlike CMP, NCM commissions the art to fit within an exhibition theme. Many pieces are site-specific installations intended to exist for the length of the eighteen-month exhibition. NCM pays the artist for a proposal and then pays him a fee for the piece and covers the fabrication costs. The artist retains ownership of the finished artwork, which is returned to him at the end of the show. CMP, on the other hand, is a collecting museum and owns the resulting artwork, which is added to its collection and exhibited on a rotating basis. Storage is an issue for both museums: both museums have limited storage space.

Early NCM/CMP discussions centered on how to quickly develop a traveling exhibit that showcased interactive artwork from both museums' collections without a huge investment of time or money. It was decided that each museum would loan the other an interactive piece and cover round-trip shipping with no rental fees or other up-front costs. Without a formal contract, this exchange was launched on a handshake. Initial plans for CMP to send its traveling silkscreen studio to NCM in exchange for something from NCM's *Animal Art* exhibit, closing in 2011, were scuttled when NCM

was unable to fit the studio into its schedule. But CMP, still looking for something to fill the fall 2012 slot, agreed to take an interactive art piece called *Missing Links* created by artist Felipe Dulzaides for *Animal Art*. In exchange, CMP planned to send NCM Nova Jiang's *The Beast*, a piece created through CMP's Tough Art residency program and a perfect fit for NCM's upcoming *Feast: The Art of Playing with Your Food* exhibit.

CMP borrowed *Missing Links* with the understanding that it would be returned to the artist in New York. This proved to be a win-win-win for all parties: 1) with limited storage space, NCM planned to return the piece to Dulzaides, but the artist was unable to store it at the time; 2) CMP needed a temporary exhibition at low cost that would also fulfill its mission to provide innovative museum experiences. Although *Missing Links* was not designed to travel, Dulzaides agreed to exhibit the piece twice; staff from both institutions worked with the artist to ensure that a new vision for the CMP installation met his expectations.

Because of the complexities of exhibition schedules, museum programming, and finances, all parties are ready to consider several options to meet the obligations of the exchange. Apples-to-apples solutions are not always possible. Unlike most exhibit rental dealings, the NCM/CMP partnership is collegial and unusually informal. There is nothing in writing that guarantees equitable barter exchanges in the future. On the other hand, the first half of the barter-exchange was carried out as a completed loan agreement with no party indebted to the other. Although exact dollar amount values are not tracked, some parity has been estab-

lished to ensure a fairly equitable exchange. As it turned out, technical issues with *The Beast* prevented its travel to NCM, so at this point, the exchange between CMP and NCM is still incomplete.

Exchange Big Ideas

TapeScape, a multi-sensory, interactive sculpture made entirely of packing tape, is an artist-led project that grew out of an exchange of information among three children's museums: CMP, the Children's Discovery Museum of San Jose (CDM) and the emerging Children's Museum of Southern Minnesota (CMSM) in Mankato.

Inspired by similar work created in Europe, Minnesota artist and CMSM board member Eric Lennartson designed the first installation of *TapeScape* for his museum in 2011. As an architect Lennartson had studied the work of Numen/For Use, a Croatian-Austrian design collective specializing in spatial design and conceptual art that had created several installations in Europe and Australia using packing tape. Intrigued with the idea of using this method to make structures for children's play environments in the United States, Lennartson obtained permission from Numen/For Use to adopt their techniques and planned the first installation. This type of art installation met the museum's goals of presenting interactive, hands-on experiences, and engaging children's curiosity of mind and body, but Lennartson also wanted to create something unique and capable of making an immediate and big impact since CMSM, still operating as a museum-without-walls, had access to a temporary exhibition space for only seven months.

TapeScape Children's Museum of Pittsburgh



TapeScape was a one-of-a-kind, experimental installation aimed at defining CMSM as a creative institution in Mankato, headquarters of 3M (tape!) and home to a population that is receptive to contemporary art. Lennartson sought in-kind donations from local and regional businesses, including his own architecture/engineering firm. 3M made the critical contribution of packing tape. Volunteers helped build the sculpture, further connecting the community to the project.

Once installed, *TapeScape's* Facebook page caught the attention of the exhibits team at the Children's Discovery Museum in San Jose. They contacted Lennartson and invited him to install a *TapeScape* sculpture at their museum. When CMP staff saw a photograph of the CDM installation, they contacted San Jose staff, who introduced Lennartson to CMP and encouraged the creation of another version in Pittsburgh. CDM staff also shared their *TapeScape* experiences, including technical installation details, materials recommendations, budgets, volunteer schedules, staffing needs, and the original educational programs developed by CDM for the exhibition.

TapeScape relies on the tensile strength of packing tape stretched around a metal frame to create a structure in which visitors climb through cave-like tunnels and slide down the smooth, sloped floor. Visually dynamic from the outside, *TapeScape's* theatrical lighting reveals the texture of the tape and the dramatic shadows cast by the structure's parabolic forms. Unlike most single artworks shown at multiple venues, none of the *TapeScape* sculptures is the same. Although all three installations shared a basic framework and palette of materials, Lennartson 'free-hands' the details in a spontaneous collaboration with each host museum.

Unlike traditional exhibits, original artist-led projects can be harder to define for the public or even other museum staff accustomed to exact project specifications. When working with artists on the creation of new pieces, some results are "happy accidents" while others seem to perfectly realize the plan. The open-ended creative process contains many unknowns days, even hours, before completion. Lack of prescribed supporting materials, such as a graphics package, education standards and marketing manuals, all of which are included with most traveling exhibits, require a high level of trust and cooperation within a museum staff. The exchange of information among Lennartson, CDM, and CMP was essential to the success of *TapeScape*. Lennartson

received an artist fee for the installation; CDM shared its ancillary resources and expertise at no cost to CMP.

Public opening of *TapeScape* was delayed two weeks to allow for completion of the graphics and marketing packages, finalizing details of the exhibit gallery design, and scheduling of public programs. The delay allowed CMP staff—especially marketing and education staff—to experience *TapeScape*. It can be hard to predict the performance outcomes of the exhibition, namely attendance numbers. Original art installations are not like blockbuster exhibits (like *Adventures with Clifford the Big Red Dog*, which preceded *TapeScape* on the diverse CMP exhibition schedule). The appeal of contemporary art installations like *Missing Links* or *TapeScape* can grow over time, once people experience it first hand, but how they are produced, installed, and marketed in children's museums are completely different.

Like the NCM/CMP artwork barter exchange, *TapeScape* is an on-going experiment with no script. CMP staff needed to think creatively about how to promote and interpret the installation experience to visitors, donors, and the community. Through drop-in sessions called "*TapeScape* in the Making: Watch us build it," visitors could see the process, talk with Lennartson and get a quick photo (*TapeScape* is an excellent social media photo opportunity). These visits also afforded prototyping opportunities to test both the integrity of the structure as well as the overall impression it made on visitors—an effective word-of-mouth way for the museum to build interest in the project.

At CMP, where exhibit design is grounded in the philosophy of "Play with Real Stuff," real materials and processes are exposed and explored through the interactive experiences and art direction of the exhibits. Material choices and building methods must adhere to industry standards for safety and accessibility and also be robust enough to withstand the rigors of a hands-on environment. The standards for touching art—a practice typically forbidden in most museums—are completely different in a children's museum. *TapeScape* navigates the path between traditional preservation and contemporary interaction by taking an ordinary, everyday material—packing tape—and using it in an unorthodox way that expresses its function (high tensile strength that holds things together) while discovering its beauty as a material. Through an expressive structure that encourages discovery through play, Lennartson created a work of contemporary art that can be appreciated

and enjoyed in many ways.

TapeScape is a community-building project that requires the combined efforts of a group, working together, passing rolls of tape back and forth, to complete the sculpture. It also requires the exhibits team to involve the broader museum community in building support for an unconventional exhibit idea. Loose partnerships, like the one formed between Lennartson and the museums in Mankato, San Jose and Pittsburgh, were successful because the exchange of information and ideas was informal and open-ended. Working on-site, Lennartson learned something new with each installation and customized each sculpture to meet the needs and character of each museum. In return, the host museums have shared information with him as he continues his work as a board member of an emerging museum.

Exchange Old Models for New

Commitment to a shared project vision from the artist and museum staff is essential to presenting any artist-led exhibit successfully. Partnerships with peer institutions, an effective strategy when working with artists, can grow into sustainable models that take many forms over time. A partnership can be designed to fit the short-term needs of a specific project like *TapeScape*, or long-term goals like establishing an on-going artwork exchange program similar to the barter-exchange between NCM and CMP. When cash resources are limited, a barter-exchange partnership can be a viable alternative to building or renting exhibits, as long as creative staff has the time and energy to invest in the project.

Visitors to children's museums are some of the toughest audiences to satisfy. As museums continue to look for new ways to provide their audiences with innovative experiences, it is exciting to think about artists as new players in the exhibition development model. Collaborations with artists expand the choices available to curators, challenge staff to re-think their work and their institution, and, most importantly, delight visitors with memorable experiences often created especially for them.

Associate director of museum experiences at the Children's Museum of Pittsburgh since 2011, Anne Fullenkamp joined the museum in 2006 as one of two lead designers for How People Make Things, a traveling exhibit funded by the National Science Foundation. Previously, she spent nearly ten years as an architectural designer and project manager with multi-discipline architecture firms in Baltimore and Pittsburgh.

Play is at the core of what we're trying to do at New York Hall of Science—thinking about the playful ways that people learn things and exploring more deeply how people play and what people do that's intrinsically motivating. In designing for play, you have play and be playful yourself.

And then you need to set the stage for other people to play, paying attention to what people will do with things and how likely they are to mess around with the materials put in front of them. You can design for play really well or really superficially.

In Support of Things

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the science center world, as well, “play” is sometimes a revered word and other times one not mentioned. What does designing for play mean to you?

MONAHAN: Play is at the core of what we're trying to do at New York Hall of Science—thinking about the playful ways that people learn things and exploring more deeply how people play and what people do that's intrinsically motivating. In designing for play, you have play and be playful yourself. And then you need to set the stage for other people to play, paying attention to what people will do with things and how likely they are to mess around with the materials put in front of them. You can design for play really well or really superficially. You don't facilitate play just by having a bunch of good toys around.

On our playground we've been using apps to reveal the science behind the activities. We're making apps that are fun to use and support what kids want to do—we can unpack the science later. *Design Lab* activities are deeply playful: we start with what we think kids want to play with, and then figure out the science that can come out of it.

MEISNER: We're redesigning *Water Ways*, which you developed in 1998 while working here at Providence Children's Museum. At that time, many children's museums were designing exhibits with the primary focus on content. If it was about water, it was about the science behind water or about ecosystems. But, as our executive director Janice O'Donnell says, the exhibit—and you—were ahead of your time. *Water Ways* was about play and about water. The two topics weren't separate or even layered. I've always respected that mix in your work.

MONAHAN: Thank you. So often exhibit developers start with what they want people to learn, then they figure out what they need to do to help them learn it, and that's what they put in the exhibit. I start with what I want people to feel and then I figure out what they need to do in order to feel that way. For any exhibit I iterate and try to balance three things—feeling, doing, and learning. If you don't have enough feel-



*The original *Water Ways* exhibit, developed by Peggy Monahan at Providence Children's Museum, is currently being redesigned. At the time this exhibit opened in 1998, nearly fifteen years ago, most children's museum exhibits were didactic, focusing on topics, such as water, with the goal of helping kids learn through playful activities. But *Water Ways* was equally about play and about water. For this reason, museum director Janice O'Donnell characterized Monahan as ahead of her time.*

ing then it doesn't have impact. If you don't have enough doing, then why is it an exhibit? And if there's not enough learning, then it's not worth doing the exhibit.

If you let visitors be your guides by tracking how people meander their way into a topic—you end up with something that feels a lot like play, which is deeply, intrinsically motivated activity.

My colleague Dorothy Bennett and I have been working with teachers at the Summer Teacher Institute to design problems that they can do in class called “problems worth solving,” that emerge out of kids' interest rather than from content. If the topic is vibrations and waves, for example, we ask teachers to think about settings in which vibrations happen. Then, forget about vibration and just think about people in that setting and a problem that might happen there. Once you have those pieces in place, is there some way to generate a reason to care about solving that problem?

MEISNER: Is there anything else you would like to share with the children's museum world?

MONAHAN: Two things. First—to hammer this home again—prototyping. I'm not the world's best prototyper, but I'm a good evangelist for it. It is important to put your ideas in front of people and pay attention

to what they think. There's an unfortunate trend lately, in science museums especially, to place more emphasis on evaluation done by evaluators, and then the people making the exhibitions step back from doing the prototyping. Evaluators have intuition about how people learn things and what people do with what exhibit developers put in an exhibit. But it's far more important that the exhibit developer have developer intuition. There's no substitute for directly watching people do something, whether it's going well or bombing.

Second, is the cool stuff happening in children's museums because of their multidisciplinary nature. As I migrate between children's museums and science museums, I find that in science museums there is a singular definition of all that is good: STEM (science, technology, engineering and math). But I love the things that live in the cracks among disciplines. Things that are unabashedly about five disciplines all at once. Children's museums can do that seamlessly and effortlessly if they let themselves. Because I have thought so much about formal education lately, I've struggled to find a way to be of use to a very disciplinary mindset but still keep in mind our core strengths and offer people the best museum experiences we can. Children's museums don't have to worry as much about the disciplinary part in their exhibit contents; they don't have to draw those distinctions. I hope that children's museums find ways to talk about their value to formal education, granting organizations and to others without having to put a stake in the ground around disciplinary standards.

People add “art” to STEM to become STEAM. I appreciate the acronym's multidisciplinary intent, but STEAM carries a momentum toward reductiveness. It becomes a big check list: you can only do art in the service of science and you check that box and now you're done with it. I love art and science all stirred up together. Don't bring reductive acronyms into the children's museum world! Stay firm! Resist!



At the Hands On Children's Museum in Olympia, Washington, rich theming ties the museum even more strongly to its region, giving funders and visitors the sense that this museum is truly theirs, and could not be located anywhere else but in the South Puget Sound region of Washington state. Visitors recognize their region and themselves in the exhibits.



...[On the other hand,] we have seen larger, established children's museums move away from richly themed environments and toward a "maker" or "tinker" aesthetic. Children's Museum of Pittsburgh and the Children's Museum of Phoenix (above) are wonderful examples. These museums contain spaces that rely on visitors' sense of curiosity and creativity, as well as the dedication of a very strong staff, to work well.

Exhibits: Which Way to Go

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porary aesthetic, while still rooting their exhibit content in local culture, regional stories, and the look and feel of their surroundings.

Based on observation and anecdotes, however, there are disadvantages to consider in both exhibit approaches, even if they occur in the same museum. In some of the more open-ended "maker" or free form exhibit environments, parents and caregivers may wonder what they are paying for when they first encounter the less refined programming environment. This can happen even though the educational and experiential content are apparent, because the materials in use are common or everyday items and the space is less finished than the adult is used to. Often the more artful exhibits don't seem as intentional at first glance, which can be a sticking point with parents and funders. At this juncture, do museums continue to educate the funders and visitors about the learning value of these activities, and stick to their aesthetic choice, or somehow polish the exhibits into more traditionally accessible forms?

On the flip side, in heavily themed environments, where the play is fully wrapped in the context of a semi-realistic forest, beach or train car, or where a specific culture is evoked through construction of a traditional village or structure, it is often harder for visiting adults to identify the educational components tucked into the play spaces. As exhibits get more sophisticated in their theming, kids tend to find them engaging as long as they are having fun. However it can

become necessary to identify the educational outcomes for parents who see kids "just playing." While the environment can create an initial "wow" response, it is essential to be able to answer the question: what do children and families *do* in the space? What is rich about the exhibit experience besides the visual context?

And of course we always want to figure out how to separate a brief trend from a long-lasting shift in the field. What will emerge in the wake of the current STEM/Maker/Tinker buzz? The recent rush toward incorporation of these topics follows in the footsteps of other bubbles in exhibit focus and interest. Nutrition and anti-obesity, financial literacy, early learning, school readiness, and outdoor spaces have had their time in the exhibit design, grant-writing, and PR spotlight. Many of these have subsequently held fast as stalwarts of exhibit galleries across the country, alongside the grocery stores and vet clinics that excite generations of visitors. However, few of these have had as big an effect on (or coincided so strongly with) an overall aesthetic shift in museum environments, the way STEM and Maker spaces have. The "artful use of available space" is going hand in hand with the newest program and exhibit content. There is a strong corresponding public interest and trend in education and in the larger DIY movement; because of that, related museum exhibits may continue to be supported through grant, foundation and individual funding.

Even if this artful approach is long lasting, other ideas will follow as museums look

toward the future. What is next in exhibit and program design? As children's museums continue to evolve, grow, and respond to the interests and needs of their visiting families, how will exhibit designers respond to ideas coming around the next corners? There are a few trends that we see emerging, which may in turn have impacts on exhibits, programs, and designs. Some could be considered to be in the wings, though it remains to be seen whether they come forward subtly, or with lasting effects on the look and feel of the exhibit gallery.

- The questions we are asking in early exhibit design phases are more and more about access, welcoming, and even social justice, moving toward **inclusive design**. Is this an instinctive reaction on the part of children's museums to the growing economic disparities we see in our country, or evidence of the lasting effect of initiatives like the Americans with Disabilities Act which has physically shaped much of our environment, or the It Gets Better Project, which has reframed the discussion of adolescent sexuality? As a culture we are moving from tolerance, to access, to inclusion, and we can expect exhibit design to reflect this progression. As with effective "green" decision-making, questions about who the exhibit is for and who feels welcome in the museum are better asked as early as possible in the design process.

- **Emotional intelligence** is emerging as an important factor in school readiness and secondary school success, and Social-Emotional Learning (SEL) programs are on the rise. Educators are looking to these softer skills to explain achievement gaps

that cannot be attributed to the quality of instruction or access to academic programs. Can this be reflected in our exhibits and programs? Will it show up in staff training, or in parent education classes offered by museums? If it emerges as a tipping point in developmental and academic milestones, it may provide fertile ground for how exhibits are designed, staffed, and evaluated.

• With emotional intelligence comes a better understanding of **risk taking**, as physical, intellectual, and social risks confront children and families every day. We have all seen editorials (and family behaviors in children's museums) suggesting that the children of the free-wheeling '60s and '70s became not-so-free-wheeling parents. For various reasons, kids are not necessarily equipped to understand what risk means and how it informs productive behavior and growth. Can we go from STEM to STEAM, by adding art, and to STREAM* by adding risk taking? Can children's museums reconcile the societal need for kids to encounter "safe dangers" in their lives and learn to make good decisions, while accepting the idea that some kids could get hurt? Perhaps children's museums will help create those spaces for families, even while putting their own "R" into practice.

Will these concepts work their way into our exhibit and museum design vocabulary the way STEM and Maker movements have? Interestingly, as children's museums have become more and more successful in their communities, other museums have taken up the mantle and are beginning to look more and more like children's museums! One aspect of the future of exhibits in children's museums will hinge on whether the children's museum field continues to take the lead—even from its sometimes less-than-lofty status among sister organizations—to show the larger community what kids and families actually need from their cultural institutions.

*Credit to John Ito of KidsQuest Children's Museum for discussion of the added "R," though in his version R is for Reading, another fundamental skill that helps kids get more out of the other letters in STEAM.

Alissa Rupp is a LEED-accredited registered architect and president of The Portico Group. With over eighteen years of professional experience, she focuses on places for informal education and public learning opportunities. Her work on visitor centers, children's museums, and zoological facilities includes both architecture and exhibit design, and her projects have had strong roots in sustainable building practices and interpretation.

What We See Happening

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and shape experiences will not only further involve visitors, but enhance their levels of learning and creativity thereby fulfilling this increased desire for a customized museum visit. Angela Barris, president and CEO, Mid-Michigan Children's Museum, Saginaw, MI, believes that despite increased access to technology in the future, hands-on exhibits will continue to be a strong component of children's museums because of visitors' desires for direct engagement.

2 Utilizing Local Resources

Fostering relationships with local businesses encourages an increased sense of community involvement and connection, and children's museums are increasingly reaching out to their local communities as exhibit resources. Utilizing local businesses for exhibit design and implementation, rather than outsourcing to a national fabricator, helps children's museums form new bonds within their immediate vicinity. Anne Snow, executive director of the Children's Museum of La Crosse, WI, comments that using local builders and designers for museum exhibits helps grow the population that takes ownership in the museum. This desire for increased personal connection to the museum ties back to visitor centricity and customization; visitors want to feel that they are part of the exhibit and the museum as a whole. The New Children's Museum's Tomoko Kuta adds that she often works directly with local artists and artisans to conceive of and build exhibit artwork, diversifying her workforce, integrating local input, and establishing lasting relationships with her community.

3 Helping Adults Learn

Children's museums of the 21st century are a place for parents and guardians to experience and learn alongside their children. Children's museums are places away from work and household distractions, where parents and caregivers can spend quality time

with children, learn something new themselves and experience the luxury of becoming lost in the present moment as they play. Exhibits are increasingly focused on creating a simultaneous experience for all age groups, an observation made by Elizabeth Knight, exhibits director of WOW! Children's Museum in Lafayette, CO. This methodology keeps parents satisfied while helping them learn with and about their children in a constructive setting. One such setting is Maker Spaces, which Keith Ostfeld, the Children's Museum of Houston, predicts will grow to be one of the most important hands-on, minds-on, creative problem-solving exhibits. These settings allow adults and children to access and explore materials together, as well as pursue the boundaries of the imagination while collectively tackling challenges. Charles Trautmann, executive director of Sciencenter in Ithaca, NY, observes a trend towards exhibits that help adults understand how to foster learning in children as well as take advantage of advances in developmental psychology and neuroscience. Therefore, adults will not only be learning with their children, but learning how they can help their children continue to develop knowledge and skills after they leave the museum. Sheri Cifaldi-Morrill, director of exhibit design and delivery at Stepping Stones Museum for Children, Norwalk, CT, agrees that we are leaning towards designing exhibits around cognitive research information in order to help adults understand their children better.

No one can predict the future of exhibits, but we can thoughtfully consider what trends may become more dominant. We can be aware of new developments and available resources, and use them advantageously in exhibits. Thank you to member museums in the field for contributing valuable input and asking important questions. We hope that this article inspires spirited discussions and encourages children's museums to constantly ask: What exhibits inspire us? Who are today's visitors and how can we reach them? How can we take charge of the future of our exhibits?

Elizabeth Stein is the temporary communications coordinator for the Association of Children's Museums.

Exhibits in 21st century children's museums have morphed into experiences. In order to make these experiences more personal and lasting, museums are looking to tailor exhibits for their visitors' specific needs and desires. Increased visitor centricity emphasizes the importance of knowing visitors and their expectations, and looking for ways to relate to and reach them more effectively.

Many exhibits have been so confined, so stifled, so self-consciously clever in their attempt to capture the visitor's attention and convey specific and narrow predetermined content, that any chance for the serendipity found in that deeply rich wild place where curiosity is nurtured, has been all but destroyed....Perhaps this would be a fine time for all of us to return to that wild place that has always been at our feet. Maybe we should look again at that film or that highly designed exhibit for that which lies beneath the ephemeral, the superficial and allow ourselves to linger, to poke around the pebbles, to discover that which we missed in our frenetic effort to complete the experience and move on.

The Unfinished Symphony *Michael Oppenheimer*

of the falling drops, much like how wheels can appear to rotate backwards in films. She was delighted to finally understand the exhibit. My one suggestion had provided the catalyst to understanding what she had been struggling with for a year. The doors were suddenly opened and a string of connections appeared. "It's like speeding headlights through highway guard rails," she said, and I said, "Yes, like discos," and she said, "Like when you wave your open fingers in front of the LED tail lights of new cars," and I know we could have gone on and on with our running stream of suddenly realized strobe light connections, from the tangible detail to the abstract, from Eadweard Muybridge to pulsars.

Later that evening I wondered what was missing from the exhibit that left this one museum visitor mystified and frustrated instead of enlightened? I could only guess, for I had not seen it. But considering how my one possible explanation released such a torrent of understanding with such ease, I speculated that this exhibit was designed so tightly and with such strict content boundaries that the visitor had absolutely no chance to realize even one connection to any related, personally known phenomena or ideas. The experience must have been like hearing one beautiful note, believing it was connected to something more grand, knowing that with maybe one or two additional notes you could begin to know the full composition. But alas, there were no more notes, and you walked away frustrated and a bit stifled perhaps.

And yet, I would guess with a fair amount

of confidence, that the well intentioned museum educators and exhibit designers who developed this up-side-down fountain exhibit poured their skills and heart into it, and chances are, it underwent front-end and summative evaluation for specific content effectiveness. But it just might be that this exhibit, like so many other museum exhibits, had the rough edges of possibility totally designed away by such deliberate, thoughtful control. Many exhibits have been so confined, so stifled, so self-consciously clever in their attempt to capture the visitor's attention and convey specific and narrow predetermined content, that any chance for the serendipity found in that deeply rich wild place where curiosity is nurtured, has been all but destroyed.

It is not surprising then that there is a fair amount of restlessness in the museum culture today.

Perhaps this would be a fine time for all of us to return to that wild place that has always been at our feet. Maybe we should look again at that film or that highly designed exhibit for that which lies beneath the ephemeral, the superficial and allow ourselves to linger, to poke around the pebbles, to discover that which we missed in our frenetic effort to complete the experience and move on. To what? Why not stay awhile, get out and play in the park playground with our museum visitors. Notice the subtle social interactions and the stories being constructed. Then return to the backwards fountain and surround it with zoetropes and spinning old wagon wheels and vibrating piano strings and. Remove the shackles of content restraints. Follow your questions. Let the possibilities show themselves, because, as every child knows, they surely will, and you will be so very pleased, and any sense of longing will be only a wish that you could stay just a little bit longer.

Michael Oppenheimer's formative museum experience began when working beside his father building the nascent Exploratorium in San Francisco. After receiving his MA from the University of San Francisco in 1976, he rejoined the museum world, working at the newly opened New York Hall of Science as the director of exhibits under Alan Friedman and Sheila Grinell. He later returned to the Bay Area to become the founding director of exhibits and programs at Children's Discovery Museum of San Jose. Currently, Oppenheimer lives in the Pacific Northwest where he constructs environmental interactive kinetic sculpture, (windyhillart.com) writes short fiction, and serves as an adjunct exhibit designer for Tucson-based Exhibit Guys.

One day, many years ago when I worked as director of exhibits at the New York Hall of Science, a graduate student visited and showed staff a short film of children playing in a park playground. It was quite captivating with its chaotic energy, children running every which way, up and down, climbing, sliding—the usual stuff of playground play. The presenter paused and described what we had just seen as random play; we all agreed. Then the same scene was played again, but in slow motion, and the presenter asked us to notice how it was not, in fact, random, chaotic play. There was a leader with many followers. Once pointed out, it was so incredibly obvious. One boy was leading all the children up and down, climbing, sliding—how did we miss that? Then, in a third run-through, yet another layer, music, was added to the film—not wild chaotic music, but Schubert. Oh, it was a glorious ballet to watch, and as it played on, I began to wonder about the ubiquitous dance I was not seeing, hearing, tasting in the museum exhibits always around me.

Not so long after I saw that film, I read a short book called *The Geography of Childhood: Why Children Need Wild Places* by Gary Paul Nabhan and Stephen Trimble. It included an essay about a trip to the scenic country of northern Arizona that Nabhan took with his young children. He wrote: "I realized how much time adults spend scanning the land for picturesque panoramas and scenic overlooks. While the kids were on their hands and knees, engaged with what was immediately before them, we adults traveled by abstraction." In this short essay, titled "A Child's Sense of Wilderness," he had, with one stroke, placed words upon that which I knew to be true about a child's (and adult's) experience among good museum exhibits.

Recently, I was at an informal dinner, sitting next to a young woman who learned that I had worked at science and children's museums. She mentioned that she had visited a museum a year or so ago and had seen an exhibit that she enjoyed for its beauty, but she was troubled because she could not understand how what she saw was possible. She described a small pool of water with ripples moving towards the center where drops rose only to disappear into a spigot above. I suggested that perhaps the exhibit incorporated a strobe that was set at a slightly different frequency than that

Promising Practice

A W A R D

Chicago Children's Museum
Chicago, Illinois

DIVERSITY INITIATIVES



Chicago Children's Museum



Above, a museum visitor meets the many faces of Chicago Children's Museum visitors, including her own. This wall of self-portraits, a stunning collection of original artwork, warmly welcomes all visitors and sets the tone for the museum experience.

At the entryway to Chicago Children's Museum (CCM), a vibrant collection of nearly 400 self-portraits greets visitors, proclaiming, "We are Chicago Children's Museum." The faces of children, teachers, community leaders, parents, and caregivers from a variety of backgrounds are intermingled with mirrors so that all visitors are reflected in the museum's community.

This collection is much more than a "monument" to diversity. Each portrait was created by an individual as an expression of his or her personal story. The collection reflects CCM's approach to community engagement that focuses not only on representation but on inclusion, participation, and first-person voice. Diversity is not simply about the statistics of audience make-up; it is about ensuring that communities and individuals leave their mark on the museum and have a hand in shaping the experiences that they encounter there.

Early experiences with diversity are critical to helping children develop a healthy worldview. Children's museums have a powerful set of tools (exhibits, programs, staff, and multiple approaches to learning) to help children interact with one another and experience the sense of pride and empowerment that comes from contributing their voices, actions, and ideas to a larger community.

At Chicago Children's Museum, building a community-engaged experience includes three parts: 1) creating a public "town square" that attracts and welcomes diverse people; 2) helping diverse people find and utilize that space; and 3) engaging community members, including children, in the process of shaping the experience. The result is a museum described by a visitor as a place of "warmth and welcome to all."

Creating a Place of Welcome

A museum is a physical space for all kinds of people to come together and engage in positive and meaningful ways. At CCM, public spaces, exhibits, programs, materi-

als, and staffing all reflect Chicago's diverse community and contribute to creating a place of welcome. A staff-developed Diversity Position Paper defines the museum-wide policy and commitment to diversity and lays out parameters for best practices supported by the board and all staff. Internal museum committees, including the Play for All committee (focused on engaging visitors of all

abilities), the All Families Matter committee (focused on engaging members of the LGBTQ community) and the Cultural Programs team (focused on engaging artists and performers of diverse cultural backgrounds) help to ensure that all aspects of the visitor experience are welcoming.

Visitors often comment that they feel "at home," at CCM, a nod to the efforts made in every realm to ensure inclusiveness. Museum staff receive regular sensitivity trainings on how to provide all visitors with an exceptionally welcoming and engaged experience. Bilingual signage and universally understood graphics are displayed throughout the museum. Diversity is prominently featured in museum graphics and promotional materials and on the museum's website. Exhibits are aligned with universal design principles to be inclusive to children with disabilities. Special equipment and adaptive tools enable children with limited dexterity to fully immerse themselves in the hands-on learning that takes place daily. LGBTQ-friendly signage and gender-neutral bathrooms are proudly featured in the museum along with gender-neutral books in the CCM bookstore. LGBTQ family-focused literature and books are also available in the museum's workshop space for early learners. Programming showcases the diverse cultures and traditions of communities throughout Chicago, while encouraging children to reflect on and celebrate their own unique identities. Guest-facing

staff members, trained to create avenues for constructive dialogue among families around the issues of race, ethnicity, ability, identity, and non-traditional families, model productive and positive interactions.

Making an Invitation

It is one thing to create a welcoming museum, but how do you ensure that diverse communities know about it and can access it? Through an extensive and in-depth process of on-the-ground community engagement work, CCM develops long-term,

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meaningful relationships with organizations that provide direct services to families. Museum staff work with social service agencies, aldermen, childcare centers, schools, and faith-based organizations to become a regular presence within those communities. Through this networked effort, the museum introduces resources and opportunities to low-income and isolated families and offers free bus transportation and museum admission to families served by identified partner organizations. For many children visiting CCM, the trip marks the first time they have traveled outside their own neighborhood, seen the downtown of their own city, or interacted with people who look different from themselves. Their connection to a global community begins with their journey to CCM.

Celebrating allVoices

When children, families, and community partners come to the museum they must not only feel welcomed and represented, but empowered to share their voices and make the experience their own.


Regular community partner surveys and feedback sessions ask community members

for input on their relationships with the museum, including suggestions for how to better meet their needs. Museum talk-back boards daily ask visitors big-picture questions about their favorite ways to play, or what languages they would like to see on signage and materials as well as fun questions about what they would like to name the CCM pet. Exhibits regularly incorporate components that encourage visitors to leave their mark. For example, the museum exhibit *Ready, Pet, Go!* invited children to create a tribute to their own family pet and incorporate it into the exhibit.

Community voices contribute to the exhibit and program development process. Partner organizations serving people with disabilities review each new exhibit during concept and schematic design to advise on maximizing inclusiveness. Community adults and children create components and artwork that become vibrant elements of museum exhibits. Children are asked about the types of experiences they'd like to have at the museum. In direct response to this input, the museum's *Play it Safe* exhibit includes a fire pole, fire hoses, and other requested features. Community members of

diverse cultures, ethnicities, perspectives, and abilities provide first-voice programs, delivering authentic performances and activities for visitors that foster an appreciation for a wide array of customs, families, and traditions.

Modeling What's Good in the World

Ensuring a visitor experience that is both for and by our community requires commitment and resources, yet the rewards are great. Recently, a visitor who had experienced discrimination and exclusion in other aspects of her life wrote CCM a letter, noting what it meant to her to experience a place that was so welcoming and inclusive. "Thank you for being something good in the world," she wrote. Her message continues to remind us why we invest so deeply in community-engaged practices and in our commitment to diversity. We are here to give children the best possible example of a global community modeled on respect and celebration—a place where every voice is valued and included. 

—Natalie Bortoli, vice president, educational programming & experience development