The program, called the Living Laboratory Initiative, began in 2005 at the Museum of Science, Boston. Three years ago, the organizers received a National Science Foundation grant to expand it to other museums and science centers. Today, there are 16 sites around the country, and at each one the museums are working with local universities to bring researchers onto the exhibit floor to conduct real-time research.

The Living Laboratory consortium is the largest example of behavioral scientists working with science centers and museums to bring researchers and the public together under one roof.

“These kinds of collaborations are amazing two-for-ones,” says Marta Biarnes, a co-principal investigator of the NSF grant who co-founded the Museum of Science, Boston’s program in 2005. Researchers get access to a constant, reliable stream of participants for their studies. “And from the museum’s point of view, having scientists on the floor is just an amazing opportunity for us to engage our visitors.”

An open lab
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Today, eight labs from Boston-area colleges, universities and hospitals conduct research at the museum. Each is assigned a

A beneficial partnership
Psychologists around the country are bringing behavioral science to the public by conducting research on the exhibit floor at science centers and children’s museums.

BY LEA WINERMAN
Monitor staff

As a Baltimore-area mom of two young children, Lisa Feigenson, PhD, has long been a fan of the Maryland Science Center, the city’s waterfront science museum. But as a developmental research psychologist at Johns Hopkins University, she also used to find it puzzling that the museum — like many others — seemed to pay so little attention to behavioral science.

“I take my kids to science museums, and they predominantly represent what we know about things like planets and stars and dinosaurs,” she says. “Aside from a few visual illusions, there’s relatively little about the science of the mind.”

Now, Feigenson’s getting a chance to change that. Three years ago, Maryland Science Center staff asked her to take part in a program that brings psychological science to the public by hosting behavioral researchers who conduct studies onsite and explain their work to visitors.

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Blake says. For his part, Blake has published several papers and his colleagues have looked at how different factors, such as the chance to give some of the stickers away to another child. He has also discovered benefits to the museum work beyond publishing studies, including improving his ability to explain his work to a wide audience. “You learn to talk directly to people with no research experience. And not talk at them — it’s a conversation,” he says. Parents will often ask him questions he hadn’t considered, such as about the effects of parenting on the topics he studies. And he has learned to deliver a quick but accurate explanation of his research. “You want to convey the complexity of the science, but tailor it to the audience.”

The researchers also get to draw on the expertise of the museum’s education staff, who give them feedback on how to present their research to visitors in an engaging way. In Baltimore, Lisa Feigenson has found other benefits as well. She is studying how surprise plays a role in shaping children’s learning. Researchers have long known that babies and young children look longer at surprising events, but hadn’t been sure why. Feigenson hypothesizes that the longer looking time may reflect an opportunity for the babies to learn something new, because they realize they made a wrong guess about what would happen and want to learn why. Consistent with that idea, she and her students conducted a study in which they show young children surprising events — like objects disappearing in one place and reappearing in another — and have found that children learn better after a surprise.

In addition to improving her public outreach skills, Feigenson says the museum setting adds other dimensions to her research. She conducts her studies in a small area that’s separated from the main museum floor by a waist-high wall. She had thought that it could be useful for them. “They really wanted to know about our research, and thought that it could be useful for them.”

In one of her first studies at the museum, Callanan asked parents for permission to record their conversations as they walked through an interactive science exhibit. Then she looked at the ways in which parents interacted with boys and girls while taking in the displays. She found that parents were three times more likely to engage their sons in explanations of the science than they were their daughters. Callanan published her results in Psychological Science in 2001. At the same time, the findings inspired the museum’s staff to develop a new exhibit called “Alice’s Wonderland,” which used the character Alice to present the same science content as the original exhibit. The idea was that having a female character present the science would give parents the subtle message that it was relevant to girls as well as boys. Callanan and her students then observed families in the new exhibit, and found no differences in the ways parents talked to their sons and daughters there.

Since then, Callanan has continued to work with the museum on projects that contribute to her theoretical research on cognitive development and help the museum evaluate and refine its exhibits. Recently, she helped develop a new exhibit on mammoth bones by evaluating families’ conversations as they walked through a prototype of the exhibit. “That was a really interesting collaboration because the exhibit goals aligned with my research goals,” she says. “The museum wanted to know how to help children understand the role of mammoth bones as scientific evidence. And I was really interested in how children, through everyday interactions, learn to think and ask questions in a scientific way?”

Further reading

To learn more about her and others’ work at the Children’s Discovery Museum, visit www.cdmark.org/p/viewPage.asp?mlid=286.

To learn more about the Living Laboratory Initiative, visit www.livinglab.org.