



A young guest experiments with light and shadows with the NISE Network Bear's Shadow activity. Photo by Sciencenter/NISE Network

Small Museums, Big Role: Powering the NISE Network

By Rae Ostman

Over the past dozen years the National Informal STEM Education Network (NISE Network) has discovered the power of bringing small—and large—museums and science centers together to create a much bigger impact.

The NISE Network, often called NISE Net or simply “the Network,” is a national community of informal educators and scientists dedicated to supporting STEM learning across the United States. Hundreds of active partner organizations, including science centers, museums, and universities, as well as thousands of informal educators and STEM professionals participate in Network activities. Through the efforts of our partner organizations, more than 11 million members of the public participate in NISE Network project activities each year.

Small science centers and museums represent about half of all NISE Network member organizations. From the beginning of the Network more than 13 years ago, small organizations have had a huge influence on our activities, including the educational

materials we create; the professional development and networking opportunities we offer; and above all, the difference that our work has made in local communities. Dean Briere, executive director of the Sciencenter in Ithaca, New York, explains: “Small science centers have an impact beyond their size because they reach people where they live, work, and play. Collectively, small science centers have a broad and deep connection to their communities.”

Members of the NISE Network community collaborate to create free resources, implement them, and share their experiences and ideas with each other. Our projects focus on many areas of STEM, including Earth and space science, chemistry, synthetic biology, and nanotechnology. Network project teams are intentionally composed of staff from



The NISE Network is active in all 50 states and several U.S. territories. Image by Emily Maletz/NISE Network

diverse organizations, in terms of the type of organization, size, and location.

Through the years, small science centers and museums have been especially helpful at helping NISE Network project teams identify the kinds of resources that are most useful to our partners. Staff of small organizations tend to work across many roles that are specialized at larger institutions, and so they often have broad knowledge of many aspects of the program and operations. Additionally, almost all staff come into regular contact with guests at small organizations, and they usually have a good sense of what does and doesn't work for their audiences. These insights have helped the NISE Network create flexible, adaptable products that ultimately work well for both small and large partner organizations, such as our hands-on activity kits.

Staff at small science centers and museums are creative and resourceful in incorporating NISE Network resources into various programming. They often have a keen sense of how to make materials relevant to their communities, and a clear understanding of their role in their local STEM ecosystem. Trudi Plummer, director of education at the Maine Discovery Museum, puts it like this: "A NISE Net kit like *Explore Science: Earth and Space* allows us to break down, reconfigure, and

deploy really big science to respond to the needs and wants of our audiences."

Out of both virtue and necessity, small organizations must use available resources efficiently. When receiving a kit of STEM activities from the Network, small organizations work them into their repertoire and use them in myriad ways. Beth Demke, executive director of Gateway to Science, the only hands-on science center in North Dakota, reports, "We make extensive use of NISE Net kits throughout the year. Activities from kits have been integrated into our afterschool clubs, summer camps, in-classroom lessons, community festivals, special events, and resources for K-12 teachers. The kits are compact learning units that can be adapted to a variety of settings and audiences, and our staff has become quite adept at maximizing their use."

Small museums and science centers are also skilled at seizing opportunities to build mutually beneficial partnerships to do more—and better—work in their communities. Plummer explains that Maine Discovery Museum's Earth and space project led to two "incredible partnership opportunities":

One is with the Emera Astronomy Center at the University of Maine in Orono, Maine. We don't have a dome theater for space shows, and they don't have as much space and staff to offer hands-on activities. The second is with the Gulf of Maine

Research Institute and NASA. Together, we are developing a free-standing museum interactive about the impact of climate change that can possibly travel to partnering rural libraries. The NISE Net kits will inspire components and shape the accompanying curriculum.

Plummer says that initiating this type of collaboration and bringing Network resources to the table, “has helped put us on the map as equal partners in the informal and formal education community.”

Christina Leavell, manager of network projects at Science Museum of Minnesota, serves as one of NISE Net’s regional hub leaders and helps to connect Network partners to resources and opportunities. She says, “I’m always humbled by the efforts of our small museum partners. All of our Network partners do amazing work, but it’s often the smaller institutions (where work is done on a shoestring) that will find the most creative and engaging ways to expand upon our resources. It’s truly phenomenal, the power of these small places!”

To prove her point, here are some of the many ways that small science centers and museums have

collaborated with other local organizations on NISE Network projects:

- Bootheel Youth Museum in Malden, Missouri, has partnered with Lincoln University Cooperative Extension to offer STEM workshops for after-school programs at an elementary school and the local Boys and Girls Club;
- Children’s Museum of Science and Technology in Troy, New York, has collaborated with Albany Public Library to present STEM programs at urban locations;
- Sci-Port Discovery Center in Shreveport, Louisiana, has worked with the Re-entry and Work Release Program of the Caddo Parish sheriff’s office to train incarcerated parents in STEM education strategies to help them connect with their children during visitations and after their release;
- spectrUM Discovery Area in Missoula, Montana, has partnered with SciNation to bring STEM activities to schools and community events in the Flathead Reservation; and

Guests investigating landforms at the Paper Mountains activity. Photo by Emily Maletz/NISE Network





NISE Network partners share ideas, products, and practices with each other at a national meeting. Photo by the Science Museum of Minnesota/NISE Network

- Turtle Bay Exploration Park in Redding, California, has collaborated with the Shasta County 4-H Youth Development Program to engage youth ages 7-14 in STEM learning “beyond the farm.”

As small science centers and museums develop useful knowledge, products, and practices, they share them with the wider Network in various ways. The Network periodically has partner meetings to allow professionals to meet, share ideas, and learn from each other. In addition to peer-to-peer sharing, these meetings bring attention to ideas that can be incorporated into kits, exhibits, workshops, or other resources later on. Our project teams include participation, input, and feedback from small science centers and museums during all phases of project

work, from planning and development through implementation, evaluation, and reporting.

Charlie Trautmann, formerly of the Sciencenter, explains the importance of science centers and museums of all sizes working together to achieve common goals and share information through the Network. Reflecting on the way the NISE Network has influenced the field of informal STEM education, Trautmann says, “People are learning from each other throughout the field. It’s provided us with a framework for doing evaluations. We’re now taking a much more critical look at what we do educationally and the impact it’s having, and then adjusting that to get even better. There’s a whole feedback loop that we didn’t have before this.”



Patsy Reublin, executive director of the Bootheel Youth Museum in Malden, Missouri, explains how sharing practices across the Network has influenced her organization:



NISE Network partners collaborating on Team-Based Inquiry, a process for systematically gathering and analyzing data to improve practices. Photo by Science Museum of Minnesota/NISE Network

*I don't think there is much we do that hasn't been affected by NISE Net. I'll paraphrase Jack Nicholson from *As Good as It Gets*: You make us want to be a better museum. We've made our exhibit and facility signage better because of NISE Net. The Network has also helped us in many unexpected arenas. For instance, by allowing us to tour other facilities behind the scenes, we learned how to better organize our back-up exhibit supplies.*

The NISE Network is most successful when we empower our partner organizations to do their best work. As Plummer says:

It's hard to put into words the profound nature and magnitude of positive change the NISE Network has been creating for the Maine Discovery Museum. Every single opportunity to network, every mini-grant, conference, and every single kit has been a catalyst for positive developments, new meaningful partnerships, and, like ripples made by even the smallest stones, leverage to reach deeper and further into rural and underserved communities. ■

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NISE Network welcomes museums and science centers of all sizes to join our community!
Learn more at nisenet.org.

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