

## **A Passion for Science: How Small Museums Can Leverage Resources**

*Can an intimate, informal museum find happiness with an ivy-clad institution of higher learning? Yes, if the two share a passion for science communication. In this article, three small U.S. science centers describe how their talents and flexibility have won them long-term partnerships with academia.*

### **The Testing Ground – SciTech Collaborations with the University of Illinois at Chicago and the University of Chicago**

By Ronen Mir, SciTech Hands On Museum

Scientists in universities often develop models of science communication that they would like to try out in real-world situations. Science centers, with their wide diversity of visitors, are an ideal venue for testing and implementing such new technologies and programs quickly and at relatively low budgets.

Technology testing has been the focus of a collaboration between SciTech Hands On Museum, in Aurora, Illinois, and the University of Illinois at Chicago (UIC). UIC is using the museum to test and evaluate the Geowall Virtual Reality (VR) learning lab, a technology currently used for undergraduate geology studies ([www.geowall.org](http://www.geowall.org)). The first prototype was established at the museum in the summer of 2002 with equipment on loan from UIC's Electronic Visualization Laboratory.

SciTech's 15-minute VR sessions are conducted by a trained museum explainer. Models available for viewing range from an ant, a bee, and a deep-sea angler fish to the workings of the human heart to the distribution of earthquakes on Earth, our solar system, and a journey through the universe. Each session includes an explanation of the VR technology, an opportunity for visitors to manipulate the 3-D models, and commentary on the models seen. The explainer also answers questions and conducts an informal evaluation of the experience.

Since the Geowall has been up and running, the VR lab has had over 4,000 visitors, in a fairly even mix of adults and children. The most popular application, according to one explainer, is the virtual heart: "It gives them a real sense of what it looks like and how it works." The earthquake model is a favorite of teachers, who praise its clear presentation of major fault lines.

A second collaboration at SciTech focuses on science programming—specifically, the presentation of current science research. University of Chicago (UC) physics professor Leo Kadanoff approached the museum in early 2003 about developing a program that could train graduate students in science communication. He picked SciTech, Kadanoff says, because the museum constructs the majority of its own exhibits and he thought staff would be able to help students implement their ideas. Three months later, the partners launched SCOPE (SciTech Chicago Outreach Pilot Exploration, [mps.uchicago.edu](http://mps.uchicago.edu)) with \$607,000 in funding from the National Science Foundation (#0324457).

The 12 graduate students who participate in SCOPE each year come from the UC departments of physics, computer science, anthropology, and social sciences. They are divided into two focus groups: Environment/Materials Science and Cosmology. Training

is jointly conducted by university-appointed “coaches”—scientists who have experience in hands-on exhibits design—and SciTech’s exhibits, education, visitors services and management teams.

At the museum, participants work on exhibit research and design, exhibit prototyping, evaluation of exhibits, signage, and development of VR educational programs using the UIC Geowall setup. They also visit other science and natural history museums in Chicago. Their final challenge is to design their own projects for SciTech’s visitors.

The first focus groups implemented an exhibit on “Sand Castle Science” and a VR Cosmology program, “Journey Through the Universe.” More recently, groups have developed the *Wild World of Sand* exhibition, with four interactive exhibits, and additional VR Cosmology programs using data collected by the Sloan Digital Sky Survey, the most extensive current mapping of the universe.

The coupling of university scientists with graduate students allows the program to cover both cutting-edge science and accurate fundamental science. The coach acts as a “guide on the side,” encouraging students to generate ideas and appreciate the different talents that everyone brings to the table. As one participant comments, “It helps that not everyone has the same expertise.” The program has demonstrated that it can prepare confident science communicators; several SCOPE graduates are now employed in Chicago area museums.

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