NISE Net – Nanoscale Informal Science Education Network

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The Museum of Science, the Exploratorium, and the Science Museum of Minnesota have joined together to lead a national Nanoscale Informal Science Education Network, in order to:

- Research, develop, implement, and disseminate educational products and experiences that inform, inspire, and engage public, youth, and professional audiences in nanoscale science, engineering, and technology, and their societal implications.
- Create a sustainable service-oriented infrastructure that can nurture ongoing professional development and innovation in nanoscale informal science education and also grow and adapt to reach new audiences in collaboration with new partners.
- Build lasting bridges between research institutions and their communities through museum and research center collaborations focused on enhancing public engagement with research.

At its launch in October of 2005, the Network included ten additional institutional subcontracted working partners, as well as over 35 advisors and thinking partners. To achieve the intended overall Network impacts, the three core partners have organized subgroups within the Network around coordinated strands of work that are focused on developing:

- the Network itself, a flexible and sustainable structure for the ongoing development and dissemination of nanoscale informal science education across a broad range of institutions;
- a Visualization Lab to explore the challenge of communicating qualities of the nanoscale;
- a Network Media infrastructure for the production and dissemination of a/v media to engage the public in nanoscale science and engineering in exhibits, public spaces and on the Web;
- Forums for dialogue and deliberation on nanotechnology and its societal and environmental implications for adults and teens;
- a Public Website to deliver educational nano media and links to broader resources;
- a Professional Resource Center website to support Network development and sharing of knowledge, products and programs;
- a suite of Exhibits and Programs to raise the awareness and engagement of the science center visiting public in connection with nanoscale science, engineering, and technology;
- concepts for Immersive Environments, such as 3-D digital cinema, live theater, object theaters, video caves, or planetariums;
- Professional Development opportunities for informal science educators, research center outreach educators, and science and engineering graduate students;
- An Annual Meeting of network participants and additional members of research, formal and informal education organizations to share knowledge and build community; and
- Research and Evaluation to guide development and dissemination of best practices in nanoscale informal science education.

OUTCOMES OF THE FIRST YEAR OF WORK

Cross-institutional working groups began work in year 1 on all the deliverables identified above. The effort was launched with a meeting, held in November 2005, attended by 125 people drawn

mostly from informal science education institutions and university research centers. A similar meeting was held in November 2006 with 150 participants. In between these large meetings the NISE Net PI group has met weekly by phone and a variety of working group workshops, charettes and conference calls have rapidly launched the work of the Network.

Multimedia Research conducted a front-end literature review and analysis to inform the development of the Network's educational products and experiences. Portions of these reports have been published on www.informallearning.org and in the journal *Informal Learning Review*.

- The Viz Lab team, led by the Exploratorium, includes the Museum of Life and Science in North Carolina, Main Street Science at Cornell University, the Envision Center at Purdue University, and the New York Hall of Science. This team conducted research, developed visualization activities involving artists and scientists, explored using a haptic interface to engage visitors in the concept of atomic force microscopy, and developed community events.
- The Forum team, led by the Museum of Science, includes the Oregon Museum of Science and Industry, the Museum of Life and Science, the Exploratorium, and the Science Museum of Minnesota. In year 1,this team, along with scientists in our respective communities, developed and presented 15 Forum programs to engage the public in dialogue and deliberation around societal impacts of nanotechnology.
- The Exhibit and Program team, led by the Science Museum of Minnesota, includes: Forth Worth Museum of Science and History, Oregon Museum of Science and Industry, University of Wisconsin at Madison Interdisciplinary Education Group, the Sciencenter at Ithaca, Museum of Life and Science, New York Hall of Science, the Museum of Science, and the Exploratorium. In year 1,this team, working with over 75 scientists and educators, produced over 35 exhibit and program prototypes and immersive media storyboards.
- The Network Media team, led by the Museum of Science, includes the Exploratorium, the Science Museum of Minnesota, and the Science Museum in London. In year 1, this group surveyed existing nano media and producers, developed a nano media finder tool, researched a variety of prior approaches to producing and networking digital content for public displays, and developed a draft of detailed specs for guiding the development of NISE Net Media
- The Professional Development team, led by Barry Kluger-Bell, created and conducted the first Nanoscale Educational Outreach program for graduate students and education directors associated with research centers. Participants were drawn from thirteen universities.
- The Materials Research Society developed an MRS-NISE Net volunteer scientist database and initial set of volunteers to populate it and help NISE Net partners with their work.
- Teams led by the Exploratorium, developed a prototype Professional Resource Center website to provide professionals with access to the variety of nanoscale educational resources developed the network; and conducted research and began developing the content management system for a Public Website.
- The Research and Evaluation team, led by the Exploratorium,, coordinated the work of evaluators at multiple institutions to insure that formative evaluation is in place for all project deliverables to provide feedback for improvement during the development cycles.

References)

For further information about this project go to http://www.nisenet.org or email **nisenet@mos.org**