

What is Living Laboratory[®]?

Living Laboratory is an educational on-site research program in which scientist collaborators recruit participants and conduct their studies at their local museum. In the Living Laboratory model, informal science educators train collaborating researchers (in disciplines including developmental psychology, cognitive science, educational psychology, cognitive neuroscience, social psychology, and related fields) to effectively communicate the questions and methods of their work to parents and other caregivers. By inviting museum visitors to participate in on-going studies and one-on-one conversations with researchers, Living Laboratory offers the public direct access to science as it happens.

Impact on Museum Visitors

Thousands of visitors at the Museum of Science, Boston have interacted with scientists in the early childhood exhibition (the *Discovery Center*). By observing and contributing to cognitive research studies, visitors learn how scientists answer research questions in a variety of topics, including social reasoning, math cognition, spatial reasoning, causal learning, and emotion recognition.



Since 2005, tens of thousands of visitors have spoken with Living Laboratory researchers. At the Museum of Science, Boston alone:

- 31,800+ visitors were eligible participants for ongoing studies.
- Another 36,000+ tried out study methods for fun, and spoke with scientists about their work.
- More than 600 researchers have been trained to interpret their research for the public.
- Hundreds of museum educators have directly accessed current research and applied it to their work with children and caregivers.

Evaluation has found that observing children participate in active research studies increases adult visitors' awareness of and interest in child development as an experimental science. Further, one-on-one conversations with scientists about the questions and methods of the research increase adult visitors' understanding of the process of scientific discovery. By directly engaging museum visitors in scientists' efforts to learn more about children's development, adult learners gain access to science and scientists, increasing scientific literacy and fostering science communication on multiple levels.

Impact on Researchers

Researchers gain access to a large and diverse pool of participants for their studies.

- Researchers can recruit an average of 2-3 participants per hour (in addition to speaking with non-participant visitors) – this allows rapid piloting of new studies and increased efficiency in data collection.
- The results from Living Laboratory studies run in the *Discovery Center* have been presented in peer-reviewed journals, and at national and international conferences.
 - 50+ research articles published in peer-reviewed journals
 - More than 200 conference presentations and posters since 2006



Researchers receive training and experience educating the public about their work.

- Participating scientists attend training sessions on research interpretation in a museum setting.
- Museum staff and volunteers listen to researchers' explanations of their work and provide ongoing feedback to help researchers present their work to the public in an accessible way.

Impact on Museum Educators

Museum staff and volunteers learn about current research topics and methods by interacting with researchers.

- Museum educators speak with scientists every day on the exhibit floor, receiving updates about researchers' work and providing science communication feedback to research assistants.
- Researchers work with the museum to offer professional development to staff/volunteers throughout the institution; these professional development opportunities can take a variety of formats (examples include: briefings, staff trainings, and morning meetings).

Interactive museum activities, inspired by the ongoing research, have been developed for use by museum staff and visitors of all ages, including:

- Museum activities include: self-serve activity boxes for caregivers, facilitated hands-on activities, and stand-alone exhibit components.
- Activities address a variety of child development topics, including: cause-and-effect learning, infant vision, social reasoning, sharing, and the development of science process skills.

The National Living Lab Initiative

With support from the National Science Foundation (DRL-AISL #1113648), the National Living Lab Initiative assists researchers and informal science educators in collaboration efforts that foster public awareness, engagement and understanding of the scientific study of children's learning and development.

Parents, teachers and other adult caregivers are interested in the science of child development, but this topic is rarely presented in museums and the methods used to study child behavior remain largely a mystery to both public and professional museum audiences. Through participation in active research studies, families can learn about current topics and methods in child development research and by hosting on-site research activities, museums can gain access to current research that can inform their daily work. Scientists who work with informal educators improve their communication skills with the lay public and gain access to a wide a diverse pool of participants.

The national project team supports professional participants in establishing/improving collaborative programs in a variety of ways:

- Living Laboratory "hub sites" (at the Boston Museum of Science, Maryland Science Center, Madison Children's Museum, or Oregon Museum of Science & Industry) offer scientists and museum educators opportunities to see research and professional development in action.
- A *Living Laboratory Toolkit* assists museums and academic institutions to establish collaborative programs. To date, more than 350 museums and research institutions have accessed the toolkit through the project's virtual hub and regional events for professionals.
- The *Living Laboratory community* has grown to include more than 700 members, representing 48 US states, 3 Canadian provinces and international members in Europe, Israel, Australia, and Asia.



For more information: Visit us on the web (www.livinglab.org) or contact your regional Hub leader:

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