



Fast Facts

- The maker movement is a global community of inventors, designers, engineers, artists, programmers, hackers, tinkerers, craftsmen, and DIY'ers. It emphasizes learning by doing that is informal, self-directed, iterative, and collaborative.
- Since 2011, IMLS has invested over \$10 million in learning through making in museums and libraries.
- Museums and libraries of all types are engaging their communities in maker-based educational experiences.
- Across the federal government, there is growing recognition of the importance of making to a competitive workforce and an engaged citizenry.
- The New Media Consortium's *Horizon Report: 2016 Museum Edition*, recognized makerspaces as an "important development in educational technology for museum education and interpretation" and identified the time-to-adoption as one year or less.
- Since 2015, IMLS has cohosted the Capitol Hill Maker Faire in collaboration with the Congressional Maker Caucus to further educate policymakers about the maker movement.



IMLS Support for Learning Through Making

Museums and libraries have long been recognized as community leaders in providing engaging participatory learning experiences. IMLS investment in making includes support for a variety of learning spaces in libraries and museums that foster innovation and experimentation through design thinking and project-based learning for people of all ages. IMLS also funds important work to advance research and promising practices for makerspaces and maker programming nationwide.

Creating Spaces for Making and Learning

With support from IMLS and the MacArthur Foundation, 24 museums and libraries received grants through the Learning Labs in Libraries and Museums program to create spaces where teens can use digital and traditional media to develop 21st century skills and follow their passions. Learning labs were placed within makerspaces at the **New York Hall of Science** and the **Oregon Museum of Science and Industry**, creating teen-specific programs around tinkering, building, and creating.

Additionally, institutions like **Howard County Library in Maryland** and the **Free Library of Philadelphia**, were inspired by their early work with the Learning Labs program and sought IMLS support to extend their work to additional libraries in their systems.

History museums like **Conner Prairie** in Indiana and the **Museum of History and Industry** in Seattle are connecting their history content with STEM topics through makerspaces focusing on crafts, industry, and innovation. The **California Indian Museum and Cultural Center** is combining its historical lens with maker practices to focus on STEM topics incorporating Native and Western perspectives. In the children's museum sector, experiences such as MakeShop at the **Children's Museum of Pittsburgh**; Young Makers at the **Hands On Children's Museum** in Olympia, Washington; and the Prop Shop at the **Winston-Salem Children's Museum**, fuse old and new technologies, storytelling, and STEM into safe and exciting spaces for tinkering and learning.

Developing Promising Practices through Research and Evaluation

The **Children's Museum of Pittsburgh** and IMLS are working on a project to provide museums and libraries with a framework to support learning in both existing and emerging makerspaces. The project's website will host an online publication, makerspace studies, research reports, and tools to assist museum and library professionals in engaging with the framework. The **University of Wisconsin** is conducting research to better understand the production-oriented approach to literacy and learning that takes place in maker-focused programs.

Offering Professional Development and Resources

Libraries and museums are involved in a field-wide effort to build the capacity of museum and library professionals, K-12 teachers, and out-of-school educators to use the maker model to its fullest potential. IMLS-funded work includes a partnership between the **Thinkery** and **Austin Public Library** to build the capacity of local librarians to lead low-income students in STEAM learning by providing hand-on experiences using modern technologies. **Arizona State University** is training librarians to create and run innovation, entrepreneurship, and collaboration spaces and the **University of Michigan's School of Information** is taking maker knowledge on the road to share with rural

libraries and their communities. Outside the museum and library setting, the **San Antonio Children's Museum** is training elementary teachers from low performing public schools in three surrounding counties in inquiry-based STEM education using their makerspace workshop to augment the classroom curriculum. The **Exploratorium** of San Francisco, CA worked with IMLS and the U.S. Department of Education, pairing museums in five states with surrounding 21st Century Community Learning Centers to provide STEM-rich making activities in after-school settings, including coordinating professional development and the development of a six-week curriculum. **Chicago Public Library** has produced a how-to guide for planning, designing, and piloting a fabrication lab and **Los Angeles Public Library** is providing librarians with professional development focused on STEAM (STEM with the inclusion of the arts) topics including making. Resource development is happening all across the field.

State Library Administrative Agencies Join the Movement

With IMLS Grants to States funding, the **Idaho Commission for Libraries** and the **New Mexico State Library** are expanding access to maker spaces across their states. Idaho established the Make It at the Library project to support the implementation of makerspaces in more than 20 public and school libraries across the state. New Mexico launched the Makerstate Initiative to help local public libraries promote meaningful engagement with technology through maker curricula, tools, and events. A robust group of partners has brought maker education to 25 community libraries throughout New Mexico. As least one-third of U.S. States have used IMLS Grants to States funds to support maker programming and equipment.

About IMLS

The Institute of Museum and Library Services is the primary source of federal support for the nation's 123,000 libraries and 35,000 museums. Through grant making, policy development, and research, we help communities and individuals thrive through broad public access to knowledge, cultural heritage, and lifelong learning. To learn more about IMLS, please visit www.imls.gov