



Museums for America

Sample Application MA-10-16-0340-16

Project Category: Learning Experiences

Funding Level: \$25,001-\$150,000

Oregon Museum of Science and Industry (OMSI)

Amount awarded by IMLS:	\$149,820
Amount of cost share:	\$184,693

Attached are the following components excerpted from the original application.

- Abstract
- Narrative
- Schedule of Completion

Please note that the instructions for preparing narratives for FY2017 applications differ from those that guided the preparation of previous applications. Be sure to use the narrative instructions in the FY2017 Notice of Funding Opportunity for the grant program and project category to which you are applying.

Oregon Museum of Science and Industry: Play Lab

Abstract

The Oregon Museum of Science and Industry (OMSI) is requesting funds from IMLS to create Play Lab, a series of three pop-up, experimental play experiences (called “adventures”) that support (1) young children’s (ages 0-6) need to learn through open-ended play, (2) caregivers’ need to understand and facilitate their children’s development, and (3) OMSI’s need to provide more accessible, meaningful experiences for families with young children. These needs were identified through an evidence-based literature review, OMSI surveys/focus groups with local caregivers, and OMSI’s recently completed five-year strategic planning process.

Each Play Lab adventure will be developed by OMSI in collaboration with a child development expert from Lewis & Clark College to focus on a specific aspect of play and its role in a child's development. OMSI staff and the researcher will also create complementary interpretive materials to encourage caregivers to observe their children playing and to learn more about the value of play. To deepen the caregivers’ learning, OMSI staff and researchers will host "Play Lab Groups" for OMSI members and for underserved audiences participating in parent groups organized by the social service organization Impact NW.

Play Lab is designed to benefit multiple stakeholders including caregivers, children, OMSI staff, and partner organizations. As the primary focus of this project, only the impacts on caregivers will be investigated during formal summative evaluation activities. Secondary results for children, OMSI, and partners will be captured through professional inquiry and reflection activities.

Our *intended impacts for caregivers* are that they will:

1. Gain awareness and understanding of the critical role of play to the development of their child(ren). (Awareness, Knowledge, or Understanding)
2. Value the role of play in the development of their child (Attitude)
3. Feel comfortable using science-based information to inform their parenting choices. (Attitude & Behavior)
4. Value OMSI as a place to connect to research-based resources, each other, and their children. (Attitude)

The two-year project will start with a two-month period of *project initiation*. The team will then start the series of three adventures, each taking six months and including (1) front-end planning and inquiry, (2) activity development and rapid prototyping, (3) stakeholder reflection, and (4) summative evaluation. During the last three months of the project, OMSI will capture final reflections from stakeholders, complete the project reports, and disseminate findings.

1. Statement of Need

A. What do you propose to do?

OMSI is requesting funds from IMLS to create Play Lab, a series of three pop-up, experimental play experiences (called “adventures”) that support (1) young children’s (ages 0-6) need to learn through open-ended play, (2) caregivers’ need to understand and facilitate their children’s development, and (3) OMSI’s need to provide more accessible, meaningful experiences for families with young children. Each Play Lab adventure will be developed by OMSI in collaboration with a different child development expert to create an engaging experience that highlights a specific aspect of play and its role in a child’s development. Interpretive materials will encourage caregivers to observe their children playing and to learn more about the highlighted type of play. To complement and deepen this learning, OMSI staff and researchers will host “Play Lab Groups” for OMSI members and for underserved audiences participating in parent groups organized by community partner Impact NW. Play Lab Groups will focus on the benefits of play and how parents can support their child’s development.

Play Lab is a crucial first step in OMSI’s overarching strategic initiative to invest in Early Childhood Experiences (ECE) that increase OMSI’s value for families and promote inclusion of underserved audiences. Play Lab findings related to family needs, popular play experiences, and community partnerships will also inform planning for placemaking and property development included in the organization’s 20-year vision. (See the included Strategic Plan Summary for details.)

B. What need, problem, or challenge will your project address and how was it identified?

Young children (ages 0-6) need developmentally-appropriate play opportunities in order to thrive socially, emotionally, academically, and physically. Research on early intervention programs shows that play-based experiences in the first few years of childhood result in significant increases in IQ, educational attainment, employment rates, and wages throughout life. These benefits are particularly important for children living in poverty and/or experiencing other risk factors (Kellock 2015, World Bank 2015, Gertler et al 2013, Campbell et al. 2011)¹. Unfortunately, many children in the US today have significantly less time for free play than forty years ago due to changes in family life and parents’ and educators’ increased attention to academics and enrichment activities (Ginsberg 2007).

One of the most critical outcomes of children’s play is “self-regulation.” Self-regulation is the ability to regulate one’s thinking, emotions, and behavior to respond appropriately to the environment (Florez 2011). Self-regulation is difficult to teach, but children can learn this skill through the social and imaginative aspects of play (Kellock 2015). Early development of self-regulation is crucial because it precedes social, cognitive, and interpersonal skills that have positive effects far into adulthood (Berk L & Myers A 2013, Gray P 2008, Bodrova E & Leong D, 2008). Research studies have also positively linked early play experiences with children’s language, literacy, and numeracy development, creativity, and ingenuity (Kellock 2015, White 2012). Consequently, “If we are to equip children with the skills to thrive in the rapidly changing world around them, meaningful early play experiences are essential” (Kellock 2015).

Providing evidence-based resources to *caregivers* related to play is one of the most effective mechanisms for ensuring a child’s wellbeing and long-term success. Interventions with caregivers are particularly valuable when designed to emphasize the importance of play and encourage more playful interaction with their children. These interventions can shift parental approaches and beliefs in a way that assists the next generation escape poverty and improve long-term economic status (World Bank 2015, Gertler et al. 2013, White 2012).

¹ References cited in the narrative are listed in the Evaluation Plan.

Oregon Museum of Science and Industry: Play Lab

The purpose of Play Lab is to leverage our strengths as a science-based, informal learning environment to support both children and their caregivers. As IMLS has outlined in its document, *Growing Young Minds: How Museums and Libraries Create Lifelong Learners* (2013), “The experiences, resources, and interactions provided by libraries and museums build brains and fuel a love of learning. Parents know this and flock to museums and libraries not only to support their child’s learning but also to bolster their important role as their child’s first teacher.” Similarly, the Oregon State Early Learning Hub and our partners at Impact NW (a social services agency with Early Childhood & Family Services to support families impacted by poverty, abuse, neglect, malnutrition, and delayed development) share our goal of supporting caregivers as their children's first teachers and view play and caregiver interactions as integral to positive and healthy child development.

In addition to research, Play Lab integrates the needs and desires of local families. The findings of four surveys (2011, 2012, and two in 2015), reaching over 2300 member and non-member families, informed OMSI's overarching ECE vision and this proposal. The majority of OMSI's member households who participated in the 2015 surveys have children under the age of seven, and 67% of the young children are three or under. Survey findings also indicate that most OMSI members with children under seven only visit Science Playground, which regularly reaches capacity at busy times. Through the surveys, many members requested more opportunities for children to engage in physical play, which is currently discouraged in Science Playground for safety reasons. OMSI staff also conducted focus groups with caregivers (parents and childcare providers, members and non-members) at OMSI and at a local community center for families with young children. Participants were directly asked to share their ideas, interests, and needs to inform the direction of ECE at OMSI. The vast majority of parents advocated for a year-round play space where their children could engage in more active play. Parents were also very interested in programs or materials that would allow them to better understand and support their child’s development and learning. Therefore, Play Lab addresses the requests of OMSI's core audience--families with small children--for more active, early learning opportunities, while also providing a unique science-based experience for caregivers.

C. Who or what will benefit from your project?

Both young children (ages 0-6) and their caregivers will benefit from Play Lab’s developmentally-appropriate, open-ended, active play experiences and the complementary interpretive materials/programs. Caregivers will include three groups: 1) general admission visitors who engage primarily with unfacilitated interpretive materials or informal activities with OMSI staff or researcher partners, 2) member families who participate in formal Play Lab Groups with research partners, and 3) underserved caregivers from Impact NW who participate in feedback sessions, attend Play Lab Groups, and receive free passes to visit the museum on their own.

OMSI staff will benefit by learning from child development experts, local social service programs, national advisors, and the families we serve. OMSI will also benefit from strengthening relationships with key audiences, community partners, and researchers. Impact NW will benefit by being able to offer new resources, experiences, and science-based expertise with their clients. Research partners will benefit by 1) practicing their science communication skills in new settings, 2) sharing their research with diverse audiences, and 3) being able to provide relevant, exciting internship opportunities to their students (more detail included in section 3D).

D. How will your project advance your institution’s strategic plan?

In June 2015, OMSI adopted a five-year strategic plan to chart the first steps toward a new 20-Year Vision (2015 to 2035). With valuable input from the community, OMSI outlined strategic priorities for investment. “Expanding early learning experiences” was identified as one of five key strategies designed to elevate our guest experience and create pathways to deeper learning at the museum and through regional partnerships and

outreach. The Play Lab project will be the crucial first step in realizing this strategic initiative by allowing OMSI to (1) Increase, diversify, and deepen new audience participation; (2) Drive repeat visitation and membership by providing greater value to families with young children, which is critical for OMSI's financial sustainability and educational mission; (3) Reinforce OMSI's unique value to local audiences by creating scientifically-based learning experiences for children and caregivers; (4) Build enduring community partnerships with researchers and groups serving underserved audiences; (5) Allow OMSI to prototype learning experiences and interpretive materials that can be integrated into multiple areas of the museum; and (6) Allow OMSI to test play experiences that will inform long-term planning for the museum campus and OMSI District.

E. How will your project address the goals of the IMLS MFA program?

Museums for America grants support projects that "strengthen the ability of an individual museum to serve its public." Play Lab is closely aligned with this goal, because the project's purpose is to diversify and deepen experiences for a core segment of OMSI's community: families with young children. The project's deliverables and impacts stem directly from research on the needs of young children and caregivers as well as the input of numerous community organizations and families. Play Lab allows the museum to be more than just a great place for children to play and learn about science--it becomes a place for caregivers to use science to see the value of their child's play in all aspects of learning and development.

2. Impact

A. Choose one or more Performance Measure Statement(s) appropriate for your project and describe how you will collect and report the corresponding data.

The relevant Performance Goal for the project is *Learning: develop and provide inclusive and accessible learning opportunities*. The relevant Performance Measure Statements for caregivers include: 1) *My understanding has increased as a result of this program/training*; 2) *My interest in this subject has increased as a result of this program/training*. OMSI's internal evaluation team will use two data collection activities to collect corresponding data from caregivers participating in Play Lab adventures. After observing caregivers' interactions with a researcher, OMSI staff, and/or interpretive materials, an evaluator will conduct a brief semi-structured interview with the observed caregiver. The interview will include the Performance Measure Statements and other questions designed to contextualize observational data. The second approach will collect corresponding Performance Measure data from OMSI members and Impact NW Play Lab Group participants via a post-survey administered after Play Lab Group events. These two approaches will be consistently implemented during the final two months of all three proposed Play Lab adventures. During this process, OMSI staff will document the number of total responses, number of responses per answer option, and number of non-responses. Throughout the project's implementation, OMSI volunteers and staff will also document Play Lab visitation rates and Play Lab Group participation rates.

B. Describe your project's intended results.

Play Lab is designed to benefit multiple stakeholders including caregivers, children, OMSI staff, and partner organizations. As the primary focus of this project, only the impacts on caregivers will be investigated during formal summative evaluation activities. Secondary results for children, OMSI, and partners will be captured less formally through professional inquiry and reflection activities (see 3A or the included Evaluation Plan for details). However, as successful Play Lab strategies are permanently integrated into the museum experience, the results on these audiences represent areas for future research.

The intended results of the Play Lab project for participating caregivers include:

1. Caregivers will understand the value of play and consider it critical to the development of their child(ren).
2. Caregivers will feel comfortable using science-based information to inform parenting choices.

3. Caregivers will see OMSI as a valuable, accessible place to connect to research-based resources, each other, and their children.

The intended results of the Play Lab project for participating *families* include:

1. Children will have engaging, fun, active play experiences.
2. Families will have happier, healthier children who are prepared for academic and social success because caregivers are better equipped to provide developmentally-appropriate, play-based experiences.

The intended results for *OMSI and its partners* include:

1. Museum staff will learn how to better engage underserved families with young children.
2. Museum staff will learn how to effectively facilitate conversations and create interpretive materials about scientifically-informed child development/learning topics for caregivers.
3. OMSI will identify successful play experiences and effective interpretive materials for integration into existing museum spaces and use the resulting lessons learned to inform long-term site planning.
4. OMSI will strengthen partnerships with local institutions that research and support early learning.
5. Audience partners will have new mechanisms for supporting the families they serve.
6. Research partners will have new mechanisms to share their research with the public and provide learning experiences for their students through Play Lab internships.

C. How will knowledge, skills, behaviors, and/or attitudes of audiences change as a result of your project?

As described above, the primary target audience for Play Lab is *caregivers* of young children (ages 0-6). Our *intended impacts* are that participating caregivers will:

1. Gain awareness and understanding of the critical role of play to the development of their child(ren). (Awareness, Knowledge, or Understanding)
2. Value the role of play in the development of their child (Attitude)
3. Feel comfortable using science-based information to inform their parenting choices. (Attitude & Behavior)
4. Value OMSI as a place to connect to research-based resources, each other, and their children. (Attitude)

D. What tangible products will result from your project?

The following products will result from the Play Lab project.

1. **Three Play Lab Adventures:** OMSI will implement and evaluate three new early childhood experiences over the course of two years. Each adventure will facilitate and interpret a different aspect of play that supports early learning/development. Play Lab concepts that are popular with families and deemed successful by reflective professional inquiry and/or summative evaluation activities will be integrated into existing museum spaces and inform plans for future development.
2. **Interpretive Materials for Caregivers:** OMSI will work closely with researchers to create and evaluate a variety of interpretive signage and print materials for caregivers that highlight and explain topics related to child development/learning. These materials will be used in Play Lab, and where useful and appropriate, repurposed for other areas of the museum and OMSI communications.
3. **Summative Evaluation Report:** At the end of the project, OMSI staff will create a summative evaluation report to document findings, inform future OMSI programs, and share with other institutions.
4. **Key Insights Summary:** OMSI staff will compile a summary of key findings from evaluation and reflective professional inquiry activities in a concise, engaging, visual format to share with audience members, partners, staff, and other organizations.

E. How will you sustain the benefit(s) of your project?

The explicit purpose of Play Lab is to inform the direction and implementation of new ECE exhibits and programming at OMSI. Successful adventures, interpretive materials, and programs will be integrated into the

museum in various places during the grant period and used for years beyond. Successful partnerships with research and audience organizations will also continue after the grant to allow OMSI to develop and implement effective evidence-based, early childhood experiences for diverse audiences now and into the future.

3. Project Design

A. What specific activities, including evaluation & performance measurements, will you carry out?

Play Lab emerges directly from OMSI's vision for early learning: "ECE at OMSI occurs in immersive, multisensory, family-centered environments that provide young children opportunities for meaningful, open-ended play which makes learning visible. By understanding play's value through interpretation and professional facilitation, caregivers can better serve as their child's first teacher." OMSI will realize this vision by collaborating with a different child development researcher for each of the three Play Lab adventures. The work will produce open-ended, play-centered activities that showcase key aspects of how play reflects and informs a child's development.

OMSI will also iteratively develop a variety of interpretive experiences for caregivers that complement the play activities including: (1) Short, scheduled "**Play Lab Groups**" where the researcher discusses the highlighted type of play. Three Play Lab Groups will be scheduled for each of the three adventures: two for the Impact NW caregiver group and one for OMSI members. (2) **Informal demonstrations** facilitated by the researcher and/or OMSI staff for "drop-in" visitors. The researcher will lead demonstrations twice per adventure. OMSI staff will facilitate programs 10-12 hours per week while the activities are on the floor. (3) **Written and graphic information** included in key locations and/or on handouts that interpret key topics.

OMSI will engage stakeholders throughout the project through professional inquiry activities, summative evaluation, and meetings with advisors, partners, and key audiences. The professional inquiry process will build on the team-based inquiry (TBI) model pioneered by the Nanoscale Informal Science Education Network (NISE Net). The TBI model engages the whole project team in identifying critical questions, gathering data, reflecting on lessons learned, and refining deliverables based on findings (Pattison, Cohn, & Kollman, 2014). (For more, see the Evaluation Plan or visit http://www.nisenet.org/catalog/tools_guides/team-based_inquiry_guide.) OMSI staff will also set up regular meetings with researchers and Impact NW to develop deliverables and build the partnerships. The OMSI team will hold advisory team teleconferences every six months to solicit input from national advisors (listed in section 3B) at the beginning and end of each adventure. Regular conversations with caregivers participating in Impact NW's parent groups will (1) ensure that their needs, insights, and desires inform the project and (2) discuss barriers to participating in OMSI experiences and ways to remove these barriers.

TBI and summative evaluation activities will be incorporated into each Play Lab adventure and include: (1) conducting front-end conversations with audiences at Impact NW parent meetings, OMSI member breakfasts, and in Science Playground with general visitors; (2) conducting rapid prototyping to iteratively develop, observe, and refine the play experience, Play Lab Group presentations, and interpretive materials; (3) holding post-visit feedback sessions at the Impact NW parent group; and (4) conducting a formal summative evaluation using observations, semi-structured interviews, and a post Play Lab Group survey. At the end of the project, OMSI will document findings in the summative evaluation report and key insights summary. (A complete Evaluation Plan is attached.)

In order to experiment with flexible, reproducible, creative experiences that could be integrated into various places in the museum, OMSI will focus on materials that are easy to acquire/make, update, and reuse. Identified materials include open-ended play sets (e.g. Blue Blocks), reusable built structures (e.g. platforms and stairs),

Oregon Museum of Science and Industry: Play Lab

durable authentic materials (e.g. tree stumps, kitchenware, etc.), and easy to collect reusable items (e.g. cardboard boxes, tires, etc.) OMSI's in-house design and fabrication teams will support the creation and installation of the play experiences/environments. For one round, OMSI and the research partner will collaborate with a local artist to create the activities. Partnering with an artist will allow OMSI to explore strategies for integrating new types of expertise, creativity, and approaches into the design process.

The concepts below are preliminary ideas for Play Lab adventures that highlight the value of play for caregivers, incorporate the expertise of research partners, and engage children using reusable play materials. Final adventures will be developed with in-depth audience, partner, and advisor input and may result in different concepts than the ones described below.

Round 1 will focus on social and emotional development with Dr. Jennifer LaBounty (Lewis and Clark College). Activities could include mechanisms for engaging children in role-play activities and caregiver/child co-play. Materials may include using a combination of Blue Blocks and authentic objects to create imaginative role-play spaces (e.g. kitchens, offices, forests, etc.)

Round 2 will focus on creativity and divergent thinking with Dr. Erik Nilsen (Lewis and Clark College). This experience would be developed in collaboration with an artist to use familiar materials in unexpected ways. For example, the artist and OMSI team might create a sea-themed water play area using pool noodles (foam tubes) and invite families to add to the adventure by making their own spraying sea creature,

Round 3 will focus on risk-taking with Dr. Todd Watson (Lewis and Clark College). The experience could use climbing structures and suspended tunnels made from transparent packing tape (similar to the ones at the Tulsa Children's Museum) to highlight the physical and emotional importance of taking risks for children.

To create engaging learning experiences for both parents and children, OMSI will draw from the extensive prior experience of the team and its partners, best-practices in the field, and relevant research. In particular, OMSI will build on experience and partnerships developed through the *Living Laboratory* (NSF 1113648) project bringing child development research into Science Playground. OMSI will also draw from the *Animal Secrets* (NSF 0229875) and *Design Zone* (NSF 0714634) exhibitions which created and evaluated interpretive materials intended for caregivers to support their child's learning. Similarly, Impact NW, will bring its expertise in working with underserved families to promote healthy child development. Advisors will share their experiences in creating play-based programs at other museums and institutions. Research partners and advisors will shape the activities and interpretation with their in-depth knowledge of the relevant research.

B. Who will plan, implement, and manage your project?

An experienced team at OMSI will develop Play Lab in collaboration with local partners and national advisors. Andrew Haight, Director of Guest Engagement, will act as Project Director overseeing the project vision, timeline, and budgets. Annie Douglass, Senior Educator of ECE, will lead content development and implementation. Kyrie Kellett, Senior Program and Partnership Developer, will support the development of content, partnerships, and interpretive materials. Nancy Stueber, President, will act as project sponsor directing alignment with strategic plans and cross-functional initiatives. Liz Rosino, Manager of Research, Evaluation, and Impacts at OMSI will oversee evaluation activities. Julie Houston, Director of Early Childhood and Family Services at Impact NW, will oversee involvement of caregivers and staff from their programs. Dr. Jennifer LaBounty, Dr. Erik Nilsen, and Dr. Todd Watson from Lewis and Clark College will act as research partners. Advisors Elizabeth Moreno at Playground Ideas, Cody Goldberg at Harper's Playground, Caren Walker, PhD, at the UCSD Department of Psychology, and Tracy Collins, Ed.D. bring expertise in children's learning and building creative play experiences for diverse audiences. (See the included List of Key Project Staff and Supporting Document 1 – Letters of Support and Résumés of External Partners and Advisors for more detail.)

C. When and in what sequence will your activities occur?

The two-year project will start with a two month period of *project initiation* to convene the team, collect front-end input from audiences, conduct literature research, complete contracts with partners, and clarify budgets and timelines. As described in 3A, the team will then start a series of three adventures each including (1) front-end planning and inquiry, (2) activity development and rapid prototyping, (3) stakeholder reflection, and (4) summative evaluation. During the last three months of the project, OMSI will capture final reflections from stakeholders, complete the project reports, and disseminate findings. (See Schedule of Completion for more detail.)

Key milestones and deliverables	Y1				Y2			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Initiation	■							
Adventure 1		■	■					
Adventure 2				■	■			
Adventure 3						■	■	
Final reporting and dissemination								■

D. What financial, personnel, and other resources will you need to carry out the activities?

The project will require funding to support OMSI personnel, purchase materials, and compensate partners/advisors. (See budget justification for details.) OMSI will also work with partners at Lewis & Clark College to identify two students per adventure to act as project interns. The interns will support development and staffing while gaining hands-on experience related to informal education and child development.

E. How will you track your progress toward achieving your intended results?

Internal evaluators from OMSI’s Engagement, Research, and Advancement division will help the team track project progress by guiding TBI studies and conducting formal summative evaluation data collection during each adventure. A brief description of the TBI and evaluation methods is included in 3A and the attached detailed Evaluation Plan.

F. How and with whom will you share your project’s results?

The results of the project will be shared in several ways. The evaluation report will be posted on the OMSI website and informalscience.org. The Key Insights Summary will be shared with all project stakeholders and with the wider informal education community through postings to relevant listserves (ASTC, ACM, AAM, Paul Orselli's blog, etc.) OMSI will also submit proposals to present key findings at ACM and/or ASTC conferences.

Oregon Museum of Science and Industry: Play Lab

Schedule of Completion

<i>Activity</i>	Oct 16	Nov 16	Dec 16	Jan 17	Feb 17	Mar 17	Apr 17	May 17	Jun 17	Jul 17	Aug 17	Sep 17	Oct 17	Nov 17	Dec 17	Jan 18	Feb 18	Mar 18	Apr 18	May 18	Jun 18	Jul 18	Aug 18	Sept 18	
<i>Project Initiation</i>																									
<i>Adventure 1</i>			 Planning			 Development & Prototyping																			
								 Delivery, Reflection & Summative Evaluation																	
<i>Adventure 2</i>										 Planning															
												 Development & Prototyping													
															 Delivery, Reflection & Summative Evaluation										
<i>Adventure 3</i>																 Planning									
<i>Reporting & Dissemination</i>																									