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BRAIN-BUILDING POWERHOUSES REPORT

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>> HELEN WECHSLER: I am Helen Wechsler. And we are pleased to have partnered with the Mind in the Making program of the Families and Work Institute to make this report possible. So IMLS has a long-standing involvement and commitment to early learning that mirrors the decades of work that museums and libraries have done. And we have invested over 8.5 million in projects since 2012. And several of the projects you will hear about this afternoon were funded in part by a competitive award from IMLS. We are also involved in several partnerships and initiatives focusing on children and families. Working with the build initiative we are striving to better integrate museums and libraries in to statewide early childhood systems. And a partnership between HHS and IMLS encourages collaboration between early childhood programs and to help meet the

educational needs. The Let's Move Museums and Gardens Initiative is part of the First Lady's let's move campaign and provides opportunities for children visiting museums and gardens to learn about healthy food choices. And finally with the campaign for grade level reading we issued a report called "Growing young minds, how museums and libraries create lifelong learners." And here is an image of that report.

So growing in young minds was developed in consultation with a task force which included government, civic leaders and funders and several members of that task force are on the webinar. It called upon policymakers and practitioners to fully use the capacity of museums and libraries to close the opportunity gap and to give children a strong beginning in learning, to develop a strong start for young children's learning. And No. 3 I want to point out, I got it there on the screen, talks about supporting development of executive functions and deeper learning skills. Brain-building powerhouses is a direct response and shines a light on the fantastic work that museums and libraries are doing in this area.

Now I'm going to turn the controls over to Andrea Camp and get out of the way so we can dive deeper in to this amazing report. Thanks a lot.

>> ANDREA CAMP: Thank you, Helen. We have come a long way since IMLS first joined the Families and Work Institute in 2003 for the first look at how libraries and museums can engage children in learning beginning at birth. That symposium report the 21st Century learner continuing begins with early learning funded with IMLS, the Civil Society Institute and organized by the Association of Children's Museums, the Association of Library Services for Young Children. And the Families and Work Institute began an important conversation that we are continuing and deepening today. As Helen pointed out ten years later in 2013 IMLS released Growing Young Minds. And as she also pointed out this report presented ten ways libraries and museums contribute to a child's learning. Today's report brain-building powerhouses, how libraries and museums can strengthen executive function life skills by Ellen Galinsky, the nation's foremost expert in linking brain research to children's learning and in particular executive function life skills builds upon the report Growing Young Minds and going deeper in to specifics under ways which libraries and museums strengthen those skills. Both reports underscore the role that the over 123,000 libraries and 35,000 museums play in the crucial infrastructure of informal community learning that shapes the learning life of every child.

In the past libraries and museums have too often untapped or disconnected resources and community efforts to support positive incomes for families and children. This is changing. Thanks a lot to the work of many of you on this call but also because of the growing body of evidence that points to the importance of engagement and community to learning. People are really beginning to understand that libraries and museums are critical links in providing seamless community support for the skills a child

needs to be successful in learning and a successful in life.

The report we are discussing today brain-building powerhouses helps to explain why and how. The report offers insights and tools for museums and libraries, on the ground experiences and most importantly the science to show how our institutions can scale up their capacity to contribute to the everywhere any time learning for America's children. To tell you more it is my honor to introduce you to the primary author of the report Ellen Galinsky, president of the Families and Work Institute. Ellen.

>> ELLEN GALINSKY: Thank you so much, Andrea. And it is my pleasure to be with you and you can hear that I'm in New York City. I don't know whether you can hear the fire engine in the background but that helps us with executive function skill because we have to focus amidst distractions. I'm going to be talking about a journey that I have been on for 15 years. I just saw that Nina O'Donnell joined the call and she was on this journey from the beginning with me. I set out to answer a question that came out of a study that I was doing of young people. We have done a series of studies that we call ask the children studies that look at the important issues that kids face growing up from children's own perspectives. And I found in getting -- doing the background research for a report on children and learning that kids weren't just dropping out of school, they were dropping out of learning. And that when I asked them about learning they were almost dead on arrival when they were older. And you contrast that to young children and you can't stop them from learning. They are trying to see, to taste, to touch, to experience everything and understand everything around them.

So the journey began by going out and looking at the best research. Not just by looking at it, by actually going in to the labs of researchers and filming what they found. And as I got more deeply in to this journey, I began to see that across academic disciplines, looking at cognitive science, neuroscience, developmental research, the development of literacy and numeracy and the STEM skills there was this term executive function that kept cropping up. So what does it mean? One of my board members always likes to say it signs a guy in a pin-striped suit bossing you around in your head. These are the skills that we bring together our capacity. And what I was seeing across these disciplines that these were very important predictors of whether children could thrive now or in the future. These are the words that Phil Zelazo, one of the lead researchers on executive function of a video I made of him last summer. He talks about how they are important predictors of not only doing well right but the likelihood of graduating from college, almost a 50% greater likelihood, SAT scores, economic achievement, health and well-being. And there is a study of all the children born in New Zealand and I have been there.

So it makes it pretty interesting. It follows these children from the time they were born until they were 32 years old. And they found that regardless

of people's socioeconomic status, and regardless of their IQ that the kids who had better executive function skills were healthier and wealthier at the age of 32. So educators have become interested in these because they do provide a better way of helping children thrive than IQ. So what are -- what exactly are these skills? This thing that sounds like an executive in a pin-striped suit bossing you around your head. They call on core brain processes that enable us to remember the information that we need to keep it in mind so that we can use it. To be able then to think flexibly, to adjust to whatever is happening to us so that we can take someone else's perspective or think flexibly and not to go on automatic, but to actually use what researchers call inhibitory control so we stay focused so we do what we need to do to achieve a goal. We had a video that we had linked to. So this -- this shows you in the words of people like Philip Zelazo and Adel Diamond what these skills are and what their research shows. I hope that you will keep track of this link and go take a look at it.

So let me explain then the seven skills that I found in my 15-year research journey. Truth in advertising, that gorgeous little child is my grandson. That's the joy of making your own powerpoint and put your children and grandchildren in them. The seven skills that I found most important and I am going to talk about a study that shows why they are important. Focus and self-control are the ability to pay attention, to resist distractions, to think flexibly, to remember what you need to know so that you can have all the information in hand that you need. And again not to go on auto pilot. For those of you who know the marshmallow experiment it is a great example. The marshmallow test is a great example of that skill. The kids had three marshmallows put in front of them and they were told if they could wait until the experimenter came back and it was 15 minutes in the original experiment, they could have two marshmallows, but if they couldn't wait they would ring the bell and she would come back away. Walter Mischel who did that experiment has followed these kids in to their 40s and found that the kids who could wait longer more like thrived in all kinds of way better, better SAT scores, all of those sorts of things. So that's a focus of self-control.

Perspective taking, last night I had the joy of hearing Larry Aber speak and he is a researcher who has looked at our ability to understand what other people are thinking and feeling. He studies conflict for a long time, aggression, school violence, the kind of things that we worry about. And he found that the efforts to improve perspective taking skills helped but just a little. I mean to improve reduced violence helped but just a little. So they began to look for the missing piece and found that the kids most likely to get in fights misinterpreted what other kids were thinking and feeling. They jumped to false conclusions without having enough information. So they evaluated a program that helped children learn to understand the characters in the books that we were reading thinking about what they were thinking

and feeling as a part of their literacy curriculum and found that, in fact, it reduced the violence in the schools, in the studies that they have done. Communicating is thinking about what you want to say. So it is using a focus of self-control to think about what you want to say and to also think about how it will be heard. It is built on literacy skills but not only and we have had a lot of discussion about the 30 million word gap lately. So some people have jumped to the conclusion that we just need to fill children's brains with more words because there is this presumed 30 million word gap for the kids entering school, but researchers have gone back to look at what makes the difference in literacy comparing low income children who are more likely to have this word gap. It is not the number of words. This is the research of Kathy -- they found it is conversation duets. It is the back and forth conversation where the adult builds on and extends what the child says and does that help children learn the skill of communicating. Very important to your work in museums and libraries. Making connections is also very important to your work. It is the symbolic relationship. It is the words are made up of a lot of sounds and letters stand for those sounds. And you put those letters together and they stand for ideas or concepts. The same with numbers representing quantities of things. So the written number represents the concept, and if you look at knowledge depends on those stand for or representational relationships. Making unusual connections is at the heart of creativity. Something that employers feel is necessary in the 21st Century when knowledge is advancing so rapidly. Philip Zelazo has done a wonderful experiment where he looks at kids. He gives kids pictures and he looks at whether they can go together in one way and then he asks them to think about another way they can go together. That's cognitive flexibility. And they are important as an executive function skill and also the basis of creativity.

Critical thinking, that's obviously necessary in a world where there is so much information. Laura Schultz has done a wonderful experiment looking at when kids pursue knowledge and she has found in her experiment by giving kids different boxes and in one situation like a Jack in the Box and with different levers on it. And in one part of the experiment the kids were told how the levers worked and the other they weren't told how they worked. And the kids who continued to pursue the question to try to figure it out were the kids who were not told. So helping children be more curious doesn't necessarily mean answering their questions right away. It means scaffolding and helping them answer their own questions. And scaffolding is so important to the development of executive function skills. Taking on challenges is the next skill and that's more than being resilient and dealing with conflict. But it is trying that next hard thing.

My mother would call it getting back on the horse or getting back on the bike after you fall off. Stephanie Carlson has just done new research where she has given kids a really difficult, boring task to do and has found that

there is a year's difference in kid's ability to pursue at something that's difficult if they step back and think of themselves in terms of someone they admire, like what would that man do. What would Dora the Explorer do and research on adults has found the same thing. We get a different perspective on it and are more likely to try that hard thing. The way we praise children matters. If we praise children for their personality, you are so smart and artistic, they are less likely to try those challenges, but if we praise them for process or we praise them for the strategies that they use or the effort that they make, they are more likely to try to do something that's hard. Try that next harder math problem.

And finally self-directed, engaged learning which is what we need people who are ongoing lifelong learners and there is research by Patricia Bauer that shows when children have the opportunity to have firsthand experience they are much more likely to learn something. Again something that you all do so wonderfully in museums and libraries. So in the five years since my book *Mind in the Making* was published we have looked at how to disseminate and we have developed modules from it. And I am going to tell you later in the call some other things we have developed, but we wanted to go out to the fields where most families and children connect. We have worked with schools through community schools starting with grade schools now in about 15, 16 parts of the country including several states. We have also worked with the health care system and museums and libraries were absolutely top of our list starting in that 2003 effort that we had. We are so convinced that you are central, particularly to reaching the families of youngest children. You are the major connector. These are the words of -- oops. Let me advance this. Andrea Camp, when we were talking about this report. It is everywhere all the time learning. And that's why to us museums and libraries are so critically important because you are the hub of the learning community, learning all over the country. And so we are thrilled to be able to look at what you are doing to promote these skills that help children thrive both now and in the future. You don't have to wait those 42 years or those 32 years or 20 years to see the impact of these skills. They help children right away. And they have lasting effects and can help them in the future. It is my pleasure now to turn to the Science Museum of Minnesota and to introduce Laurie Kleinbaum Fink, director of science programs, Science Museum of Minnesota.

>> LAURIE KLEINBAUM FINK: Thanks. And good afternoon, everyone. As I was reading through the brain-building powerhouse report and thinking about the key assets that promote -- the assets that the museums promote executive life skills I got excited thinking about all the things that the Science Museum of Minnesota is already doing to promote these life skills, but I am going to focus on a project that was highlighted in the report. One is the science of early childhood development and this is an NSF funded project that included an exhibition related programming that

was done in collaboration with the University of Minnesota and in fact, Dr. Philip David Zelazo who is quoted in these previous slides is one of our many project advisors that helped create the exhibition. The goal of the project was to bring research and evidence of that early childhood development to get everyone to understand where the current research is right now on early childhood brain development. And a lot of the things that Ellen was talking about shows up in the exhibition.

I'm going to highlight just three of the assets that museums have. First is family engagement. And there are several components in the exhibition that encourage responsive adult interaction and these are places that families can connect and explore. So, for example, families explore the human brain. And they can look at a real human adult brain as the whole organ and they can also look through a microscope or a video microscope. They see the whole perspective and a variety of different activities that demonstrate the brain's development at different stages. There are also areas where the museum visitors can learn how to write their name. And it is just to get people to remember or experience how hard it is to learn a new skill and relate that back to some of the struggles that young children have. A welcoming space to read together and put puzzles together and alongside there are graphics that outline the story telling. And we have another component that encourages museum visitors to use the three mountain test to test the skills of children that are in the group.

The next asset that museums have is the play and inquiry based learning. And as we know children can learn and practice executive life skills and play investigation. Highlight that in the exhibition and support the inference of play via videos and a variety of activities within the exhibition that just encourage play. So, for example, older children can experience the difference between cooperative play and antagonistic play. We have video demonstrations where adults can learn about skill errors and at that time period when the brain starts understanding the difference of skill. And then exhibition really stresses throughout many different components that fancy toys and computers really aren't needed for play, that everyday objects like the kitchen sinks and dishes work well for that open-ended play. And again we have videos demonstrating or modeling how that play would work between adult and child.

Finally I would like to talk about community partnerships. The Science Museum in Minnesota works towards becoming a more valuable place for more people and has made great strides to -- of bringing people who have never been to the museum before to the exhibition. And we used exhibition as a shared experience to spark conversations about the importance of early brain development and community right experiences, brought new visitors to the museum. We hosted citizen conferences where diverse groups of people came together, saw the exhibition, used a discussion starter and that sparked deliberation around how we can support our youngest citizens. And

then we hosted small group conversations with prearranged groups of people, came and visited the exhibition and followed that up by discussion about early childhood, brain development and some of those conversations were held in partnership with Ramsey County Head Start where the children would come and participate in age appropriate science activities while parents would visit the exhibition and have a separate conversation.

So both of those citizen conferences and small group conversations really sparked other new community groups. And there was a black men's early childhood conference. And then through the small group conversations we had ongoing training and early childhood professionals at local universities and had some team parent training that's been ongoing. And then multiple professional early childcare professional groups have come for professional development using the exhibition and some of the programming that we have developed. So now it is my pleasure to introduce Stephanie Terry, executive director, Children's Museum of Evansville.

>> STEPHANIE TERRY: Thank you. Thank you all for this opportunity to share with you some of the exciting work that is happening here in Evansville. We are proud of community school collaborations that have been established. EBSV received a Mind in the Making grant and is basically an overarching goal for the school cooperation. And the Mind in the Making partnership is to create a seamless birth to 8 system, to bring families and professionals together on a learning journey and to make the seven essential life skills a priority throughout the entire community. One of the first projects of Mind in the Making Evansville was a partnership with the Children's Museum of Evansville and after being brained in Mind in the Making skills and the program itself facilitators spent several days playing in the museum and investigating the exhibits. They discussed what they were learning from the exhibits and how they might play and what activities and interaction they would need to occur to reinforce what they had experienced in the museum. Not only did they play themselves but they observed children and families.

Facilitators determined the following about two of our exhibits, No. 1, seven essential skills were used in the various exhibits and natural partnership to begin to develop a shared language in our community as a whole. Two examples of facilitators investigated was quack factory and ready, set go. In the upper deck children needed to communicate with the each other and some of these physical skills were to send balls playing in the air towards a hanging target and they twist their bodies to get to an end of a vertical climb. Children use self-directed and engaged learning by using paddles to manipulate flow patterns through a water maze. In ready, set, go children are choosing which parts to add and adding pieces. Seven essential skills play a major role. You see children focus on which pieces to add, communicate with other children around them, make connections with what others are doing based on prior experience and lessons, think critical

about what to do next and take on the challenge of creating a car of their dreams.

So far from this small group activity Mind in the Making facilitators in September 2012 we partnered to host an educator's open house. And at this open house the same Mind in the Making facilitators developed educational workshops for educators and families to assist them in visualizing the seven essential skills and to provide tips to help them foster the skills at home or in their classroom. Specific exhibits were chosen and highlighted. This handout is broken in to three main sections. No. 1, a description of the exhibit. No. 2 what it looked like when children are using the skills. And three, tips to take home with you to further develop the use of the skills. These sheets were distributed to teachers as well as parents. In the future we will take steps to create a more permanent presence in the museum. Future projects include an updated map and Mind in the Making guide so that seven essential skills can help museum patrons out at the museum. They look to incorporate more innovative technologies throughout the museum and willing to offer educational workshops in partnership with one of our local hospitals. We will do everything in our power to continue creating meaningful partnerships like the one with Mind in the Making to develop the necessary skills that children need to proceed in this community. At this time I would like to introduce Kerry Salazar, teacher, researcher, Opal Charter School of the Portland Children's Museum.

>> KERRY SALAZAR: Thank you, Stephanie. Good afternoon, everyone. Like Stephanie said I work at the Portland Children's Museum. We view play not just as something fun but children engage when they come to the museum. Here we are working to shine light on the importance of play, to support adults in our own setting and community to understand the why behind the play and to see the value in learning within the play. We hope to avoid the notion that play is separate from learning or we need to interrupt children's play to teach a specific set of skills. Rather encourage to observe that play we might better understand the nurture that is taking place. Mind in the Making and the seven essential skills has provided us with critical language and research that supports us in our mission. One of the ways we are working to highlight the research is through documentation. Our hope is that every guest who walks through the door has access to the language that is accessible and friendly and that describes the executive function skills in a simple and direct way and shows the link between learning and play. We have three bookmarks to hand out to guests to take home that list the seven executive skills. And we also have documentation at different exhibits throughout the museum that show images of children playing in that exhibit. On these doc panels is also a QR code that links to a research guide for families that includes examples of ways to support each skill at home. And like I said that link on this page will -- that's the link that will take you directly to that resource guide.

Another way we are working to highlight this research is through classes offered at the Children's Museum. A pilot program was paid through a grant that allowed us to offer these classes for free to low income caregivers and families. Each class is held at the museum and begins with a facilitated discussion focusing on executive function skills while the children play with materials that the museum has provided in the room next door. They share pieces of research with caregivers and invites dialogue and stories from their own experiences around that particular skill. Participants consider or where they are already seeing that particular skill at home and invited to consider ways to support and extend that skill through play. Caregivers are invited to play in the museum with their children letting their children take the lead and looking for evidence of these skills in action. At the end of that time caregivers come back together to reflect on the experience and share what they noticed in relationship to the research that was shared at the beginning around the executive function life skills. Our experience has been that through observation around dialogue adults begin to view play through a new frame. On an evaluation form offering feedback for experience one participant wrote I couldn't believe how much I learned just from stepping back for a moment and watching. For us it seems seeking evidence and giving language for these executive function life skills, observing children playing gives new meaning and understanding while before seemed like simple play. Now I would like to introduce Kimberlee Kiehl.

>> KIMBERLEE KIEHL: Thanks. I appreciate it. We are happy to be here with you and to share some of the work that we are doing at SEEC here in Washington D.C. So we are going to talk just a little bit about some of the things that happen at our school. At SEEC we have 135 children who are two months of age through kindergarten and we have two schools located in two locations. 11 classrooms all together serving 135 children. We also have something called the Center for Innovation and Early Learning. And that's really the outreach arm of the work that we do here. They provide workshops for families on the weekends with caregivers and children. They also staff a two day a week program, part-time preschool program for caregivers and children. And they do professional development for us as well as professional development for others. And they have a new program coming up this fall geared towards helping adults have time in the museums called BYOB, which in this case means bring your own baby in a carrier. We use -- our classrooms use the 19 museums and the nine research facilities of the Smithsonian. Between play and these community visits we provide the children with the opportunity to explore things using an emergent curriculum. And we take the children out in to the community, most particularly in to the museum on a regular basis because we believe that learning happens best when it happens outside the walls of a classroom.

Our classrooms are staffed by a combination of early childhood educators, museum educators. We work closely with art and scientists from around the

Smithsonian as well as around the community to provide deep exploration for children on various subjects depending on what their interests are. We say here that we teach children to search for knowledge rather than be spoon-fed information. Our teachers and our CL staff are center for innovation staff read and discussed Mind in the Making and we have really created outcomes for children when they leave our school that are based on those seven skills as well as things like cognitive content, knowledge as well. So we could talk about all seven of these but just for time sake we are going to show you one example of things that might happen at the school. In this case we are going to talk about these skills making connections at SEEC. As you heard Ellen say making connections is really at the heart of creativity. And we believe curiosity is a big piece of that as well. We will show you some examples of what happens in a classroom as they go through and make connections.

In this case I am going to show you an example of making connections from an infant classroom. We believe that it is important to expose children to an idea in multiple ways and to help them really build connections by seeing the same idea in a variety of ways. So here is an example that we will walk through really quickly. First you can see on the left that the children have this opportunity to explore the real objects. We often will start with real objects. And we will also often take those objects right in to the museums with us. And so the children have the object when they are looking at something in the museum or have the experience in the museum. We talk a lot about careful looking. We use a lot with questions, what do you see. What do you notice. What do you want to know more about. Those kinds of questions as we work through things with children. With our youngest children we will often hear the teachers narrating and encouraging them to do the same as well as ask questions. On the right the top picture with a little boy is pointing to the lemon that he sees is a great example of that ability to develop careful looking and to start building connections between the real object and the thing that he is seeing in that print. And then we will often take the children out in to the museums to have an experience. And in this case you can see that while they are in the museum they also have an object with them. So they are still being able to make those connections. We talk a lot about multiple exposures and the importance of multiple exposures and by giving children multiple exposures to a variety of materials over time we know through research that helps them to build these connections and to really develop that skill that's so important as children but again as adults.

We work very hard to try and help them build connections between the things that they know and the things that they are just finding out about between the things in their own daily life and the worlds of others in the museums. And then really we believe that by doing that that also helps develop this ability for more flexible thinking as we go. And you will often

see us in the community using that as a classroom. Again because we feel like that helps children build connections. We feel like it is very important to get children out of the four walls of their classroom and in to the community around them to build these connections in real ways. So on the left you can see this is a piece of that study that they were doing about color with yellow where they had the lemons and the prints and the color and now they are linking these little pieces of yellow paper to the painting. And I love this picture because you can see one little girl pointing right at that painting as they are making those connections and these are very young babies. And on the right you can see that same kind of a print, looking at that print as you are actually looking at the tree and building those connections. So we believe that this is the way learning happens best and that there are a variety of ways that in this world that we live in between the formal world of education and the informal world of education that we can really bring those together to help develop those seven essential life skills.

And now I am happy to introduce Holly Henley, Deputy Director from the Arizona State library.

>> HOLLY HENLEY: Thank you, Kimberlee. The Arizona State library has a goal of having at least one person in every library in Arizona trained in early literacy and prepared to share information. In 2004 when we began this early literacy initiative we looked for tools that library staff and public and school libraries could use. Thanks to LSTA funding we began purchasing kits for the libraries and providing training in their youth. One of the components that was challenging to many librarians was how to present the information on infant brain development and they needed another tool. And that's when we found out about Brain Boxes. They were created by Dr. Jill Stamm, cofounder of New Directions Institute for Infant Brain Development. Brain Boxes consist of 12 boxes with the tools for parents and caregivers to do activities with children from birth to five and a half years old. And what is unique is not the books, the toys or puppets or CDs inside the boxes but the bilingual activities. There is a laminated card and tips for how that particular use relates to brain development and school readiness. The back of the card has extension activities. So, for example, if you have a Cat in the Hat puppet then the extension activity might say if you don't have a puppet like this at home, you can use a sock and make your own puppet.

So the great thing is that new directors are taking the research and they put it in to language that's easy to understand or for staff, for parents and for caregivers. So again thanks to LSTA the state library was able to purchase Brain Boxes for libraries that apply for them and that agreed to participate in the training. We were able to get them in to libraries in every county and then since 2008 with this initial purchase we have been trying to get more Brain Boxes in to additional sites every year. So staff training is a really essential critical piece of this success of libraries and museums with school readiness work. The state library contracts with the New Directions

Institute to do the training on brain development and specifically use of the Brain Boxes. So the Arizona library receives the Brain Boxes and the training use them in different ways. Some of the libraries circulate the Brain Boxes to families, to caregivers or to preschool. Some put them out for use in the library by adults and children. And some of use them in story times to model adult child interaction with books be it puppets and toys and other libraries have built programs around the Brain Boxes. And New Directions developed a manual for brain time model on the pattern of story time with parent tips. So when we look at the Brain Boxes and the executive function life skills there are a number of connections there and just some examples, in every Brain Box there is a placemat and use of the placemat encourages focus and self-control because the adult and the child are encouraged to put the puppet or the book or the toy on the placemat and then focus specifically on that one item at a time.

The tips on the activity card provide ideas for parents and caregivers to help children build their communication skills. An activity card for a puppet might suggest how to talk to your child with a puppet and then specific activities require children to do sorting and comparing and matching activities that require making connections and things like shape sorters and books. And then adult use questioning to look for the connections and the books.

And finally another example is adult-child interaction fosters the use of critical thinking as the adult poses questions and then the child needs to formulate theories and test them to respond. It is a fun and easy way for staff and libraries and museums to share information on brain development and to model activities that adults can easily repeat at home.

And now it is my pleasure to introduce Anne Kilkenny, Early Childhood Services coordinator and children's librarian at Providence public library.

>> ANNE KILKENNY: Thank you very much. Good afternoon. Providence public library is excited to share our work around young children and learning here in Providence. One of the primary focus points in the strategic plan is to provide early childhood services in education. We had a vision for a space which would serve as an interactive early learning environment, destination for children and their families where they would be able to engage together with books and experiences that would support the development of early literacy skills. The library has been very fortunate to have a longstanding collaborative relationship with Providence Children's Museum. And it was with the help of their expertise in design and supportive play and fabrication of the elements in the room that they were able to bring the vision that we had for our new children's room in to the Chace Children's Discovery Library.

I am going to see if I can get the slide to advance. There it goes. So our discovery library focuses on early literacy skills such as phonemic awareness and narrative and storytelling skills and letter recognition,

rhyming and, of course, books. But embedded in our vision and design of the space was the idea that as children engaged in self-directed play throughout the room they would be building crucial skills that would serve them as they move through life.

Since its opening in 2012 we have seen very strong examples in ways our discovery libraries design and components that we included coupled with our own programming and services have provided support for the development of these skills. Children make connections and use critical thinking when they explore our letter boxes. I am going to go back one more so you can see the letter box there that she is looking at. Surrounding these letter boxes go around the discovery library on three sides and can be open to reveal multiple items that begin with the letter that is displayed on the outside. Children can explore them on their own but also we have different kinds of scavenger hunts that allow them with a parent or on their own to explore the boxes and be using memory and making connections about things they see in the boxes, letters and the sounds that they make. And as you can see they are 6 to 12 inches off the floor. They are the perfect height for infants and toddlers and preschoolers to explore. This is their favorite element in the room. Everyone loves them very much.

It won't advance again. In an area of the room called the forest there is a life-size hollowed out tree stump. It is surrounded with actual Birch tree branches. And there is a large mobile in the ceiling with the alphabet carved in them. In this area puppets and other open-ended props are provided to promote storytelling and retelling a collaboration, cooperation and imagination. Children communicate with one another as they create scenarios and take on different perspectives through their pretend play and role taking. They have clipboards nearby where children can go over and illustrate and write their own stories and retell stories they have created in the forest area or work with parents together to create stories that they would then include in our library story binder. And I have three of these binders each filled with over a hundred stories that children have left behind and gives them such joy to come in and pull them off the shelf and search through to find the stories they have left on previous visits. During our story hours we also provide opportunities for skill building through the use of movement, puppets, songs and books. We have over 60,000 children's books in our collection and the children's discovery library houses our extensive picture book collection and children during our story hour have time to play and socialize and as well as come together as a group and participate with their parents who act as strong role models during these times.

Our intent for the discovery library was -- is to be a place where children and their adults can spend time together reading, playing and learning. This time and space together promotes the healthy relationship between child and adult that we know is the basis for healthy brain development. And it is

also a place where children can engage in self-directed play either alone or with adults or with their peers. We are very excited to continue to build community learning opportunities here in Providence. And now it is my pleasure to introduce Kathy Shahbodaghi from the Columbus Metropolitan Library where she is the public services director.

>> KATHY SHAHBODAGHI: Hello. Kindergarten readiness is a big focus area. We are very focused on four key early literacy skills. And in fact, the programs that you see here are some of the ways that we bring our kindergarten readiness focus to life. We make home visits to at-risk families, families that have children from birth to age 4. And so we are focused on bringing these skills to life through these home visits. We offer traditional story times at CMF. Baby time, toddler and preschool times. Our story time at the Columbus library has been refocused on early skills and empowering parents to work on those skills after they leave the library and that's a big focus for us.

So what I would like to do and to kind of build on the Providence model is to talk a little bit about these skills come to life not so much through exploration in the children's areas but through our programs because what we find is that while we are working with children and their parents and caregivers on these early literacy skills very naturally executive function skills also develop in tandem. And I will give you some examples. For purposes of time I won't go through all of these. So first self-regulation, of course, children become more ready to learn when movement is involved. And they love participating in movement songs and story time. Songs with specific movements and motions like head, shoulders, knees and toes provide an ideal way for children to learn to regulate their bodies to that song and those movements. Of course, finger plays, flannel stories, some books, all the traditional story time elements offer opportunities for children to very naturally learn to self-regulate.

Perspective taking is another one. As I mentioned before it is important to ask that we focus on parents and ways to teach parents to work on early literacy at home. So we talk to parents about dialogic reading. How to read a book with a child using this technique. And it is a great way to help develop a child's perspective. For example, when asking a child questions about a character in a book, like wonder why the boy did that or why is that girl laughing. Those kinds of questions encourage the development of perspective very naturally and very easily in children.

And I'll -- the last that I will talk about is critical thinking. I like this example because this is a new and valuable way we have begun to nurture some critical thinking along with giving young children extra writing practice, but it is to offer children in story time a survey after story time ends. Now the survey asks a question that makes them think, for example, in a photo a group of children are very intently writing their name. In the column they have chose to answer the question which was posed which pet is best. And

there are four columns, cat, dog, rabbit, fish. So as you can see these children are very intently making their choice. And then the librarian will talk to each child to ask why did you pick rabbit or why did you pick fish allowing the child to think through and explain the reasoning behind their choice. This idea, of course, can be manifested in many, many ways but does focus on critical thinking. So again we have found that executive function develops very naturally in tandem as libraries are focused on kindergarten readiness and early literacy skill development when we work directly with children and as we help parents learn their role at home as their child's first teacher. Now and now I would like to introduce Mimi Howard, school readiness consultant.

>> MIMI HOWARD: Thank you, Kathy. And thank you all for your great stories and examples of work going on every day in museums and libraries across the country. These stories are a perfect lead in for me to talk to you a little bit more about the new report brain-building powerhouses and how it was developed and what you are finding when you read it. So as we started to think about this work, building on the growing young minds report that Helen referenced earlier in the introduction and recognizing the important role that museums and libraries play in the informal learning space which both Andrea and Ellen mentioned as well, and coupling that with what we knew was already happening in a few libraries and museums across the country with addressing executive life function skills we addressed that museums and libraries could make major contributions to driving a larger executive function agenda. And we wanted to find out more about what was happening across the country in museums and libraries.

So step 1 consisted of an ambitious information gathering effort and we undertook that with the help of a number of museum and library associations who helped us distribute an online survey that went out to museums and libraries across the country asking them to send us examples of their work. We also took a deep look at many of the grant programs that were funded through the IMLS grant program to round out our analysis of what we were seeing in museums and libraries as it related to the important issue of exploring brain development and executive function and life skills. The response to the survey was absolutely terrific. We had over 220 responses to our request for information. So our next step was to analyze all this great data that we had accumulated. And what we found essentially was that museums and libraries have as no surprise to all of you on the call have all the natural ingredients that were needed to create a robust and very targeted set of opportunities to increase understanding of the science and build executive function skills in children.

So we assumed that by linking the existing rich content, innovative approaches that were already available in museums and libraries, museums and libraries were poised to become important community leaders in moving this agenda forward across the country. So as we continue to look at the

data and analyze it further and we thought more about how programs and services and resources might be more explicitly framed to include a focus on brain development and executive function skills six sort of universal and important assets emerged from our analysis. And you can see here on this screen what those six assets were. So in addition to this -- so for each of these assets you will find in the report a brief discussion of the high level contributions that are being made by museums and libraries across the country as well as some shorter descriptions of specific programs being offered in museums and libraries that address each of these specific asset areas.

In addition to the six assets we also took a look at each of the seven executive life skills and provide in the report specific examples again of museum and library programs that are working to develop programs and learning opportunities that are focused on each of the seven life skills in particular.

And then finally the report ends by identifying five steps that museums and libraries can take in partnership with other community stakeholders to keep the work moving forward and to make the executive functions, life skills agenda that Ellen has mentioned earlier on a key part of any work that goes on in communities around the country.

So I am just going to end here and pass the baton back to Ellen who is going to talk more about next steps going forward. And thank you all.

>> ELLEN GALINSKY: Thank you, Mimi, and thank you for being such a wonderful partner along with IMLS on this incredible collection. I don't know about you, but I am pretty blown over by looking at the things that people are doing around the country already and then the possibilities before us that we can use to help children thrive. You are such an amazingly creative and resourceful field that it is just a thrill for us at Mind in the Making to partner with you. I'm going to tell you about some of the free resources we have. We have created a library of almost a hundred books that promote these skills. They are divided by age, and they are divided by skill. And we have created tip sheets. This is a partnership that we have with the first book. This has been an amazing partnership. Without any publicity other than our speaking about it, there have been 300 -- we just got the number a few minutes ago of the latest. 326,000 of these tips downloaded since we launched them two years ago. Please go to our website Mind in the Making and you will see these tip sheets and you can add them to your museums and libraries if you already have these books, but hey, this is the thing that I'm so glad that so many of you are still on the call even though we are going a little bit beyond our time because we actually have a gift for you. We have applied with First Book for a grant where we can give you mini grants to have these -- this collection of materials available for you. We can offer you up to \$200 matching grants and that would buy approximately 100 books through the First Book

marketplace. First Book as you know works exclusively with schools and programs serving kids in need. So you are going to be eligible if you have a 90% e-rate and if you are in a school or library you know what that means. It is a system where you can receive discounts if you serve a certain proportion of low income families. And 90% e-rate indicates that at least 75% of people in your area are low income. So this is -- you can do this or you can register if you are located in a zip code that is identified as low income through census poverty data or you can register at First Book.

Please tell people who are eligible for this that you can get these children's books that go up through age 12 at a huge discount if you think about it. I know how expensive children's books are because I buy them all the time for my grandson. And you are getting them at \$2 a book if you can buy a hundred for 200 matching grant, \$2 to \$4. It is quite cool. And please pass this on to your friends. So we also have developed prescriptions for learning. These are taking the problems that parents have every day with their kids, what is school readiness; my kid doesn't sleep; picky eater. My kid is on the iPhone all the time. These are the everyday problems, the first frequent problems that parents have. We use research to turn these from dealing with challenging behavior in to an opportunity to teach a life skill and I think it is a very positive way that we can help families.

So this is the resource that you can also have for free, download these for free by age and by issue that your child faces. Another incredible resource that we have we have partnered with the Bezos Family Foundation in an initiative called Vroom. This initiative takes the best science and we can continue to film. We have done -- we are in the process of doing three new films. Take the research and turns in to tip. And you can download the app for free on your phone, on your Smartphone and every day you can put in your child's name and your child's age. And every day at a certain time that you designate you can get a tip of a way to take the time that you have and turn it in to an opportunity for inspiring learning. It is fun. It is not didactic. It is totally inspirational. 250 characters.

And there is a brainy background that tells you the science behind the tip. It is just taking that time that you have and it can be anywhere that you are, whether you are waiting, whether you are on a bus. Whatever you are doing. This is an incredible free resource we have for you.

We also have taken the modules that we have created and we have adapted them with Boston Children's Museum for museum and library educators and we will be doing two seminars, one on the East Coast and the West Coast in October and November for museum and library professionals to learn more about the science and how you can apply and take it back to your institutions. And we will continue to spread this out around the country.

So we are eight minutes over. We have not had drop-offs on this call. So if people want to stay on for questions here is Erin Ramsey, my

wonderful partner in doing this work. She is the director of Mind in the Making and heads its outreach all over the country. Erin, let's see if people have any questions. They will unmute your phones so you can ask them directly or you can put them in the chat box.

>> ERIN RAMSEY: Hi everyone. If you don't think of a question or if you are short on time, please feel free to just e-mail me there at ERamsey@familiesandwork.org or if you have any specific questions for the speakers that are on the webinar I can put you in touch with them.

>> KATHERINE MAAS: Hi. This is Katherine. I wanted to come on. There were a couple of questions that didn't get answered. Somebody is asking about a report that Andrea was talking about in the beginning. Something about mountains, that looks like it is in the chat box there. So I wanted to ask about that. And Stephanie, somebody was asking about getting a copy of the handouts.

>> ANDREA CAMP: I mentioned three reports. The 21st Century learner, the continuum begins with early learning that took place in 2003. The 2013 IMLS report "Growing young minds: How museums and libraries create lifelong learners" and today's report, "How libraries and museums can strengthen executive function skills." And there we can -- I think in the information will be links to all three. I'm not too sure if the 2003 is up but I will -- I do have copies if someone wants a copy.

>> And it looks like Terry said she can provide the handout. If you want copies of things and she will get you in touch with you. I am going to stop the recording and see if anybody else has other questions. Okay. How do you want to handle questions? Shall I go ahead and unmute people and take a few minutes or do we want to have chat questions?

>> I want to unmute people.

>> When you hear the announcement that says the phone is unmuted, please unmute your phone or by pushing star 6.

>> All right. So we are losing people. We do have a lot of people on the line. Let's try to take a few questions.

>> This is Terry from South Dakota. I wasn't able to get in to the webinar. I have been listening with great curiosity. But I also tried to download the report and I couldn't find it.

>> Okay. We have recorded the webinar. So I will be posting the recording. Once that has been processed and -- are you trying to find the IMLS report, the growing young minds?

>> Yes, I will find it. And I hope and I put a link in the chat and you can also just contact Erin for that as well and she can put you in touch with that. I will put it in chat for anybody who is able to get in to the room.

>> If you haven't been able to get in to the webinar it is ERamsey@familiesandwork.org.

>> Thank you.

>> We will send you the slides before the -- before we post the whole

webinar if you want to take a quick look at --

>> I would like to -- I will send this to ERamsey@familiesandwork.org.

>> It looks like we only have a few more minutes with our captioner. Why don't we give it five more minutes of questions if anybody has anything. Maybe we don't have any questions. I think I may have answered everything.

>> ELLEN GALINSKY: Could I ask Candace who I think is on the call, this is Ellen again, to talk about how to get the word out about the First Book grant?

>> Candace: Absolutely. Thanks, Ellen, for the opportunity and for the shout out for First Book. We are encouraging folks to register through the link that Ellen shared, the firstbook.org/imls. When you go through that link and we encourage you to share it with your museum and library and school colleagues who might also be eligible to register with First Book that would be serving 70% of families of low income means we will be able to see who comes in through that link. And so you will automatically be sort of tagged as eligible for these mini grants. And then we will reach back to you with just a small quick survey about how you would use the books and what your vision for the resources would be. And then we will just communicate directly one-on-one with grantees to get those funds placed in their First Book account so they can purchase the Mind in the Making title.

>> This is Jennifer Wilson at the Children's Museum of Denver. And I have a quick question to follow up on that. Does that have to be 75% of the entire population that you serve or if you have specific programs that serve 75% or more low income populations would that qualify?

>> It would. And thank you for that question because we know that that has been somewhat of a barrier of friends and libraries who are not sure how to see themselves in our registration process. It asks to verify the population that you serve is low income. We encourage you to register kind of with those programs in mind. So if you do fieldtrips with the local Title I school or if you have a partnership with your local Head Start program or you do lunch at the library with the FNS programs. When you are considering those families you can use any of First Book's resources for any of those programs. So please do register and just recognize that we would ask you to use your First Book resources specifically for programs that would otherwise be eligible to register with First Book. So specifically with programs that are primarily low income families and children.

>> Wonderful. Thank you so much.

>> I think one more question if anybody has one. Okay. Maybe we are all done. Erin, do you want to wrap it up?

>> ERIN RAMSEY: Yes. Thank you everyone. Thank you to all of the speakers and to IMLS for being such a great partner. To Andrea and Mimi for all their work and we look forward to all the possibilities.

>> Okay. Thanks. Bye everyone.

>> Thank you.

>> Bye-bye.

(Session concluded at 2:16 p.m. CST)

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