



## Museums for America

Sample Application MA-253132-OMS-23  
Project Category: Lifelong Learning

### Museum of Discovery and Science

Amount awarded by IMLS:	\$240,500
Amount of cost share:	\$241,830

The Museum of Discovery and Science in Fort Lauderdale, Florida will expand its STEMobile program, a mobile maker space program for early learners ages three to five and their caregivers and teachers. The program will serve 123 early learning centers in the 10 lowest-income zip codes in Broward County that are also the most affected by intergenerational poverty, economic immobility, and lowest educational attainment levels. The project will provide interactive STEM experiences for young children aligned with Florida Early Learning and Developmental Standards; a Family Science Night that reinforces the caregiver's role as their child's first teacher; and professional development resources that empower teachers to feel more confident about teaching STEM. The project will help reduce disparities in education for vulnerable young learners and help them succeed.

Attached are the following components excerpted from the original application.

- Narrative
- Schedule of Completion

When preparing an application for the next deadline, be sure to follow the instructions in the current Notice of Funding Opportunity for the grant program and project category to which you are applying.

## Project Justification



### 1. Advancing IMLS and Museums for America Goals

The Museum of Discovery and Science (MODS) respectfully requests \$240,500 to respond to the academic challenges of at-risk, underserved young children by launching the **STEMobile for Early Learners**. The proposed project aligns with IMLS's **Lifelong Learning Goal #1** to *empower people of all ages and backgrounds through experiential and cross-disciplinary learning and discovery* and **Objective 1.1** to *support public, adult, family and early childhood programs*. MODS seeks IMLS funds to grow its successful *STEMobile* mobile makerspace launched during the pandemic, which currently serves 40,600 annually. With IMLS funding, MODS

will expand its *STEMobile* fleet to target early learners ages 3-5 in the 10 lowest income zip codes in Broward County that are most affected by intergenerational poverty and economic immobility. MODS will partner with the Early Learning Coalition of Broward County to target approx. 4,200 children, their parents/caregivers and teachers at 123 early learning centers in communities with the highest average unemployment and lowest education attainment levels. The **STEMobile for Early Learners** project will incorporate multiple components that engage young children, their families and teachers, including three interactive *STEMobile* experiences per child annually that align with *Florida Early Learning and Developmental Standards* for Learning, Scientific Inquiry and Social & Emotional Development; a Family Science Night at the Museum with activities that reinforce the parent/caregiver's role as their child's first teacher and professional development resources, including a Teacher Family Membership to MODS, that empowers teachers to continue hands-on STEM learning in their classrooms beyond the project. All components will be offered free of charge.

Evaluation and analysis of project outcomes will be conducted by the Museum's experienced early childhood staff and college students majoring in early childhood education who will participate in a new internship at MODS. Through the generous in-kind support of a major donor, the vehicle and all modifications to the interior and exterior of the **STEMobile for Early Learners** have been donated. IMLS funding will provide the staffing, program materials, dissemination and delivery support, enabling MODS' *STEMobile* and **STEMobile for Early Learners** fleet to increase its impact to serve 53,200 annually – 85% through free programming.

### 2. Statement of Need

The proposed project will meet several critical needs for young learners. First, young children are still facing urgent and significant academic challenges caused by the pandemic. National studies report that enrollment in preschool programs declined<sup>1</sup> as a result of the pandemic, a fact supported locally by the Early Learning Coalition of Broward. In addition, first and second graders fell two or more grade levels below expectations than in previous years.<sup>2</sup> Statistics like these are concerning given the major strides children at this age typically make in mastering academic skills like math and reading, which are key to their future academic success. Science is equally important to future academic success, yet many preschool educators report that little to no science learning is taking place, whether because they are focusing on reading and math or, more commonly, that educators are uncomfortable teaching STEM subjects. Low exposure to science in the preschool years may be one of the reasons that American children lag their international peers on measures of science knowledge.<sup>3</sup> Experts estimate it will take several years to recover learning losses due to extended and repeated school closures during the pandemic.

<sup>1</sup>Dorn, Emma, et al. "COVID-19 and Education: Lingering Effects of Unfinished Learning." McKinsey & Company, Nov. 2021.

<sup>2</sup>Mader, Jackie. *The Hechinger Report*, 2021.

<sup>3</sup>Gerde, Hope K., et al., "Early Childhood Educators' Self-Efficacy in Science, Math, and Literacy Instruction and Science Practice in the Classroom." Aug. 2017.

<sup>4</sup>Gunn, Jennifer. "Real and Lasting Impacts of Social-Emotional Learning with At-Risk Students." *Resilient Educator*, 2021.

Children's social-emotional and behavioral development has been negatively impacted by the pandemic as well. Successful development of these skills is linked to children's academic growth and better outcomes later in life. MODS' Early Childhood Educators confirm the impact of the pandemic on young children's social-emotional development. On-site programs conducted in our *Sprouting STEM Early Childhood Learning Lab* have been filled to capacity, with demand for these programs compelling us to expand the hours of operation to six days per week. Children who struggle with social-emotional development may not be able to focus on learning which could stifle even the best efforts to get students back on track.<sup>4</sup>

Early exposure to STEM learning develops the foundational framework children need for future educational achievement, economic productivity, responsible citizenship, lifelong physical and mental health and stronger communities. Young children have the capacity for conceptual learning and the ability to use the skills of reasoning and inquiry as they investigate how the world works.<sup>5</sup> Without such education starting and continuing throughout the early years, many children will be on a trajectory in which they will have great difficulty catching up to their peers...demonstrating just how much is at stake in early exposure to these areas of learning.<sup>6</sup>

According to *STEM Starts Early*, a seminal publication from The Joan Ganz Cooney Center at Sesame Workshop New America, barriers to STEM learning for young children are complex, subtle and pervasive. Disconnects exist between preschool and elementary school practices. Many parents and teachers experience anxiety, low self-confidence and gender assumptions about STEM topics, which can transfer to their children and students. To successfully integrate STEM learning into early childhood education, all systems surrounding children must be considered including parents, teachers, museums and libraries where children can extend their STEM learning. It is critical to provide opportunities for all children to explore, investigate and see themselves as STEM learners, especially those from underserved communities and in vulnerable families, in order to reduce disparities and help more children succeed.<sup>7</sup> In 2019, the National Association for the Education of Young Children's professional standards published their best practices, concluding that early childhood educators should use community resources to support young children's learning and support families as well as build partnerships between early learning settings, schools and community organizations.<sup>8</sup>

### 3. Advancing MODS Strategic Plan

MODS is requesting funds from IMLS to expand its impact upon Early Childhood Education, one of four education content pillars defined in its *2020-2025 Strategic Plan*, informed through a year-long process involving surveys, interviews and 28 roundtable discussions among Board, Leadership, senior staff, volunteers, Museum members, visitors, educators, donors and community stakeholders. Early childhood education is not new to MODS. In fact, expanding our impact upon early childhood education allows us to circle back more than 45 years to our roots as The Discovery Center and at a time of tremendous need – both to address the significant learning loss caused by the pandemic and fill the void left by the closing of the only dedicated children's museum in our community of 1.9 million residents. With this imperative, MODS has established five major initiatives to strengthen early childhood education:

- ***Sprouting STEM Early Childhood Learning Lab*** – In 2020, the Museum opened the *Sprouting STEM Lab* on its exhibit floor. Children ages 0-6 and their parents/caregivers are transported to a nature filled Florida landscape experienced from the perspective of a small insect. The *Sprouting STEM Lab*, powered by PNC's national *Grow Up Great* initiative, offers STEM activities facilitated by a MODS Early Childhood Educator.

---

<sup>5</sup>National Science Teachers Association position statement: Early childhood science education, 2014.

<sup>6</sup>Allen, L., & Kelly, B. B. (Eds.), *Transforming the Workforce for Children Birth Through age 8.* Institute of Medicine (IOM) and National Research Council (NRC), 2015.

<sup>7</sup>*STEM Starts Early.* The Joan Ganz Cooney Center at Sesame Workshop New America, 2017.

<sup>8</sup>*Professional Standards and Competencies for Early childhood Educators.* National Association for the Education of Young Children, 2021.

- **MODS *STEMobile*** – Launched in 2021, in the height of the pandemic, the *STEMobile* initiative serves 40,600 children annually. 85% of programs are delivered free through donor support, including a 2022 *Project Innovation Grant* from Comcast/Universal. The need for the ***STEMobile for Early Learners***, the second in our fleet of *STEMobiles*, emerged in response to the overwhelming demand by our preschool community and will increase the Museum’s capacity to serve 53,200 youth annually. All *STEMobile* vehicles and modifications, including mechanical lift, supply racks and exterior wrap, were donated by a local dealership through in-kind contributions exceeding \$200,000.
- ***The Discovery Spot*** – MODS is in the fabrication and installation phase of a new permanent 5,000 sq. ft., \$6.25 million early childhood exhibit gallery for ages 0-6 called *The Discovery Spot*. *The Discovery Spot* features the themes *Ocean to Air*, *The Everglades* and the *Citrus Grove* representing iconic environments recognized by children living in Florida. Exhibit content is developmentally appropriate, multi-dimensional incorporating literacy and art and incorporates ADA requirements. The Museum has raised \$5 million (80% of goal) to date. The exhibit opens in Summer 2023.
- ***New Experienced Early Childhood Educators*** – MODS has hired new early childhood staff to meet programmatic and exhibit needs. A new Early Childhood Education Manager was hired in 2022.
- ***New Early Childhood Internship*** – MODS is establishing a new workforce development internship beginning in 2023 for 10-15 college students majoring in early childhood education, a partnership with Florida Atlantic University and Florida International University.

#### 4. Target Audience and Project Beneficiaries

The target audience for the ***STEMobile for Early Learners’*** expansion is approx. 4,200 children ages 3-5, their teachers and parents/caregivers at 123 early learning centers in the 10 lowest income zip codes in Broward County. Broward College, through its *Broward UP* (achieving Unlimited Potential) initiative in which MODS is a partner, has established a model for higher education, workforce education and related community support services in areas most affected by intergenerational poverty and economic immobility. Families in the participating early learning centers are enrolled in School Readiness, a Florida statewide program that offers financial assistance to low-income families for early childcare and education, enabling parents/caregivers to become financially self-sufficient while their young children succeed at school. To qualify for School Readiness, a family’s gross income must be at or below 150% of the federal poverty level for its size; parents or guardians must be working and/or attending school at least 20 hours per week or are disabled; and families must provide a copayment for childcare costs based on income and family size.

Participating centers are overseen by the Early Learning Coalition of Broward County, established in 2000 to provide the resources, advocacy, leadership, coordination and oversight for early care and education from birth to school-age. The Early Learning Coalition has been a long-standing partner of MODS. The Coalition’s COO is a member of the Museum’s Early Childhood Content Advisory Committee, which includes representatives from Broward County Public Schools, Florida International University, Children’s Services Council of Broward County, Jack & Jill Center, Kids in Distress, WPBT/PBS Education Systems Manager, PNC Grow Up Great, Neuro Consulting Solutions and Nova Southeastern University Mailman Segal Center. Early Childhood Content Advisors will assist Museum staff in evaluation and analysis of its IMLS project outcomes.

Secondary beneficiaries are the low-income families of the children. MODS strives for inclusion of all families within its community, regardless of financial means. MODS was the first museum in South Florida to participate in the IMLS/ACM *Museums for All*, offering \$2 Museum admission (a 92% savings) to SNAP benefit holders and their family members. We offer a *Kids Club* with free admission to social service agencies, free admission on the first weekend of the month for Bank of America card holders through *Museums On Us*, free admission days such as *Eye of the Storm*, a hurricane preparedness event in partnership with the Hurricane Research Center at Florida International University and a new, free *Greater Fort Lauderdale Science Festival* launching in 2023. In addition to encouraging visitation through a robust offering of free or reduced admission, MODS knows the importance of teaching adults how to engage with their children. The strength of this commitment, and the impact of the *STEMobile* on our community, is the reason the LEGO Foundation selected

MODS as one of only 12 museums to participate in their *LEGO Playful Learning Museum Network*. Through *STEMobile*, exhibits and outreach, MODS is incorporating LEGO learning through play concepts to encourage adults to play with their children, to take the fear out of STEM and to empower adults to understand their role as their child's first teacher by continuing their child's learning at home. Results from this IMLS-funded project will be disseminated to peers in our LEGO Network including the Chicago Children's Museum and Exploratorium.

Finally, teachers at the early learning centers and future early childhood educators majoring at local universities will benefit from this project. The *STEMobile for Early Learners* will help relieve the burden on teachers by supporting their curriculum with STEM learning, providing high quality professional resources and materials and empowering teachers to continue teaching STEM in their classrooms beyond the project. MODS will provide a Teacher Family Membership to every participating teacher, encouraging them to continue using MODS as a resource throughout the year. MODS will also provide teachers with STEM curriculum resources and offer techniques for the implementation of hands-on STEM learning experiences to help teachers feel more comfortable leading activities on their own.

## Project Work Plan

### 1. Project Activities

Three components comprise this proposed IMLS-funded project: delivery of in-classroom programs through the *STEMobile for Early Learners*, a Family Science Night at MODS and Teacher Resources, Training and Teacher Family Membership. Each of these components combine to create a continuous, engaging, impactful experience throughout the project.

**Component #1: *STEMobile for Early Learners Program Delivery:*** The *STEMobile for Early Learners* is a makerspace on wheels. MODS' Early Childhood Educators will deliver immersive, project-based learning through seven themes: ***To Fly*** (discovering the science of flight); ***Clever Coders*** (investigating how patterns are the building blocks of code); ***Weather the Storm*** (exploring weather-related phenomena such as hurricanes); ***Robot Petting Zoo*** (constructing, coding and interacting with MODS robots); ***Everglades Engineers*** (designing and engineering shelters for animals with eco-friendly materials); ***Solar Power*** (constructing solar power and basking in the power of the sun); and ***STEAM*** (using 3D designs, fabrics and sewing machines to create 2D art). *STEMobile* challenges are 45-minute, highly engaging, interactive programs with curriculum, materials and tools to create and test flying objects, engineer buildings, design shelters and turn STEM into STEAM. Each early learning center will receive three *STEMobile* programs of their choice throughout the year. All programs and materials will be provided free. New programs will be developed and delivered by Museum educators based on *The Discovery Spot* themes of *Ocean to Air*, *Everglades* and *Citrus Grove*. In response to numerous requests from educators, a GeoDome portable planetarium will be purchased to accompany the *To Fly* theme. New early childhood educators and interns will be hired.

**Component #2: Free Family Science Night @ MODS:** The Museum will host a free Family Science Night @ MODS for children, families and teachers at the end of the 2023/24 school year. This private event will provide children and their families with the opportunity to play and learn together in a safe, welcoming environment. During the event, families will be treated to a light dinner, play and explore in the Museum's two floors of exhibit galleries, meet our resident animal ambassadors and engage in project challenges in our *Makerspace*. Families will also enjoy the new *Discovery Spot* early childhood exhibit where they can digitally paint Florida native fish and sharks then bring them to life by releasing them into a digital ocean, walk on a biplane suspended from the ceiling, engage as scientists in the marine research station, climb the citrus tree and process fruit in the Juicing Factory and track animals in the Everglades. Early Childhood Educators, Life Sciences and Education staff will facilitate these experiences.

**Component #3: Teacher Resources:** MODS Early Childhood Manager and Educators will conduct a virtual Professional Development workshop at the beginning of the project year for teachers. MODS will develop STEM-based classroom resources for each teacher and teach-the-teacher how to incorporate these resources into ongoing classroom learning. A Teacher Family Membership to MODS will provide an additional resource for teachers throughout the year.

## 2. Program Management & Resources

Oversight of the *STEMobile for Early Learners* is the responsibility of Aruna Ragbir, Director of STEM Learning. Aruna is responsible for the development, delivery, evaluation and staffing of all STEM programs, as well as responsible for working with Neuro Consulting Solutions and the University of Miami's Center for Autism and Related Disabilities to train staff and develop programs, policies and procedures that make MODS accessible and welcoming to individuals with autism and sensory processing sensitivities. Aruna holds a bachelor's degree in biology from Barry University and has prior experience at art and children's museums. Aruna's early childhood education team includes Sarah Curran, Early Childhood Education Manager, with 8+ years teaching in formal and informal settings and Penny Phillips, Senior Early Childhood Educator, with 21+ years of early childhood experience working at the Baudhuin School at Nova Southeastern University, Head Start and in children's museums. All early childhood staff will work as a team and be responsible for development, delivery, evaluation and dissemination of all project components. Cameron Moore, Grants Administrator, will be responsible for program booking. Cameron and Sarah will be responsible for communicating with early learning centers. Hilary Winiger, Director of Grants, has 40+ years in the museum grants field and will be responsible for managing the grant award and tracking progress to create grant reports. Joe Cox, President & CEO, has 20+ years in the museum field. Joe was the recipient of a Smithsonian Fellowship in Museum Practice. He completed the Getty Museum Leadership Institute and currently serves on the national board of the Association of Children's Museums. Joe will provide leadership and oversight for this project.

In addition to the in-kind donation of the vehicles, MODS raises \$125,000 annually from donors to sustain the operations of its initial *STEMobile*, proving it can successfully allocate the time, finances, personnel and resources necessary to expand and implement the project with IMLS support.

## 3. Addressing Risks

In assessing the proposed project, MODS has recognized several potential risks. The first risk is that early learning center administrators may be hesitant to participate, due to prior commitments or unaware of the time that might be involved. Renee Jaffee, CEO of the Early Learning Coalition of Broward, will send a letter of introduction to all sites, explaining the project and its benefits. MODS will conduct a virtual Town Hall – an information session for all teachers and administrators to get to know the Museum and exhibits, introduce our early childhood staff and ensure them of the project's benefits to their children, families and teachers. MODS will also send a link to our *STEMobile* video available on our website at [https://mods.org/?page\\_id=17692](https://mods.org/?page_id=17692) and YouTube channel at <https://youtu.be/S6awEuTk61s> to familiarize every center with our program and staff.

Additionally, we recognize that scheduling at our partner sites must be fluid to meet their needs. The *STEMobile for Early Learners* will be available five days a week throughout the year. For early learning centers with a summer program, we can book these visits year-round to accommodate their schedule.

Staffing could also be perceived as a risk. However, in the past year MODS has hired two new positions - an Early Childhood Education Manager and a Senior Early Childhood Educator. We will also be hiring an Early Childhood Education Coordinator and will establish an early childhood internship for college students. Multiple Museum staff will comprise the project's key personnel so that if any staff member cannot continue with the project for any reason, someone else can step in immediately to help uphold the project timeline. MODS' Grants Administrator has an established protocol for scheduling or rescheduling programs using the Altru/Blackbaud system. The Director of STEM Learning oversees additional STEM Educators who have experience working with children, teachers and families. Finally, MODS has worked successfully with partners including Broward County Public Schools and the Children's Services Council to recruit students for paid internships and is well versed in the process to mitigate any potential risks.

## 4. Tracking Progress and Evaluations

MODS' Early Childhood Education Manager will be in regular contact with teachers and administrators at each early learning center to discuss successes or issues that teachers are facing. MODS will use the following methods of evaluation:

- An informal evaluation will be conducted during the *STEMobile for Early Learners* outreach program and recorded through anecdotal notes. MODS' Early Childhood Educators and classroom teachers will ask questions at the start and end of the program to assess what the children learned and retained during the session.
- MODS will conduct evaluations with teachers and administrators at all partner centers to assess the value of the *STEMobile for Early Learners* including whether the project successfully impacted the children's STEM learning experiences, whether the project improved the confidence of teachers in their ability to teach STEM and whether the project is a beneficial resource for teachers and families.
- MODS will assign its early childhood interns with conducting evaluations with the families at the Family Science Night to assess the value of Museum programming.
- MODS will track the number of children, parents/caregivers, teachers and administrators that participate in all components of the *STEMobile for Early Learners* project.
- MODS' Director of STEM Learning, Early Childhood Education Manager, Early Childhood Coordinator and Early Childhood Educators will meet with administrators and lead teachers to review and assess project areas that need improvement.
- MODS Early Childhood Content Advisors will review the evaluations and lend their insight and expertise to the final reporting.

## 5. Communicating Results

The *STEMobile* has been a stellar success, delivering programs to 40,600 youth annually, with 85% of programs delivered free of charge at Title 1 schools, youth agencies and community events throughout South Florida. We have communicated results in reports to our donors including Broward College, Florida Blue, PNC Bank, Florida Power & Light, Citrix, Thales, Weston Nissan & Volvo, Broward County and the State of Florida. Our *STEMobile* video can be viewed on our website at [www.mods.org](http://www.mods.org) and on our YouTube channel at [YouTube.com/discoveryandscience](https://www.youtube.com/discoveryandscience). The *STEMobile* was featured on an NBC6 news segment in recognition of MODS receiving the 2022 *Project Innovation Grant* from Comcast Universal.

Highlights of the *STEMobile for Early Learners* will be shared via our *MODS Minute* weekly e-newsletter (76,000+ per email), website (374,000 annual unique users), *MODS Engagement Report* (5,000 mailed to high level donors and members) and Facebook and Instagram followers (45,000+). MODS will seek to publish articles through the Association of Children's Museums' *Hand to Hand* periodical, (our article *Building Sustainability, Inside and Out* was published in March 2022), Association of Science and Technology Center's *Dimensions* magazine and journals such as ILRA, a publication of Informal Learning Experiences, Inc. which just published two articles penned by staff – *Becoming a Hub for Resilience Education* and *Potential Partner Hiding in Plain Sight: Meet Your Municipal Planner* (July/August 2022). In addition, MODS will disseminate results from this IMLS project with peers in our *LEGO Playful Learning Museum Network*.

## Project Results

### 1. Intended Results

Completion of the project will have immediate and long-term results. Short-term intended results include:

- 80% of participating young children will develop an eagerness for STEM learning developed through engaging, meaningful, socially interactive, joyful and iterative experiences.
- 80% of participating young children will indicate a heightened sense of curiosity, persistence, creativity and inventiveness, aligning with *Florida Early Learning and Developmental Standards' Approaches to Learning Domain*.
- 80% of participating young children will explore and discover by solving problems or creating objects, aligning with *Florida Early Learning and Developmental Standards' Scientific Inquiry Domain*.
- 80% of participating young children, ages 3-5, will establish relationships with peers and adults as well as positive and adaptive social behaviors resulting from interacting with others, aligning with *Florida Early Learning and Developmental Standards' Social & Emotional Development Domain*.

- 60% of families will feel more confident about their role as their child's first teacher.
- 60% of teachers will feel more confident and knowledgeable about teaching STEM and incorporating STEM-based lessons into their classroom instruction.

Long-term, *STEMobile for Early Learners* will:

- Strengthen the Museum's partnership with the Early Learning Coalition of Broward County and its impact upon children and families from low-income communities through STEM education.
- Infuse STEM into early childhood education, establishing an optimal educational trajectory to school readiness for young learners.
- Establish interactive STEM learning as a best practice for informal early childhood education, breaking away from passive instruction and allowing for more play and investigation that builds skills and interests to serve children throughout their school years.

## 2. Tangible Products

When the project is completed, MODS will have expanded its *STEMobile* delivery model by 31% to impact 53,200 children annually. It will have increased the number of programs offered by 43%, from seven themes to 10. Children at the targeted low-income early learning centers will have received three themed, immersive STEM experiences from January to August 2024 through the *STEMobile for Early Learners*. Each participating child will have received take-home activities relating to the themed experience to complete with their parents/caregivers. Each participating teacher will have received classroom resources with ready-to-teach STEM activities and curriculum, supplemental science supplies to continue facilitating STEM learning beyond the project and a Teacher Family Membership. MODS will collect and analyze evaluation data and produce a report at the end of the project.

## 3. Sustainability

*STEMobile for Early Learners* will be sustained and supported as an integral component of the Museum's 2020-2025 *Strategic Plan* and its core education content pillar of Early Childhood Education. This sustained commitment to early childhood education is exemplified through a long-range plan of initiatives including the *STEMobile for Early Learners*, a new 5,000 sq. ft. early childhood exhibit hall, *Sprouting STEM Early Childhood Learning Lab*, hiring of experienced early childhood educators and establishment of a college internship for students to fill the job pipeline of early childhood educators diminished by the pandemic.

Museum donors have proven their commitment to the *STEMobile* initiative, most significantly by donating the vehicles and modifications valued in excess of \$200,000. IMLS funding will provide the critical infrastructure – staffing, materials, new program curriculum development – to expand the Museum's *STEMobile* delivery model to reach more at-risk, underserved early childhood learners in need, impacting a projected 53,200 youth of all ages annually – 85% served free – a 31% increase over MODS' current reach of 40,600. Our long-term, sustainable goal is to continue increasing our impact by 20% annually, changing the long-term academic success of young children in our community.

The rise of the digital age has made STEM more important than ever. Establishing these at an early age, when young minds are most malleable, establishes lifelong thinking skills. The National Science and Technology Council, along with the National Association for the Education of Young Children, agree that exposure to STEM during early childhood is critical to establishing an optimal educational trajectory. Young children are not the only ones in critical need of STEM education. "Teachers need more robust curriculum models, more resources to execute activities and better training to become comfortable teaching STEM," says Ellen Frede of the National Institute for Early Education Research. "Museums can provide a 'brilliant' way to engage children at a deeper level and prepare teachers for the early childhood classroom."

