Coming Together to Prototype Innovation: Science Centers Educating Afterschool Providers in STEM and Making
Today’s Panelists

• Chair and Moderator
  • Paula Gangopadhyay, Deputy Director, Museum Services, Institute of Museum and Library Services

• Presenters
  • David Wells, Director of Maker Programming, New York Hall of Science
  • Tara Cox, Manager of Professional Development, The Franklin Institute
  • Jason Hammond, Science Educator, Children’s Museum of Houston
A multi-layered and multi-institutional national partnership

- **ED**
- **IMLS**
  - Federal Interagency Partnership
- **NYSCI**
- **SIX MUSEUMS**
- **21st CCLCs**
- **YOUTH**

Cross Museum Partnership

Museum and Afterschool Centers Partnership
Overview of the Project

• **Goal**: Through cross-sector collaboration, provide STEM-Making experiences to underserved youth. Brought together science centers, children’s museums, and afterschool providers to leverage each other’s strengths and collaborate as co-facilitators of learning to benefit their communities.

• **Collective Impact Model**: Organizations bringing together their complementary assets to achieve a common goal with shared measures of success.

• **Evaluation**: Formal third-party evaluation led by Education Development Center Inc. (EDC) to document the opportunities, challenges, and infrastructure needs of program implementation. The evaluator also examined benefits from the project for both the afterschool sites and museums. Additional Synthesis Evaluation conducted by ED.
An IMLS National Leadership Grant

• **New York Hall of Science** (NYSCI) joined as collaborator with IMLS and ED to lead this national project.

• NYSCI and IMLS initiated the project with a “co-creation” convening in New York, with the museum and education partners who had participated in the pilot phase of this project two years ago. The “lessons learned” shared during the convening were integrated into the six-week curriculum, tools, and delivery mechanisms NYSCI developed for the project.
Museum and Science Center Collaborators

• Six science centers and children’s museums were selected and received a two-day “train the trainer” session to prepare them to lead programming and train staff of approximately 35 afterschool centers across the nation.

• The museums that used their science expertise and museum assets to provide programming for this project were:
  • Betty Brinn Children’s Museum, Milwaukee, WI
  • Children’s Museum of Houston, Houston, TX
  • Franklin Institute, Philadelphia, PA
  • Philip and Patricia Frost Museum of Science, Miami, FL
  • ScienceWorks Hands-On Museum, Ashland, OR
  • Scott Family Amazeum, Bentonville, AR
Children’s Museum and Science Center Collaborators

- Betty Brinn Children’s Museum, Milwaukee, WI
- Franklin Institute, Philadelphia, PA
- Scott Family Amazeum, Bentonville, AR
- Children’s Museum of Houston, Houston, TX
- Philip and Patricia Frost Museum of Science
- ScienceWorks Hands-On Museum, Ashland, OR

Map of locations in the United States.
Lessons Learned from Implementation
NYSCI's mission is to nurture generations of passionate learners, critical thinkers, and active citizens through an approach we call *Design Make Play.*
Curriculum Co-Convening & Redesign

Journal Making

Soft Circuits

Paper Circuits

Paper Bots

Scribble Bots
Train the Trainer
Sourcing, Packaging & Shipping Materials
Post Training Logistics
Successes

- Completed Curriculum Guide
- Building Relationships
- Engaged a Community of Educators and Learners in Making & STEM

STEM and Making in 21st CCLCs

Philadelphia, 2017

Tara Cox
The Franklin Institute

In the spirit and legacy of Benjamin Franklin, our mission is to inspire a passion for learning about science and technology.

Science Museum
Founded in 1824
Snapshot

- 5 sites across Philadelphia
- 10 educators trained in June 2017
- 87 youth reached throughout summer 2017
Site Recruitment

- Partnered with PA Department of Education to select sites
- Worked with local 21st CCLC program managers to ensure sites met requirements
- Communicated with site coordinators to select appropriate educators
Educator Training

- 5 hour training
- Educators received stipends
- Focus on facilitation and maker mindset

Framing → Modeling → Reflecting → Practicing
Site Implementation

**Successes**
- Robust supplemental activities for 21st CCLC summer programs
- High levels of engagement
- Capacity building of OST educators
- Increased partnership with the museum

**Challenges**
- Some lack of ownership from educators
- Lack of prior knowledge by educators and youth
- Consistent attendance
Implementation at Christopher Columbus Charter School

https://drive.google.com/file/d/0BzWpaol6uZ_1aUJUS19QMjRPMjg/view
MISSION STATEMENT
• TRANSFORM COMMUNITIES THROUGH INNOVATIVE, CHILD CENTER LEARNING.

VISION STATEMENT
• CHILDREN’S MUSEUM OF HOUSTON SPARKS A PASSION FOR LIFELONG LEARNING

THE CHILDREN'S MUSEUM OF HOUSTON SERVES THE FOLLOWING COMMUNITY NEEDS:
1. FOSTERS THE DEVELOPMENT OF HOUSTON’S SIGNIFICANT CHILD POPULATION.
2. ENHANCES PARENTS’ INVOLVEMENT IN THEIR CHILDREN’S LEARNING.
3. REINFORCES AND SUPPLEMENTS CLASSROOM INSTRUCTION.
4. REDUCES THE EFFECTS OF POVERTY ON LEARNING.
5. SERVES A MULTICULTURAL, MULTILINGUAL POPULATION.
6. PROMOTES WORKFORCE PREPAREDNESS THROUGH THE DEVELOPMENT OF 21ST CENTURY SKILLS.
SAM 2017

FIVE SITES

• QUEENS INTERMEDIATE
• JACKSON INTERMEDIATE
• MILLER INTERMEDIATE
• PARKVIEW INTERMEDIATE
• SOUTH HOUSTON ELEMENTARY

ATTENDANCE

• 72 UNDUPlicated STUDENTS FROM THE 4 INTERMEDIATE SCHOOLS
• 19 UNDUPlicated STUDENTS FROM SOUTH HOUSTON

RECRUITMENT

• SECURING INTERMEDIATE SITES
SAM 2017

TRAINING

• CONDUCTED 1 SIX HOUR TRAINING WITH 6 EDUCATORS
• FOCUSED ON FACILITATION AND THE IDEOLOGY OF MAKING
• THE EDUCATORS WERE GIVEN PEDAGOGY AND BEST BEFORE MODELING EACH ACTIVITY AND REFLECTING
SAM 2017

SITE IMPLEMENTATION

SUCCESES

• INCREASED COMMUNITY PARTNERSHIPS
• ENTERED MIDDLE SCHOOLS
• INTEGRATION OF SAM CURRICULUM AND MUSEUM CURRICULUM
• KIDS OF ALL AGES ENJOYED THE ACTIVITIES

CHALLENGES

• MUSEUM STAFF BECAME PRIMARY EDUCATOR
• INCONSISTENT MIDDLE SCHOOL ATTENDANCE
• COMMUNICATION CHALLENGES
SOFT CIRCUIT HORRORS
FINISHED PRODUCTS
Delving Deeper – Panelist Insights

1. One brief impact story from a youth program participant

2. Ready resources available from the project for other science centers and children’s museums to use.

3. One idea from each of you on how this innovative project can be scaled up, optimally?
Your Turn…

Audience Questions and Ideas
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Thank You!