Engaging Preschool Teachers in Science Professional Development
Interactivity 2017

PRESENTERS AND RESOURCES

1. Michelle Kortenaar, Senior Director of Engagement and Learning, Sciencenter, Ithaca NY
Contact: CESL@sciencenter.org
   ▶ Highlighted program – Collaborative for Early Science Learning (CESL).
   CESL is a project funded by IMLS to support museum professionals in starting, expanding, or improving early childhood STEM teacher professional development through webinars, online tools, workshops and newsletters.
   More information at www.museumtools.org
   Upcoming CESL webinars for museum professionals:
   ▪ “Building and Sustaining Partnerships with Head Start” May 9, 4pm EDT
   ▪ “Creating Professional Development Plans for Head Start Teachers” May 16, 4pm EDT
   ▪ “Providing Family Engagement in Science for Head Start” May 23, 4pm EDT

2. Amy Eisenmann, Early Education Advisor, Bay Area Discovery Museum, Sausalito CA
Contact: aeisenmann@badm.org
   ▶ Highlighted program – Partnership with PLAN (Parent Leadership Action Network) parent advocacy agency in Oakland, CA.
   Amy and her team at BADM developed curriculum and “train the trainer” tools for PLAN to use for training parent facilitators to conduct workshops in technology, engineering, math, and literacy for other parents.

3. Janella Watson, Outgoing Director of Early Childhood Education, New York Hall of Science, Corona NY;
   Associate Director, Providence Children's Museum
Contact: watson@childrenmuseum.org
   ▶ Highlighted program – Partnership with New York City Dept. of Education to promote early STEM Literacy through Design-Make-Play.
   The project provides STEM workshops with preschool site directors and teacher leaders, in-school lesson modeling and science coaching, field trips, and family celebrations. The project aligns with New York’s Pre-K Foundations for the Common Core and integrates curriculum and learning across domains.

4. Ellen Blinderman, Early Childhood Director and Ashley Barajas, Early Childhood Science Specialist, Lawrence Hall of Science, Berkeley CA
Contact: ellenb@berkeley.edu/ashleysbarajas@berkeley.edu
   ▶ Highlighted program – Early Learning in Math and Science (ELMS) undergraduate course.
   ELMS is a model curriculum designed for use by college instructors to prepare pre-service early childhood educators to teach science and math to young children. ELMS instructional materials are flexible and can be used by others professional development leaders. You can adapt, pick, and choose from the variety of ideas presented to fit your own format and time frame.
   More information and downloadable resources at elmscourse.org
We hope the following information is helpful to other museum professionals in designing Professional Development for early childhood teachers in STEM.

Common Elements of Early Childhood STEM Professional Development

- Snacks
- Ice breaker
- Introductions
- Review workshop goals
- Research connections
- Hands-on activities that focus Science Process Skills:
  - Observing
  - Measuring
  - Communicating
  - Predicting
  - Experimenting
  - Drawing conclusions
- Walk through activities with large group
- Small group discussions
- Evaluation
- Distribute materials, training resources, and certificates

Common Goals

- Inspire teachers to make STEM part of their daily routines, activities, and interactions in early childhood classrooms.
- Engage teachers in hands-on activities that allow them to experience exploration and discovery much the way children do.
- Prepare teachers to ask more open-ended questions, promote inquiry and experimentation, and engage their students in authentic tasks (activities driven by the learner’s interests).
- Encourage teachers to think of themselves as lifelong learners of math and science and creative problem-solvers.
- Collaborate with each other to discuss adaptations and extensions to the activities in their own classrooms.

Differences in Professional Development

- Frequency of workshops during the year
- Length of workshops
- Content/activities
- Number of participants
- Funding

From The National Science Teachers’ Association’s (NSTA) Position Statement on Early Childhood Science

- Children have the capacity to engage in scientific practices and develop understanding at a conceptual level.
- Adults play a central and important role in helping young children learn science.
- Young children need multiple and varied opportunities to engage in science exploration and discovery.
- Young children develop science skills and knowledge in both formal and informal settings.
- Young children develop science skills and knowledge over time.
- Young children develop science skills and learning by engaging in experiential learning.