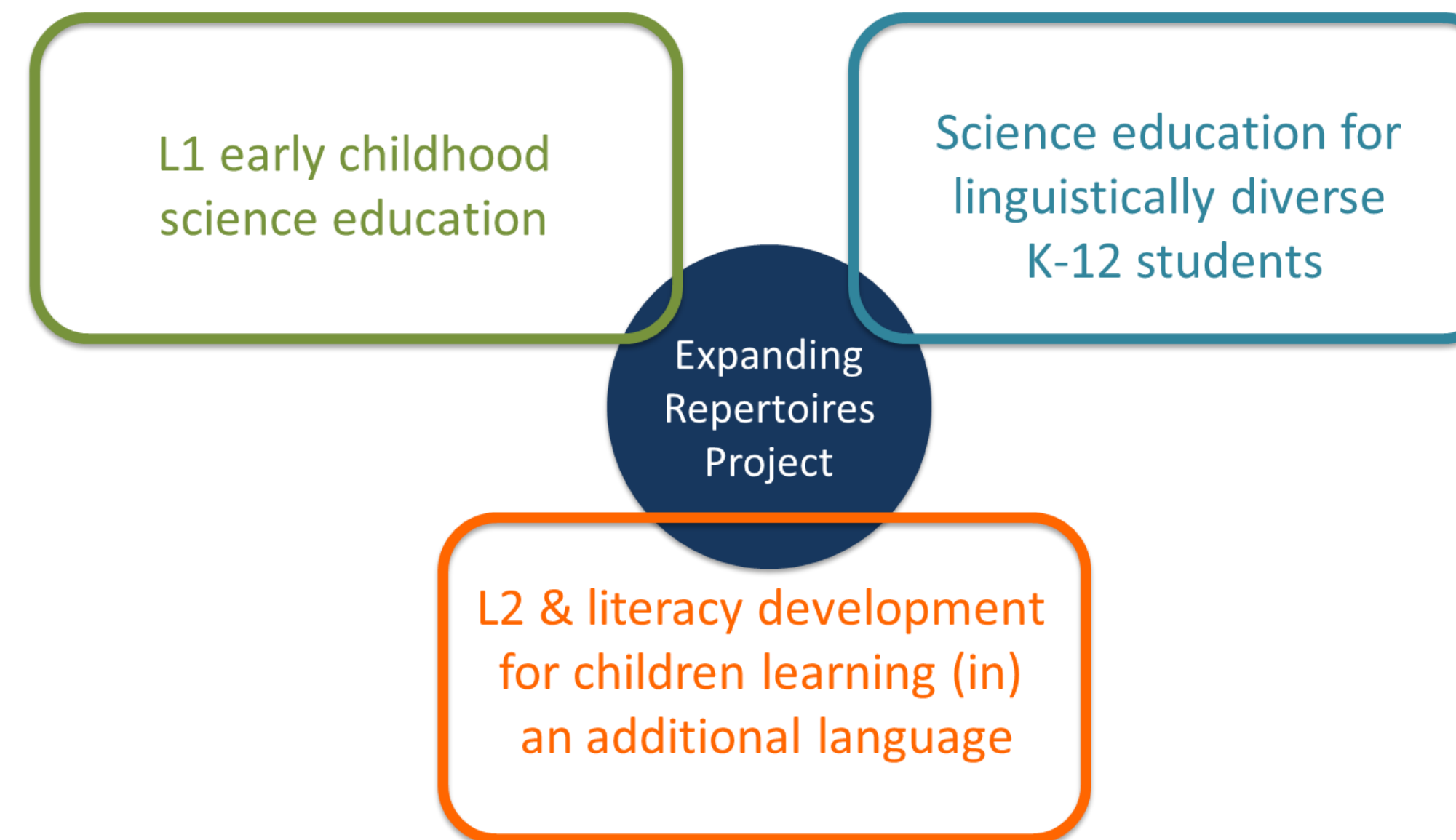




### What is Expanding Repertoires?

The Expanding Repertoires project is a collaboration between the Center of Science and Industry (COSI) and The Ohio State University (OSU) to begin the systematic study of science and children's museum programs and practices for preschool dual language learners (DLLs), their families, and the community organizations and early childhood professionals who serve them.

Our overarching goal is to advance the knowledge and awareness of needs and practices related to informal science programming for preschool children who are acquiring basic language skills in their first language while at the same time acquiring English as an additional language.



### Project Goals

- Produce a comprehensive report on the current state of the field related to providing informal science experiences for preschool DLLs
- Identify gaps in existing research and practice
- Identify promising foci for future empirical study and improvement and expansion of museum practice
- Create a full-scale Research in Service to Practice proposal and a national network to implement it



### Research Questions

- What are science centers and children's museums currently doing and/or planning to do to improve informal science learning experiences and school readiness for preschool DLLs, and why have the current approaches been chosen?
- What do science centers and children's museums identify as needs with respect to reaching and serving preschool DLLs, their families and the early childhood professionals who serve them, and why have these needs been identified as priorities?
- Which programs and practices hold the most promise in terms of potential to improve science learning experiences and K readiness for DLLs and to be adapted for use in diverse contexts?
- How can we best study the effectiveness of the programs and practices identified as most promising?

### 3 Interconnected Activities

1. National needs assessment of children's museums and science museums
2. In-person convening and quarterly virtual meet-ups with teams from 7 partner museums engaged in innovative work with DLLs
3. Exploratory study of COSI's programs and practices to support the access, participation, and learning of preschool DLLs and their parents/caregivers

### National Needs Assessment

- Online survey
  - Children's museums and science museums
  - Distributed with assistance from ACM and ASTC
- Central questions
  - What are science centers and children's museums currently doing to improve science learning experiences and school readiness for preschool DLLs?
  - What are the empirical and theoretical bases on which their efforts are based?
  - What are informal science institutions' priorities with respect to reaching and serving this population?
  - What needs do they identify in their communities and within their own organizations?

### Exploratory Study

- Goals
  - Gain insight into the experiences and perspectives of participants and stakeholders in COSI's early childhood programs that serve preschool DLLs
  - Identify needs, challenges, and opportunities related to reaching and serving preschool DLLs in Central Ohio
  - Establish an empirical basis on which to develop new and/or adapted programs and practices to improve science learning experiences and school readiness for DLLs
- Focal sites and programs
  - COSI's Little Kidspace® and special events for young children and their families
  - Professional development for COSI's ECE team
  - Outreach programs in CCS preschools & Head Start centers
  - Professional development programs for ECE professionals
  - COSI efforts to engage with linguistic minority families with young children
  - COSI efforts to coordinate with local partners with respect to supporting DLLs' transition to Kindergarten



### Project Team

- PI Azuka I. MuMin  
 Senior Vice President of Engagement and Impact, COSI
- Co-PI Leslie C. Moore, Associate Professor, Departments of Teaching & Learning and Linguistics, The Ohio State University
- COSI Team Members:  
 Rita Deedrick, Marie Quisumbing, Kimberly Pratt, Jess Lemke
- OSU Team Members:  
 Brian Seilstad, Minseok Choi, Rachel Au, Andrea Gutmann Fuentes, Nicolette Leon, Anisa Liban

### Partners

- Museum Partners
  - Bay Area Discovery Museum
  - Children's Museum of Houston
  - Children's Museum of San Jose
  - Exploratorium
  - Long Island Children's Museum
  - Marbles Kids Museum
  - Patricia and Phillip Frost Museum of Science (formerly Miami Science Center)
- Professional Organizations
  - Association of Children's Museums (ACM)
  - Association of Science-Technology Centers (ASTC)
- Local Partners
  - Child Development Council of Franklin County Head Start
  - Columbus City Schools' Early Childhood Education Program
  - YMCA of Columbus/Head Start

### Audiences

- Informal science educators in children's museums
- Early childhood educators in science centers
- Preschool educators
- Community organizations working with linguistically and culturally diverse populations
- Preschool dual language learners and their families



<http://u.osu.edu/expandingrepertoiresinformalscience/>



This project is supported by the National Science Foundation, Award #1420724