

About the project

This five-year CAREER AISL project brings together research and practice to investigate how families exercise their agency in museum settings, and how science center exhibits can give families greater authority as STEM learners.

Background

Epistemic agency in STEM education

- Involves more than constructing previously accepted knowledge
- Shifting authority: allowing learners to decide what and how they learn

Family learning in science centers

- Interactive exhibits support engagement but often guide exploration toward predictable outcomes.
- Presenting STEM in authoritative ways excludes many groups of learners.
- How can STEM exhibits invite a plurality of perspectives and voices?

Analytical Lenses

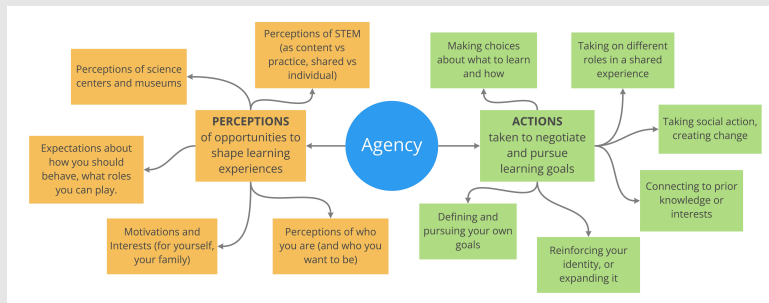
- **Cultural historical activity theory:** Families as systems mediated by the social and physical environment
- **Intersectionality:** Systems of power interact with multiple aspects of people's identities

Supporting families' agency as learners in science centers and museums

Susan Letourneau, New York Hall of Science
NSF AISL Awardee Meeting, 2021

Research Questions

1. How do families *perceive* and *act* on their collective agency at STEM exhibits?
2. How are expressions of agency affected by multiple aspects of families' identities (including gender, ethnicity, and their intersections)?
3. What aspects of exhibits support agency for the broadest audience of families?



Problems of Practice

- *Open-endedness does not equal agency:* Are the choices that science centers provide the ones that families expect, want, or value?
- *Supporting as many identities as possible:* How do we design and train to be flexible and responsive to families' unique experiences?
- *Supporting agency means relinquishing control:* What families find compelling and fun may be different than what we expect/design for.
- *Supporting agency in our internal culture:* How can we embody agency and inclusion at all levels of our work as designers/educators?

Research Studies

Exploring how families find and pursue learning goals at a range of STEM exhibits with different affordances.

- **Interviews:** Families' perceptions of their learning at various exhibits, and during their museum visits as a whole
- **Video Observations:** How families exercise agency in their conversations and interactions at various exhibits

Change Lab Working Group

Members of NYSCI's Exhibits, Education, Research, and Explainer teams interpreting data and identifying implications for museum practice.

- Defining what agency looks like in visitors' experiences
- Discussing current practices that may support (or hinder) agency
- Developing reflection tools for use in training and exhibit/program design
- Identifying design principles for creating inclusive exhibits

Contact sletourneau@nysci.org for more information



This material is based upon work supported by the National Science Foundation under Grant No. 2046141. Any opinions, findings, conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the National Science Foundation.



DESIGN MAKE PLAY · New York Hall of Science