How can evaluation both ***support*** science identity formation and ***assess*** change in science identity over time?

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Living Laboratory
Developed at the Museum of Science, Boston

Museum of Science

BOSTON UNIVERSITY

ABOUT THE PROJECT

Developing A Program Model for High School Science Research, Communication and Education Experiences in Living Laboratory®

The Boston Museum of Science and Boston University will leverage the Living Laboratory model to engage high school students in experimental psychology research, science communication, and science education activities, under mentorship by scientists and museum staff. The proposed project will explore science identity formation in teens participating in the program and will work to deepen the collaborative capacity of scientists and museum staff to engage teens in authentic science experiences.

Core Program Elements

1. Engaging in **research** practices
2. Engaging in **science communication** practices
3. Engaging in **science education** practices
4. Experiencing **mentorship** from STEM professionals
5. Becoming a member of a **science community**

Science Identity

1. **Interest** in science
2. **Attitudes** about science
3. **Beliefs** about science
4. Perceived **belonging** in a science community

ABOUT THE EVALUATION

Evaluators will conduct a developmental evaluation involving regular feedback loops that assess and inform iteration of project development.

Evaluation questions include:

1. To what extent do teens engage in core program elements?
2. How does the program impact teens' science identity related to science research, communication and education?
3. Which program elements contribute to changes in teens' science identity related to science research, communication and education?

PROGRAM DESIGN (ongoing):

Program staff will design, implement, reflect on, and improve curriculum for:

- Science communication
- Education techniques
- Psychology practices
- Experimental theory and methods

TIMELINE

SUMMER INTENSIVE:

Teens will:

- Attend mini-lectures, discussion groups, workshops
- Replicate published research with MOS visitors
- Present vetted child development research activities
- Design a novel study under mentorship by BU and MOS staff
- Participate in BU and MOS professional activities

ACADEMIC YEAR:

Teens will:

- Conduct novel research with MOS visitors and analyze data
- Assist in volunteer training related to child development
- Participate in BU and MOS professional activities
- Develop research products (e.g. academic posters)
- Develop communication and education products
- Share research products at MOS and BU events

Summer Intensive

Academic Year

PAIRED SURVEYS & INTERVIEWS will provide quantitative and descriptive information about teens' science identity at the beginning, middle, and end of the program.

FOCUS GROUPS with mentors will gather reflections about the core program elements and what could be improved at the end of the summer, mid-year, and end of the year.

Evaluators will assess participation levels in core elements through ongoing:

OBSERVATIONS of program activities

ARTIFACTS or analysis of teens' project work

Evaluators will assess change in science identity through regular:

JOURNALING activities where teens respond to a survey question and explain their response

SELECTED REFERENCES

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