LONG-TERM ISE PROGRAMMING, AND PERSISTENCE IN STEM
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The Lang Science Program at AMNH
- 7-year natural science experience for 6th – 12th grade NYC students.
- Annual competitive entry for new cohort of ~20.
- 21st cohort accepted in 2019; 14 have graduated.
- Curriculum throughout designed to help participants work collaboratively, and view themselves as people who know, can do, science.
- Middle school coursework spirals through a variety of AMNH-related sciences.
- High schoolers have more autonomy – elective courses & annual research projects.
- Also included: family engagement; special events; and college and career prep.

Research Questions
- In what ways does long-term participation in an informal OST museum program mediate changes in academic and social capital that contribute to persistence with STEM?
- What hypotheses can we generate about program design principles based on analysis of participants of an informal OST museum program?
- What are the STEM majors and STEM trajectories of long-term participants of an informal OST museum program?
- How do the STEM major and STEM career outcomes of these participants compare to other college students and graduates?

Study Sample
- 66 alum (of 74 at the time) surveyed.
- 62 indicated major
  - 65%/35% female male
  - 32% African-American, 29% Asian, 23% Latina/o, 13% White non-Hispanic
- 21 selected for in-depth, semi-structured interviews
- Selected across diversity of college experience (still in vs. completed) and racial/ethnic/gender backgrounds, with an emphasis on groups historically underrepresented in STEM.

Quantitative Analysis
Participants STEM majors and employment compared to:
- Local (CUNY) statistics: Lang graduates for exceed CUNY students in STEM.
- Overall national (US) statistics: Lang graduates far exceed general population in STEM.
- Nationally (US), students who graduate from STEM-specialized high schools: Lang graduates are on par with this population.

Qualitative Analysis
The Lang program appears to utilize four themes which foster persistence in STEM:
1. Students are practitioners of science
2. Students build social networks
3. Students have a share identity in STEM
4. Students are encouraged to discover possible selves

Authentic experiences as practitioners of science including lab investigations, fieldwork, exhibit design, citizen science projects, publication opportunities, the use of museum collections to investigate research questions

The quantity and quality of enduring relationships with museum educators, scientists, and peers.

Through long-term participation in an informal science education context with like-minded peers, youth actively view themselves as "science people" and make career choices based on this identity.

Informal science education experiences that foster participants' awareness of possible careers and preparedness for college and for a STEM career.

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