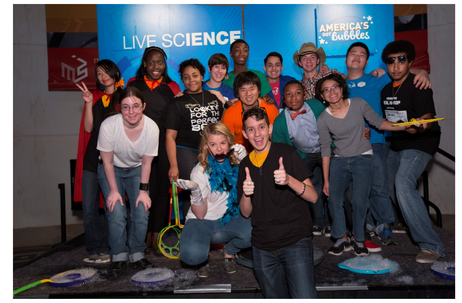
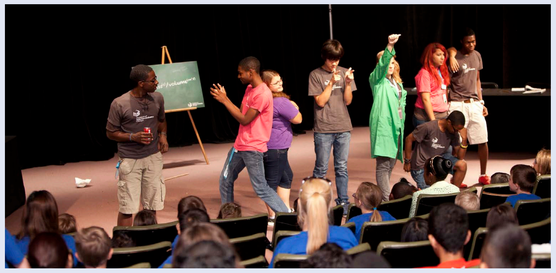
museum of science+industry chicago

We're most interested in discussing…

How to extend a longitudinal study of youth to the rest of their lives?





Developing *YOU*th! is a longitudinal study of alumni of an adolescent positive youth development program based in a science museum. We are following youth for at least five years after they start college to look at impacts participation in the program have on their college/career trajectory and overall relationship with science. This is a quasi-experimental mixed-method study, with annual surveys but also interviews and ethnographic relationships with key interlocutors.

In order to reduce attrition (and subsequent selection bias), we have invested considerably in building relationships with the youth. This has been largely successful, and now opens an opportunity to continue this study beyond the college years.

Inspired by famous longitudinal studies such as the Framingham Heart Survey, our new goal is to follow the youth (now emerging adults) *indefinitely*!

We would love to hear what others think about the opportunities and challenges such a project present.

Challenging Questions

Attrition

We expect attrition to increase after college graduation when lifestyles become more mobile and flexible. What are the best ways to keep in touch? How can we support continued interest?

Cohort	2016		2017		2018	
	Treatment	Control	Treatment	Control	Treatment	Control
1	23	22	21	16	20	16
2			19	69	17	61
3					22	73

$N_{Treatment} = 64$; $N_{control} = 164$

Contextual Changes

Times change. And so does the world around our participants. New reporting guidelines from APA emphasize the need to report on contextual changes that occur during longitudinal studies (Applebaum, et al. , 2018). Falk, J. H, Koke, J., Price, C. A. & Pattison (2018) further suggest placing greater emphasis on cultural/professional humility and reflection during long term research studies. How have our assumptions at the start of the project changed? How have the interests of our participants changed? How have we changed? How should they be factored into the research design and analysis?

Reporting Standards for Longitudinal Studies (in Addition to Material Presented in Table 1)

Paper section and topic	Description
General reporting expectation	
Sample characteristics (when appropriate)	• Describe reporting (sampling or randomization) unit—individual, dyad, family, classroom: • *N* per group, age, and sex distribution • Ethnic composition • Socioeconomic status, home language, immigrant status, education level, and family characteristics • Country, region, city, and geographic characteristics
Sample recruitment and retention methods	
Attrition	• Report attrition at each wave, breaking down reasons for attrition. • Report any differential attrition by major sociodemographic and experimental condition.
Additional sample description	• Report any contextual changes for participants (units) as the study progressed (school closures–mergers, major economic changes; for long-term studies, major social changes that may need explanation for contemporary readers to understand the context of the study during its early years).
Method and measurement	• Specify independent variables and dependent variables at each wave of data collection. • Report the years in which each wave of the data collection occurred.
Missing data	• Report the amount of missing data and how issues of missing data where handled analytically.
Analysis	• Specify analytic approaches utilized and assumptions made in performing these analyses.
Multiple publication	• Provide information on where any portions of the data have been previously published and the degree of overlap with current report.

From *Reporting Standards for Quantitative Research in Psychology: The APA Publications and Communications Board Task Force Report* (Applebaum, et al., 2018)

Opportunities

The current study is focused on career paths and relationships with science. What other important issues in STEM education can we possibly address that require long term (decades+) data? Ex: Flexibility in thinking, i.e. do people become more or less flexible in scientific thinking over time? What are relationships between OST STEM activities at different stages of life? Are any such changes structured mostly on age, life events, cultural trends, etc.? Researchers have studied these topics using between-subjects designs. What advantages would our within-subjects design offer? Qualitatively, what insights can longitudinal, ethnographic relationships offer for this group?

Place ideas, comments and questions here!

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