

Developing *YOUth!*

Research Brief #1: Skill Building for Success

This is part of Transition Points, a series of briefs describing the lived experiences of some alumni of the Museum's youth development program as they matriculated through college. For more details, background and other briefs visit <http://bit.ly/12345>

At a Glance

One of the goals of the youth development program at the Museum of Science and Industry is to equip young people with skills necessary to succeed in education and endeavors after high school. This report explores how participants gained new skills while at MSI and how these skills may have helped them in college.

As part of the **Developing *YOUth!* Project**, we talked to youths from the Science Minors and Achievers (SMA) program at the Museum of Science and Industry, Chicago (MSI). This report is part of a series of briefs discussing the lived experiences of some of our participants as they graduated from the program and matriculated through college.

About the Study

The **Developing *YOUth!* Project** is a mixed-method, longitudinal study following graduates of the Science Minors and Achievers program at MSI. The program focuses on high school youths from historically underserved communities and aims to prepare them for college. This study combines annual surveys with in-depth repeated interviews to follow participants through their college and professional careers. As of 2023, we will have followed our oldest cohort of participants for eight years, allowing us to look more broadly at how our participants' experiences with STEM and within STEM spaces has changed over time.

For these briefs, we drew upon qualitative research methods such as participant observation and multiple years of formal and informal in-depth interviews. We aim to center some of their lived experiences within STEM formal and informal spaces, including within the Museum itself.

This brief was prepared by Cindy La Nguyen, Ph.D. and C. Aaron Price, Ph.D.



Skill Building for Success

While At MSI

Participants in the Science Minors and Achievers program reported they appreciated that MSI's program set them up to be successful science educators on the Museum floor. Participants began their program as the Science Minors and then are part of a training period where they called the "In-Betweeners," and then became Science Achievers. Although most participants enjoyed the Achievers portion of the program, they nearly unanimously acknowledged the importance of the Minors program in helping them to develop the skills necessary for their success in the Achievers program. One participant, Brandy, shared:

I think the structure is really good, as far as, you do Science Minors, and then In-Betweeners, and then Achievers. And the setup is good [...] I think it's a good transition. When I was in Minors, Science Achievers looked like they're having so much fun. But I think jumping into Achievers first would be too much. Science Minors is a good step before. It kind of slowly integrates you into that interaction with people, slowly integrates you into the process of communication of science.

Our interviews and observations confirmed that the multi-level nature of the program provided the appropriate structure, feedback, and support for skill building necessary at each developmental level. Younger participants benefited from shorter sessions with highly structured activities as it provided opportunities to develop and refine the skills they would need later in the program. Older, more experienced participants appreciated the freedom of being able to access more of the Museum and exercise their autonomy.

While In College

In college, many participants continued to credit the Science Minors and Achievers program for preparing them for success in different parts of their college and professional careers.

Participants talked about the various ways the program helped them develop skills that set them apart from their colleagues. Kevin explained that when working with other students on group projects in college, he came to the realization that not everyone has the strong foundation he felt he encountered in the program: "So when I got to the real world, I was like, wow, not everyone's an Achiever."

Kevin felt that his time in the program gave him and his fellow Achievers important experience using and applying the scientific method, logic, reasoning, and critical thinking skills in order to solve problems. He further described realizing that the skills he learned in SMA were not always common outside of the Museum:

[My new job,] it's a little bit more complicated [...] so there's a little bit more math and a little more—a lot more requirements, rather. But it's the same type of organizational logical thinking. Which is something that I definitely appreciate [...] my experience with the scientific process for, just because it's logic and reasoning. And I'm realizing now that that is a much rarer trait in the world than I had hoped.

Participants shared that the Science Minors and Achievers program taught them to present complex information in an approachable manner. They learned how to break down complex concepts into simpler, easy, and fun to understand information. This was a skill they felt set them apart from their peers and was important for them in their college and professional careers. Rex said:

I think that's a key thing that I've kind of noticed... looking at some other people my own age. They never really had those opportunities to get up and present in front of people. They never really had those opportunities to go and teach people things. And I think that like the Science Achievers program was kind of my opportunity to get that foundational knowledge... of being able to present things to people in an easily understood way. And since I had that opportunity, and other people I see didn't have that opportunity, I kind of credit the Achievers program with giving me that ability.

Implications

Throughout the program, participants were given various opportunities to develop their communication skills in ways that were geared toward their developmental needs during that time. By the time participants were teaching science to guests on the Museum floor or to other youths in the program, they had had many opportunities to build up and practice their presentation skills.

Introducing Our Youth and Young Adults

These research briefs center the lived experiences of program alumni who began as youth and are now young adults. This is a little more about them.

Emma

Emma identifies as a Black woman and graduated with a bachelor's degree in computer science. She is currently exploring opportunities as a software engineer. Emma hopes to have the freedom in her career to integrate her passion for art and design with her math and computer science skills.

Rex

Rex identifies as a white man. He studied mechanical engineering before switching to and graduating with a degree in finance from the school of business at his university. Rex is now a program manager and data analyst at a defense company. At the time of our interview, he was also working on his Master of Science in Business Analytics.

Tiana

Tiana identifies as a Black woman and graduated with a degree in Environmental Science and Policy. She hopes to design and coordinate programs that help engage youths and adults with STEM fields. Tiana aspires to do this work by becoming a director or manager of an education department at a cultural institution, such as museum.

Acknowledgements

The **Developing YOUth! Project** is supported by the National Science Foundation and the Elizabeth Morse Genius Charitable Trust. We acknowledge contributions to this report from Faith R. Kares, Ph.D., and Alison L. Mroczkowski, Ph.D.