

Using Research Findings on Interest Generation to Help Us Provide Equal Access to Quality STEM Experiences

Background

We have three active projects where we are trying to gain a deeper understanding on the experiences that generate and maintain interest in STEM across the K–20 spectrum and in both formal and informal settings. First, our *Spark to Flame* project is an effort to understand student learning preferences (e.g., learning in a group vs. alone) and how they are related to the evolution of interest in science and STEM careers across grades 3–12. Second, the *Assessment of Multinational Interest in STEM* project is building off of collaboration with *Scientific American* magazine to survey university students and faculty regarding the key experiences that played a role in their STEM persistence. We are actively working on efforts to revise the survey and to collect data from students in the U.S., China, and Australia. Finally, in the *Undergraduate Scientists: Measuring the Outcomes of Research Experiences* project, we are focusing specifically on undergraduate research experiences and their effect on participating students, graduate mentors, and faculty. Specifically, we are focusing on how the experiences influence student plans for further STEM study and careers.

Documented Results

While we generally hear anecdotal reports that programs incorporate our results into their design, there are no large-scale efforts based strictly on our work. The most germane example of our results influencing program design was through our evaluation of a summer program in Chicago Public Schools meant to increase student interest and achievement in math and science, particularly among girls. Based on our prior work and surveying of those students, we could guide program administrators in their selection of program curricula related to health and medicine as a strong choice based on results that said the large proportion of eighth-grade girls indicated career choices in medicine and veterinary studies.

Potential Applications

Given that the responses we collect are directly from those who are currently making the decision whether or not to pursue STEM (or those who did so previously), we think the results of our work are directly applicable to a variety of contexts. In particular, we have tried to delineate those experiences that were important at different stages of interest generation.

For More Information

Contact Adam V. Maltese at amaltese@indiana.edu,
<http://tinyurl.com/MalteseIU>

