

STEM Prep Summer Institute - Increasing Access and Diversity in STEM Fields

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Program Description

History

In 1992, STEM Prep Summer Institute (SPSI) got its start at Brookhaven National Laboratory's (BNL) Minority High School Apprenticeship Program (MHSAP), as an environmental outreach program for 9th grade minority students. Today, SPSI covers four different science disciplines: biochemistry, physics, scientific computing and environmental science. In 26 years, over 500 students have been impacted.

Purpose

To stimulate a broader interest and awareness in STEM fields and strengthen academic training.

How We Do It

Ninth grade students who are members of an underrepresented minority group in the sciences are chosen by their schools to apply. Those who demonstrated ability and/or potential in science-oriented studies are selected through an interview process. This enrichment program consists of hands-on STEM activities centered on Brookhaven National Laboratory science. Through guided field- and laboratory-based activities, interaction with scientific guest speakers, and tours of national laboratory facilities, students are introduced to a range of STEM fields, practice field and laboratory skills, and get a head start on academic science content.

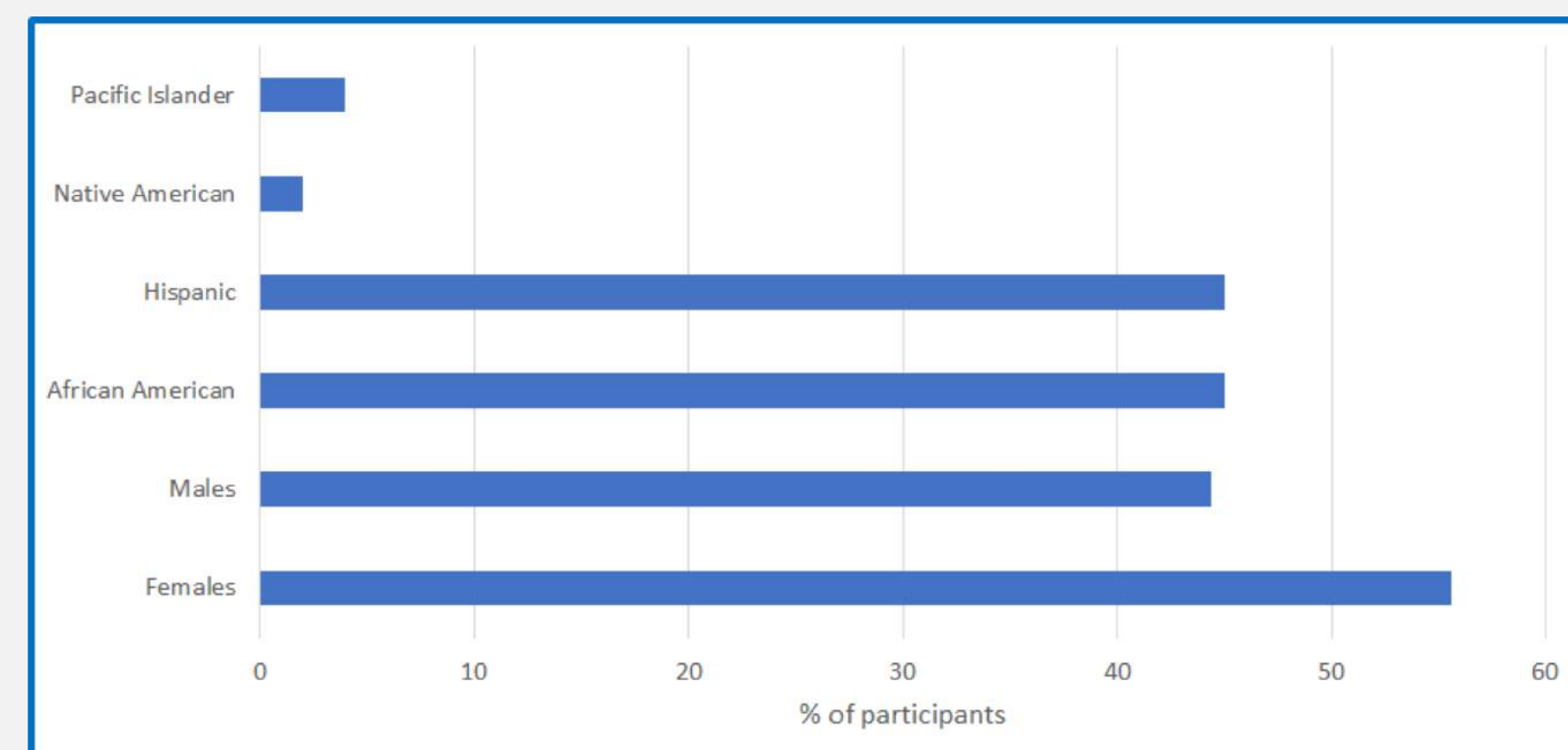


Figure 1: SPSI Demographics from 2012 to 2018

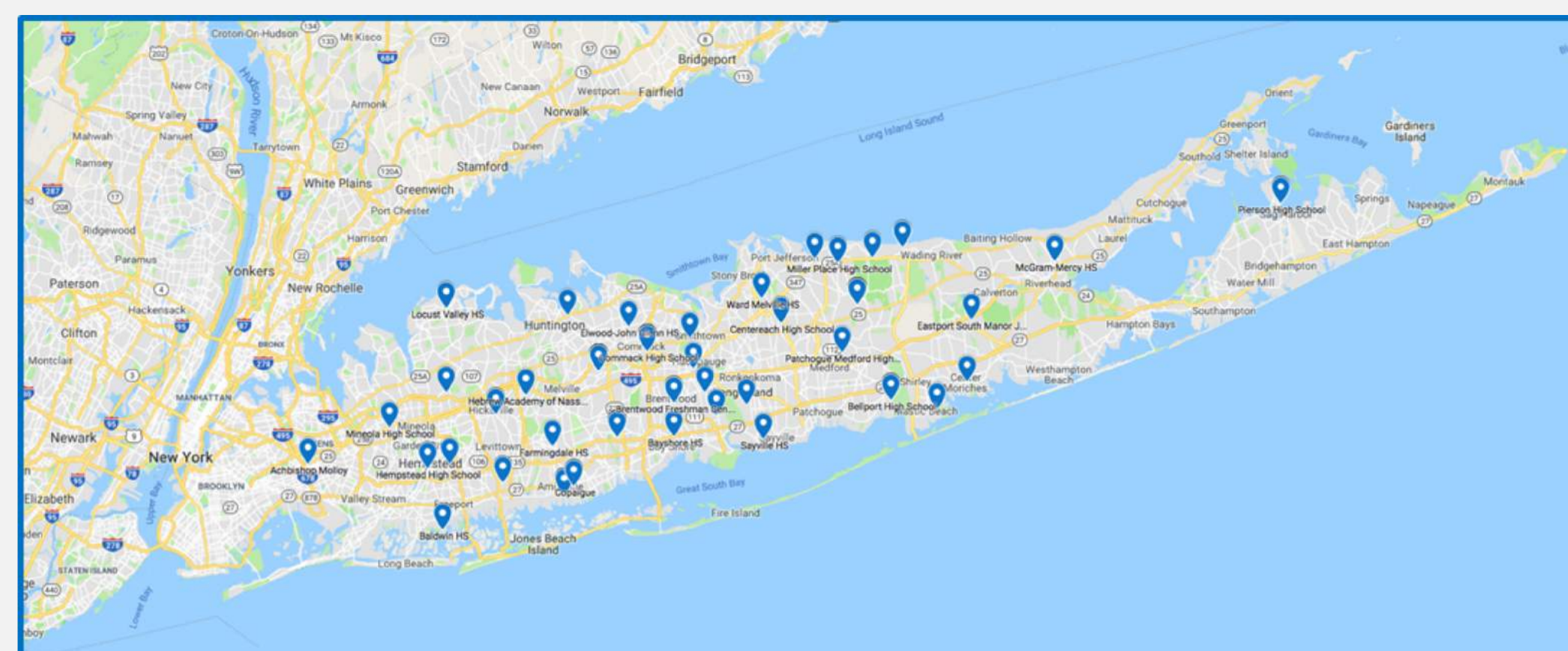
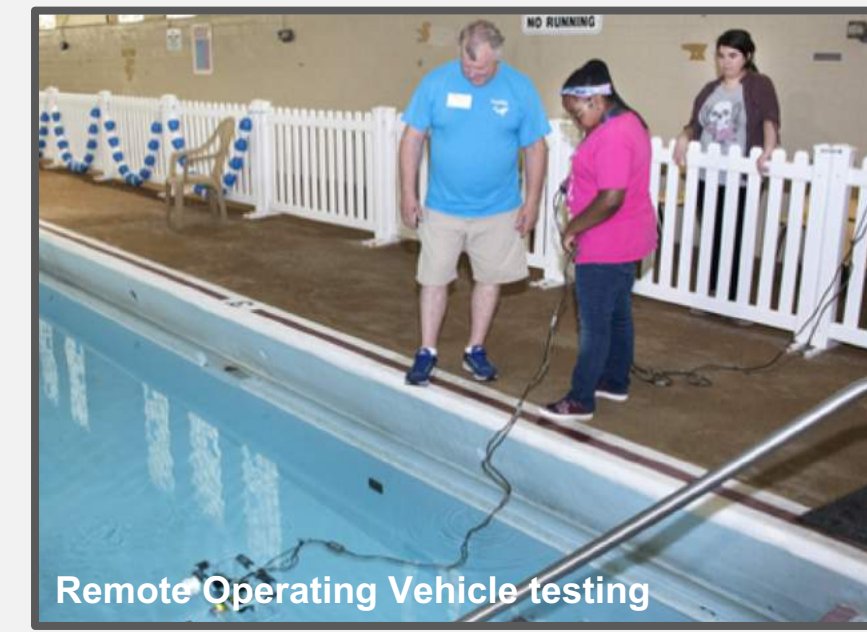


Figure 2: Long Island schools represented in SPSI from 2012 to 2018

Program Content

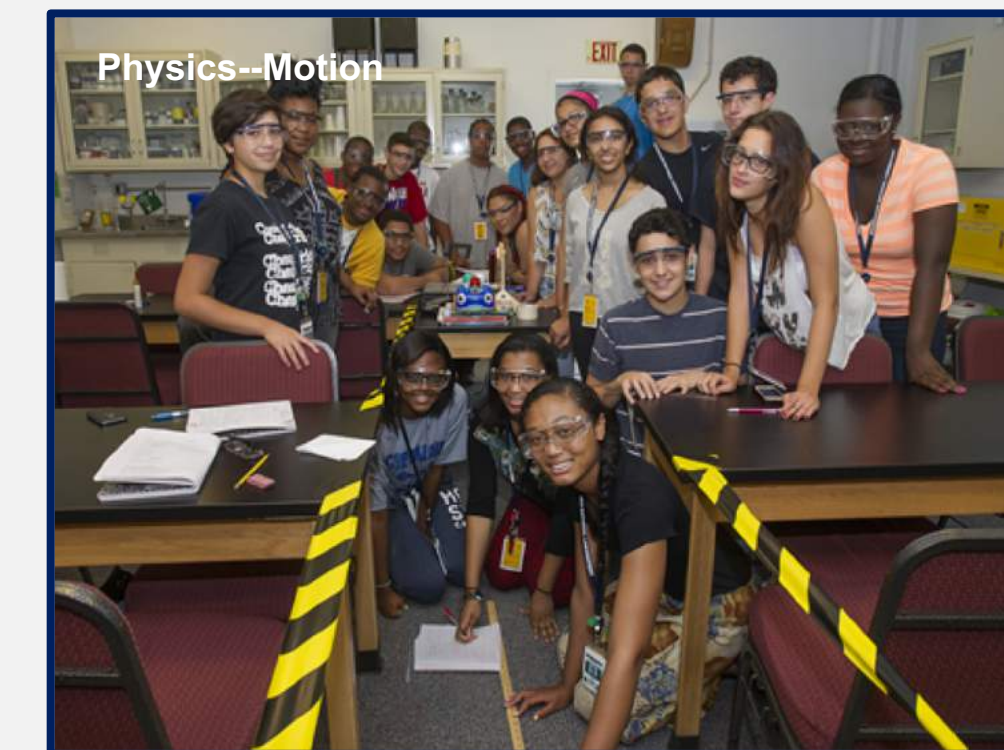
Environmental Sciences

- Engineering
- Biodiversity of Long Island



Biochemistry

- Protein purification and structure
- Genomics
- Chemical reactions



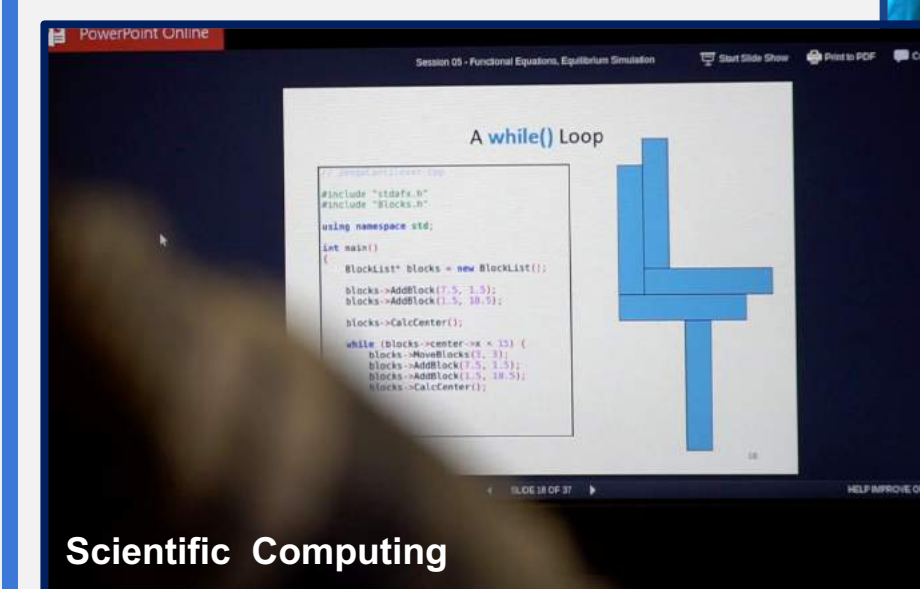
Physics

- Particle accelerator and detection
- Cosmology



Scientific Computing

- Coding in C++
- Solutions to big problems



Program Impact

Preliminary results from a longitudinal survey show that after participating in SPSI:

- 37% participated in STEM Programs in HS
 - 51.2% took extra STEM courses in HS
 - 19% participated as interns in BNL's High School Research Program (HSRP)
 - 21% participated in other BNL programs
 - 59% are enrolled at a 4 year college and 65% of those are STEM majors. 41% are still enrolled in high school.
 - 13% participated in a non-DOE college internships
 - 2% participated in DOE funded college internships
- Surveys also show that participants in SPSI:
- Were more likely to consider majoring in a STEM field in college after completing the program
 - Felt more confident about STEM topics
 - Had more exposure to STEM careers than other students at the same level



Scan for more information about SPSI



Scan for STEM Prep video



Acknowledgements

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