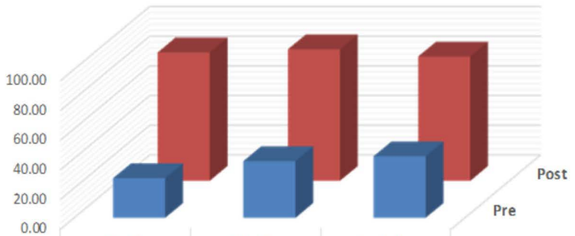
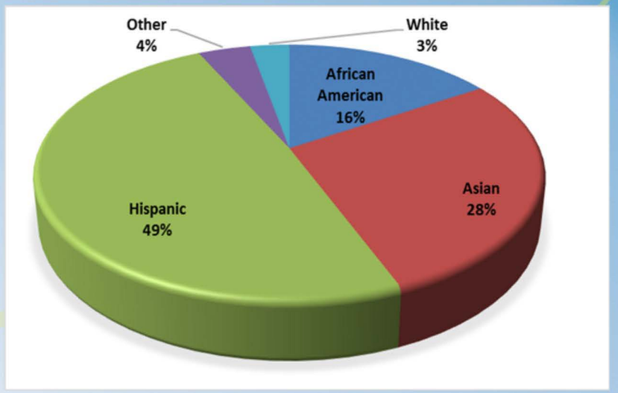
PROGRAM STATISTICS

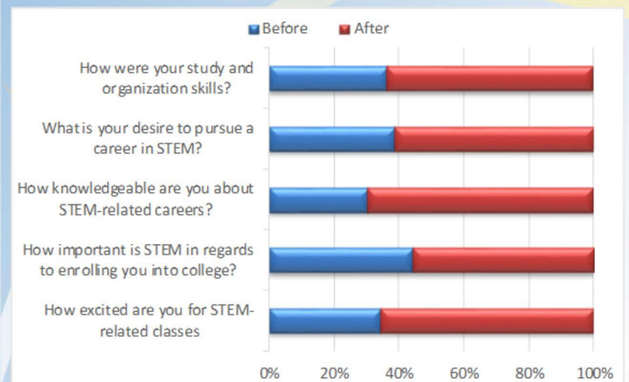


	Logic	Physics	Statistics
Pre	26.74	38.26	41.51
Post	86.53	88.62	83.72

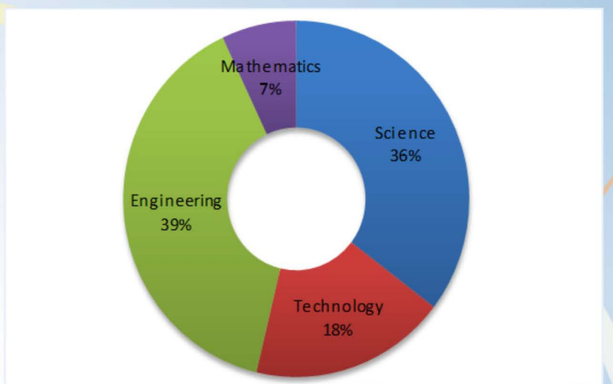
Pre/Post Test Results



Student Demographics



Pre/Post Survey



Career Path

A recent survey of Houston PREP alumni revealed that:

⇒ 99.99% of those who responded are high school graduates.

⇒ 84% of those who are college graduates are members of underrepresented minority groups.

⇒ 48% graduate with majors in engineering, mathematics, science or computer science.

- This is 167% greater than the national average.

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2017 Final Report

University of Houston DOWNTOWN


MESSAGE FROM THE DIRECTOR

Houston Pre-freshman Enrichment Program (Houston PREP) is a response from the University of Houston-Downtown to the national crisis of students who choose not to pursue careers in Science, Technology, Engineering, and Mathematics (STEM). The program seeks to inspire students from economically and socially disadvantaged populations to look to these fields as viable options, by helping these students understand the exciting and worthwhile academic and career opportunities made possible with content knowledge in these fields. For more than 25 years, Houston PREP supporters have been making a real difference. We extend our sincerest thanks to all of you!

Sangeeta Gad
Director, Houston PREP

PROGRAM OVERVIEW

Mission: The mission of Houston PREP is to provide a free challenging academic program designed to motivate middle and high school students for success in advanced studies leading to careers in STEM.

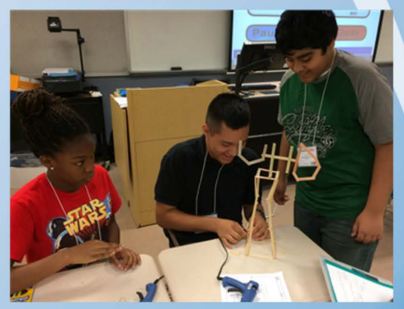
Vision: The vision of Houston PREP is to be an extended education program for students in grade levels 7-11 that seek a career in STEM fields through innovative educational and technology-enabled approaches that empower students to become lifelong learners, problem solvers, and decision makers.

Goals: The goals of the program are to increase the number of competently prepared Texas students who will ultimately pursue STEM by:

- acquainting these students with professional opportunities in engineering;
- reinforcing their academic preparation at the secondary school level; and
- creating an environment in which talented students are encouraged to learn, explore, achieve, and discover.

History: Houston PREP is an academically intense, mathematics-based summer program. Since 1989, Houston PREP has been part of the successful TexPREP initiative of the University of Texas at San Antonio (UTSA).

Year 1	Year 2	Year 3	Year 4
• Engineering I • Logic and Its Applications to Mathematics • Problem Solving • Computer Science I	• Engineering II • Algebraic Structures • Introduction to Physics • Computer Science II	• Technical Writing • Introduction to Probability and Statistics • SAT • Computer Science III	• Robotics • Introduction to Calculus • Computer Science IV



FIRST YEAR ACTIVITIES

In summer 2017, first year students learned to make websites using HTML and CSS computer languages. They learned to use tags in HTML and CSS to design and customize a website of their own on a STEM topic which focused their summer research. In engineering classes, first year students built bottle rockets, gliders and mouse trap cars to complement lessons related to the change in energy, force and aerodynamics. A competitive aspect for many of these projects further enhanced the development of teamwork and leadership skills.

SECOND YEAR ACTIVITIES

Computer Science students were introduced to fundamental concepts of programming such as coding and logical operations. In Engineering, students demonstrated their proficiency in circuitry by constructing a LED, connected to sensors to illuminate in the absence of light. Students also develop an enriched understanding of magnetism by creating a motor using common household items. Furthermore, students were introduced to modern ocean exploration methods through instruction in neutral buoyancy and Boolean operations.

THIRD YEAR ACTIVITIES

In Statistics, students utilized HP Prime Calculators to enhance their knowledge of statistical analysis and algebraic understanding. In Computer Science, students wrote a series of programs to instruct machines with simple tasks, demonstrating the progressing of their coding skills. Fostering their ability to communicate their findings and career proficiency, students in Technical Writing developed professional documents such as resumes and memoranda.

FOURTH YEAR ACTIVITIES

In Computer Programming, students familiarized themselves with the inner components of a computer before they were introduced to programming concepts and the application of mathematical principles. In Robotics, students utilize VEX Robots to apply their knowledge from Computer Programming in the implementation of complex behaviors. For Intro to Calculus, students studied the properties of limits and grasped the concept of derivatives.

ENGINEERING DAY/CAREER DAY

Engineering Day empowers students by providing opportunities to engage with STEM professionals through panel discussions and presentations about advanced concept applications and career fields. This summer, Engineering Day featured a live stream Q&A uplink with a maritime research vessel, E/V Nautilus. Students were presented with a special opportunity to speak live with a researcher deployed in the Pacific Ocean, off the coast of California. Through Nautilus Live, a 24-hour streaming program, these students and a global audience had the opportunity to see the everyday discoveries and revelations of the mysteries of the sea.