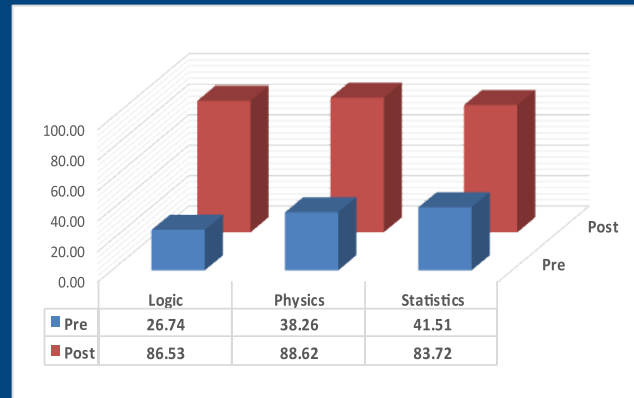


Houston PREP Student Demographics

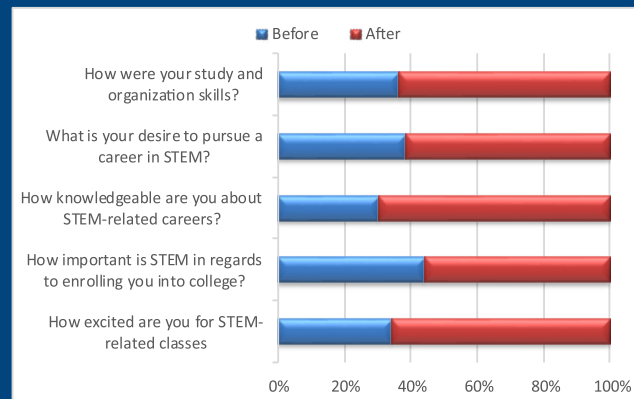
Hispanic	49%
Asian	28%
African American	16%
White	3%
Other	4%

Career Path of Houston PREP Alumni

Engineering	39%
Science	36%
Technology	18%
Mathematics	7%



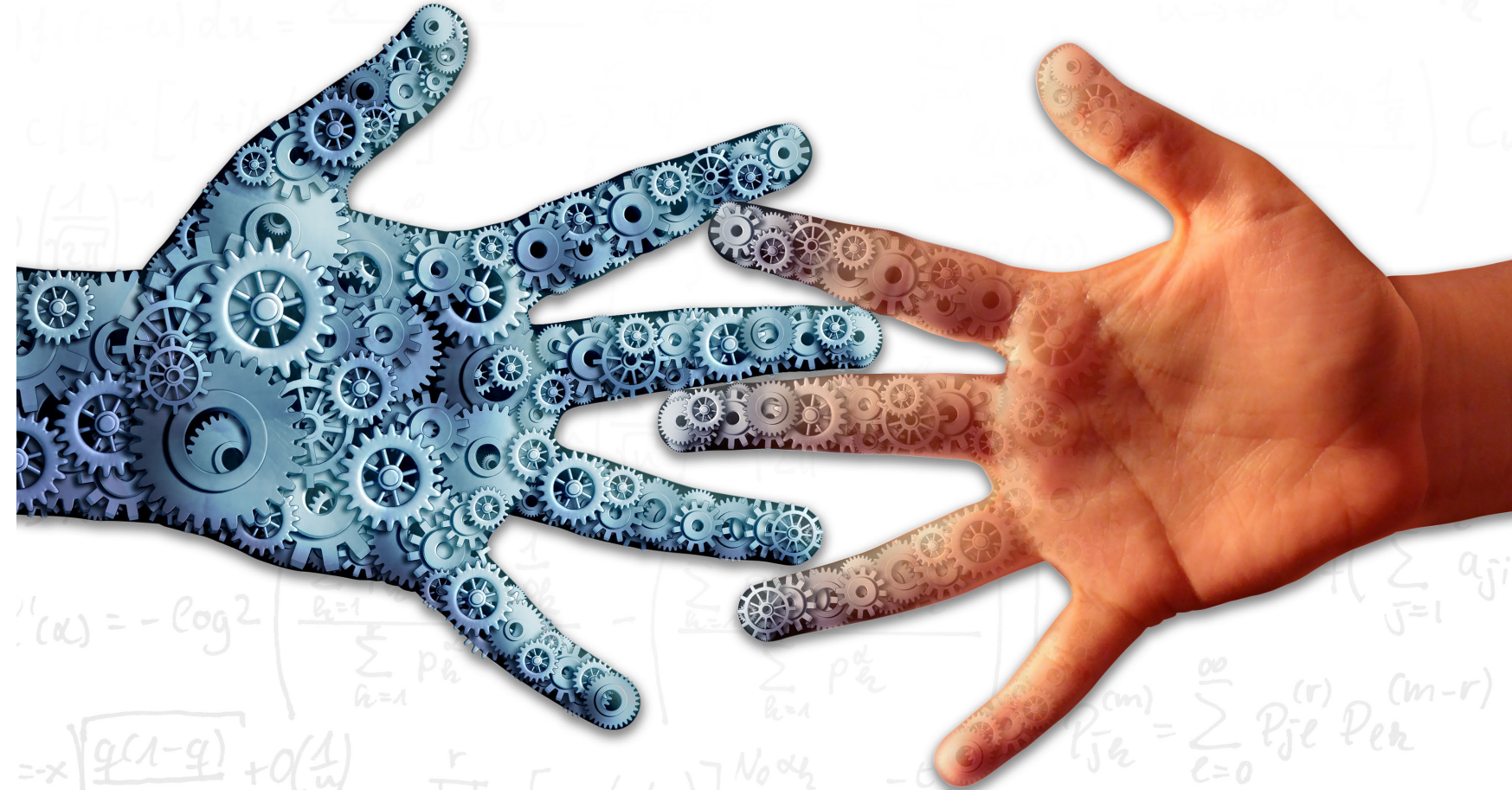
Pre/Post Test Results



Pre/Post Survey

Houston PREP

UHD
University of Houston
DOWNTOWN



Education Partners

- Aldine ISD
- Alief ISD
- Galena Park ISD
- Sheldon ISD
- Spring Branch ISD
- TexPREP - UTSA
- UHD College of Sciences & Technology

Corporate & Foundation Partners

- BP
- CenterPoint Energy
- CITGO
- Direct Energy
- The Powell Foundation
- Schlumberger

Public Sector Partners

- City of Houston - Summer Food Service Program
- NASA - Johnson Space Center
- National Science Foundation
- Texas Legislature
- Texas Department of Transportation

Houston PREP

University of Houston - Downtown
One Main Street • Houston, TX 77002
713-221-8207 / uhd.edu/prep

Houston PREP provides free challenging academic programs designed to motivate middle and high school students for success in advanced studies leading to careers in **Science, Technology, Engineering and Mathematics (STEM)**.

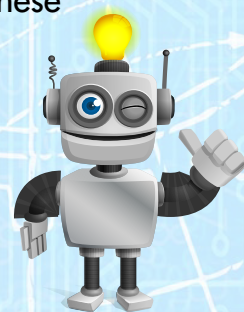


MESSAGE FROM THE DIRECTOR

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.

Thank you!

Sangeeta Gad
Director, Houston PREP



PROGRAM OVERVIEW

Houston PREP—an academically intense, mathematics-based summer program—has been part of the successful TexPREP initiative of The University of Texas at San Antonio since 1989.

As an extended education program for students who seek a career in STEM fields, the vision of Houston PREP is to provide innovative educational and technology-enabled approaches that empower students to become lifelong learners, problem-solvers, and decision-makers.

With a mission to provide a free, challenging academic program designed to motivate middle and high school students, who will ultimately pursue STEM. The goal is to increase the number of competently prepared Texas students by:

- **Introducing MIDDLE SCHOOL and HIGH SCHOOL students to professional opportunities in engineering**
- **Reinforcing academic preparation at the secondary school level**
- **Providing environments in which talented students are encouraged to learn, explore, achieve, and discover**



Engineering 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 research deployed in the Pacific Ocean on the maritime research vessel, E/V Nautilus. 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.



A recent survey of Houston PREP alumni revealed:

- 99.99% 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.**



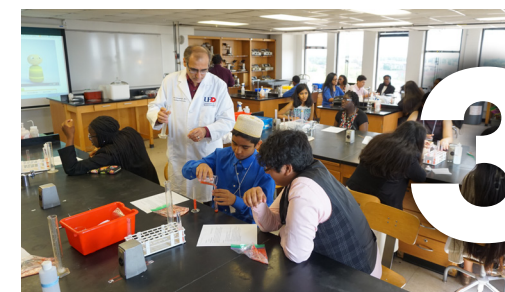
First-Year Activities - Engineering I, Logic and Its Applications to Mathematics, Problem Solving, Computer Science I

In summer 2017, first-year students learned to make websites using HTML and CSS computer languages and use tags in HTML and CSS to design and customize a website of their own on a STEM topic that centered on their summer research. In engineering classes, 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 - Engineering II, Algebraic Structures, Introduction to Physics, Computer Science II

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



Third-Year Activities - Technical Writing, Introduction to Probability and Statistics, SAT, Computer Science III

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 that demonstrated the progression 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 memorandums.



Fourth-Year Activities - Robotics, Introduction to Calculus, Computer Science IV

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 computer programming knowledge in the implementation of complex behaviors. For Intro to Calculus, students studied the properties of limits and the concept of derivatives.