

# HMRI Launches STEM Program for PUSD Students

Eight 11th and 12th graders from two Pasadena Unified School District high schools are gaining potentially life-changing educational opportunities this summer in Huntington Medical Research Institutes' (HMRI) inaugural biomedical research high school STEM (Science, Technology, Engineering and Mathematics) program.

Launched in June, the six-week program is providing invaluable opportunities for students to learn from and collaborate with HMRI research scientists and staff, a STEM instructor and undergraduate teaching assistant mentors from three colleges and universities.

According to HMRI associate professor Dr. Nicole Purcell and director of HMRI's inaugural high school STEM program, its mission is to educate and encourage the next generation of outstanding physicians, scientists and researchers to follow their interests and continue to grow and develop toward science-related careers. "HMRI's STEM program, which is geared toward students who may not otherwise have access to top-tier interactive educational programs in these fields, is providing participants hands-on opportunities to explore new and uncharted solutions to some of healthcare's biggest challenges like heart disease, Alzheimer's and mental illness — and have fun in the process," Purcell said.

Program instructor Jacqueline Fonseca, who is passionate about education, equal access and making real change happen in the field of science education in low-income communities, said that classes convene virtually and "live" (as COVID-19 protocols allow), Mondays through Fridays from 9 a.m. to 1 p.m. through July 30.

"While we prefer meeting in person whenever possible, there are amazing virtual lab activities available now because of the need to be socially distant," she said. "With so many different lab types available, students get experiences they might not otherwise be able to have in a lab setting."

Fonseca elaborated that different subject matter is explored each week and includes: research, methods and instrumentation; anatomy (brain, heart, lungs); pathology and imaging; genetics; and mental health. The program will culminate with research projects and a symposium event on the final day.

Students also are benefiting from the oversight of HMRI Education program manager Dr. Carlos Aguirre and undergraduate teaching assistants Ciannah Correa of Pomona College, Hunter McKenzie of Whitworth University and Sidhant Umbrajkar of UCLA.

Current student enrollees, who were selected for the program through an application process that included teacher rec-



Photos courtesy HMRI

The eight Pasadena Unified School District high school students enrolled in HMRI's inaugural Biomedical Research High School STEM program, along with their STEM instructor, teaching assistants and HMRI's Education Program Manager are suited up for dissection day. Pictured are Haydee Angeles (front, from left), Elizabeth Alvarez, Isaiah Gilmore, Jacqueline Fonseca (STEM Instructor) Ciannah Correa (Teaching Assistant) and Dr. Carlos Aguirre (HMRI Education Program Manager). Back: Anthony Romero, Emily Martinez, Arleth Angeles, Amina Malone and Skylar Adams.



Isaiah Gilmore (top) and Skylar Adams (bottom) use a microscope to observe astrocytes, a type of brain cell important for axon guidance, synaptic support and control of the blood brain barrier and blood flow.



ommendations, include Skylar Adams and Anthony Romero of CIS Academy and Haydee Angeles, Emily Martinez, Elizabeth

Alvarez, Arleth Angeles, Isaiah Gilmore and Amina Malone of Marshall Fundamental Secondary School.



Emily Martinez marvels at the sight of the strawberry DNA extracted.

Having already conducted dissections, explored the human anatomy using endoscopes with a laboratory "squishy human body" to simulate an endoscopy and toured HMRI's labs, the students are giving the program rave reviews so far.

"We're delighted that this program is being so well received by the students," said HMRI President and CEO Dr. Julia E. Bradsher. "We can't wait to see how this experience will impact the students — and how long term, they will impact the world for good in the future."

Bradsher said that start-up funds from Pasadena residents Drs. Sonia and Neil Singla, along with a three-year grant from the Confidence Foundation, have made HMRI's STEM program for Pasadena high school students possible.

Sonia Singla, HMRI board member and chief administrative officer for Pasadena-based Lotus Clinical Research, expressed her support for HMRI's high school STEM program.

"STEM has always been the future and it's vital that all students have access to these types of programs," she said. "There is a generalized myth out there that science and technology is only for a certain type of student, and I want to debunk that and make STEM integral to all learners and curricula.

"I want kids to be exposed to STEM and demystify and normalize science and research. I want kids to know there is not just a prescribed path if they choose a career in science or medicine; there are many creative and innovative career choices in STEM. I'm thrilled HMRI chose to start a STEM program for local Pasadena kids ensuring all of our kids in our community have access and opportunities for a brighter future."

Bradsher said that over the past 40 years, HMRI has offered a Summer Research Program to some 515 undergraduate college students, many of whom have gone on to become physicians, scientists, engineers and researchers — some now holding prestigious faculty appointments at academic institutions around the world.

"Thanks to the generosity of Drs. Singla and the Confidence Foundation grant, HMRI is now realizing its goal of making a greater impact in the community by expanding our summer programming to include underserved high school students," Bradsher said. "We couldn't be more grateful to these generous donors."

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