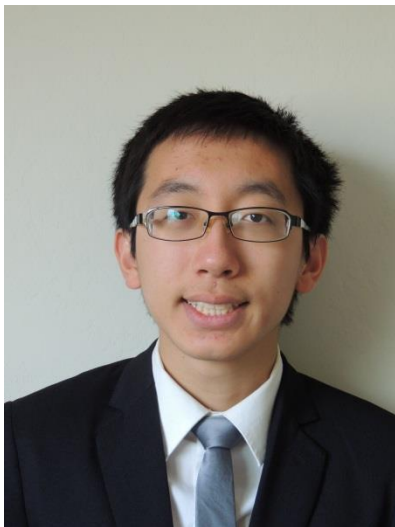


2015 SIEMENS COMPETITION IN MATH, SCIENCE & TECHNOLOGY
National Finalists – Individual Winners



NAME: ANDREW CHEN

SCHOOL: Mission San Jose High School, Fremont, Calif.

YEAR: Senior

HOMETOWN: Fremont, Calif.

PROJECT: Enhancing Imaging Resolution and Depth With Adaptive Optics Focal Modulation Two-Photon Microscopy

FIELD: Engineering

MENTOR: Dr. Xiaodong Tao, University of California, Santa Cruz, W. M. Keck Center for Adaptive Optical Microscopy

“With my project, the world can observe the dynamic interactions of live biological tissues and make improvements to medicine and biology.”

Andrew decided to focus his scientific research on vision and eye care because, as a glasses wearer, he understands just how important sight is to our daily existence. When faced with the prospect of losing his own vision, he decided to search for ways to improve imaging and the visualization of fine structures within biological samples. Andrew was able to develop a new way to carry out *in vivo* microscopy to better see the fine structures in deep tissue. He hopes that this research will help doctors and biologists to diagnose and treat deadly diseases like Alzheimer’s or cancer.

Andrew hopes to combine science and entrepreneurship to develop technologies that can positively impact the world. His childhood hero was James Bond because he admired the way that the agent was able to do the impossible through use of powerful devices.

As president of his high school’s Physics Club, Andrew is able to pursue his interest in STEM through a number of competitions. He likes physics because it helps to show the connections between different phenomena and forms the basis for most technologies. Andrew also founded the Emerald Ensemble, a volunteer band, and plays the trumpet and piano.