



Dawn Hester, M.A., Westview High School, San Diego, California. After teaching at an inner city school in Northern California for 9 years, Dawn moved to San Diego and took on the challenge of developing the AP Physics C curriculum at Westview HS. She has taught the calculus based Mechanics, and Electricity and Magnetism on their 4x4 schedule ever since. She used her background in biomechanics to develop an engaging and strong lab based curriculum and has encouraged its growth from the initial 14 students in 2003 to its current 120 students enrolled in both calculus based Mechanics and E&M in 2017. She is also the faculty advisor for Westview's comprehensive robotics program and manages student leaders and industry mentors to guide 80+ robotics students through a year-long program that participates in FIRST Robotics Competitions (FRC), mentors FTC, FLL and FLL Jr teams and provides STEM outreach. She is passionate about how Westview models open access and inclusion, encouraging students to challenge themselves socially and academically.

## MIT SEPT 2015

### Dawn Hester, Westview HS



Dawn participated in MIT SEPT 2015. Here is a brief summary from her experience:

Overwhelmed with what I learned from the MIT professors and star struck with their accomplishments and research, I am still in awe. Entrepreneurs, a Nobel Laureate, famous inventors in the news with cutting edge innovations as well as inspirational women scientists and leaders!!!! They all fostered creativity across disciplines and were so humble and welcoming to us, inviting our questions and offering assistance and support to fuel our classrooms. These topics were covered: ....The coldest place in the universe - Bose-Einstein Condensate and research beyond....Viruses genetically engineered with carbon nanotubes used as batteries, solar cells and even in cancer therapeutics....Voyager 1 interstellar medium discoveries....Exoplanet exploration using star shades....Street fighting math to remind us of practical problem solving and estimations as a tool for discovery.... Biomimetrics, the cheetah lab robotics....Extreme electrochemistry with liquid batteries to store solar and wind energy....New discoveries in material science and magnetic applications....the “ Mathematical Universe” and insight to unanswered questions in physics....New block programming languages....Mechanical engineering experiences during hands on exploration....Memory and neuroscience research....MIT nuclear reactor research....and more.

Outside of lectures during the day, we enjoyed rich discussions on teaching practices, shared grant funding opportunities, STEM integration projects, differences in standards, and methods of integrating science and engineering

practices. I was among 26 educators from around the world that learned so much from each other. Each evening, my roommate (from Italy) and I researched the next day's professors, enjoyed our discussions, and anxiously waited the coming day with total excitement.

From my MIT SEPT experience, these are the areas that inspired me and areas that I will continue to share with my students and colleagues: 1) MIT fueled us to continue teaching, mentoring and inspiring the next generation of inventors. 2) We were up close and personal with REALLY COOL SCIENCE by way of visiting research labs, having discussions with the world renown MIT faculty which allowed us to share these discoveries with our students in a very personal way. 3) From the MIT faculty and other SEPT teachers, we shared creative and best practices for problem solving, adding to our kit of tools to work with our students back home. 4) MIT faculty guided us through resources and newly developed online tools so we can continue to learn and implement MIT innovations after SEPT. 5) An enhanced appreciation and detailed conversations with women faculty on ways to promote diversity with women in science.

Thank you for the opportunity to participate.  
Dawn Hester