



QuarkNet

Stories from the classroom

Attending the summer QuarkNet program over the last few years has been an amazing opportunity to learn about particle physics. I enjoy the lectures explaining how the detectors work, the classification of subatomic particles, and learning about how particles are discovered. It is the best education workshop that I have gone to because I was not only taught about how real science was being done, but there were many hand-on activities that helped explain the key concepts at a level that both my students and I could understand. The quark puzzle, determining the mass of the top quark, and the Rutherford experiment are the three activities that I make sure that I get to each year that really fit in well with the material that I am covering in physics. To get students interested I also set up the particle detector in the aquarium, and at some point in the year I talk about LIGO and gravitational waves, which QuarkNet has focused on in the past. I still do not have an interferometer in the classroom, but there are some excellent videos online about LIGO and how an interferometer works. I have also had the opportunity to take a small group of students to OSU to go through the masterclass where the professors help lead the students through determining what type of event occurred in the detector. The students then get to see first-hand how their data can be combined to see what could be a statistically significant peak in the data that would represent the possibility of a particle with that mass. My students enjoyed the masterclass, and Professor Haley really helped inspire my students. He was very open to asking and answering questions, and he even encouraged a few of my students to email him. Two of the students on the trip decided to take AP Physics this year because of the trip. The QuarkNet program has increased my knowledge about particle physics and provided relevant activities that help give me confidence to teach some of the concepts to my students. QuarkNet also provides other great resources like the particle adventure that I can tell interested students about so that they can go deeper than what we will cover in the class. I am very grateful for the opportunities that QuarkNet has provided, and attending the workshop has significantly improved my class.

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