

2016 Annual Quarknet report for Syracuse University

During 2016, the Syracuse University group was pleased to host two days of LHCb MasterClasses, which enabled about 55 high school students to learn about particle physics and the Large Hadron Collider. On each of two days, we hosted students and their teachers from two local area high schools. The four high schools are: Liverpool HS, Weedsport HS, Port Byron HS and Fayetteville Manlius HS. Students spent the morning attending presentations by Profs. Steven Blusk and Matthew Rudolph on particle physics and the LHC (see Fig 1 below).



Fig. 1: Prof. Matt Rudolph describing the concept of time dilation (photo by Prof. Blusk).

In the afternoon, students were engaged in a computer-based activity where they had the opportunity to work with LHCb data. Feedback from teachers indicated the students enjoyed the day's events.



Fig. 2: Students from Weedsport and Liverpool high schools in the computing lab working through an activity using LHCb data (photo by Prof. Blusk)

On July 6-7, we hosted a Quarknet workshop. We were pleased to welcome 7 new high school teachers to Quarknet, along with 1 “Quarknet veteran teacher” (see Fig. 3).



Fig. 3: Participants in the 2016 Quarknet workshop at Syracuse University: Bottom row: Shane Wood, Prof. Matt Rudolph, Prof. Steven Blusk, Prof. Mitch Soderberg. Top row: Alexa Perry, Patricia Madigan, Linda Wicks, Susanne Gardner, Anne Huntress, Stephanie Metz-Miller, Debbie Gremmelsbacher, Richard Heffernan, and Richard Adler.

We were also delighted to have Shane Wood and fellow Debbie Gremmelsbacher from Quarknet at the event. Shane did a spectacular job leading the CMS data workshop, which featured several hands-on and computer-based activities. Profs. Blusk, Rudolph and Soderberg also attended and provided support and facilitated discussions on various particle physics topics. The two-day program can be found at: <https://quarknet.i2u2.org/content/syracuse-cms-data-workshop-2016>. Figure 4 shows some of the high school teachers working through the CMS data activity, along with Prof. Rudolph providing additional explanations of the data.



Fig. 4: High school teachers engaging in the CMS data workshop on July 6-7 at Syracuse University. (photo by Prof. Blusk)

We expect many of the new teachers will return for future Quarknet activities. We also have a pool of about 10 additional teachers who expressed interest, but were not able to attend this summer.