

Kansas State University QuarkNet Center, 2018-2019 Annual Report

The K-State group held a week-long workshop and a Master Class (and Master Class Orientation) in the last fiscal year.

In addition, we are also coordinating a research project with QuarkNet Fellow Martin Shaffer that involves most of our CRMD teachers working with their students to correlate muon rates with atmospheric temperature and pressure changes (available from NASA) as weather fronts move through Kansas and Arkansas. Preliminary results were presented in a poster at the 2019 International Conference on Cosmic Rays.

The Master Class Orientation was held on March 2, 2019 and was attended by 12 teachers.

The Master Class was held on April 5, 2019 and was attended by 11 teachers and 66 students. KSU Physics hosted a short program of demos and hands-on physics activities and we also toured the KSU Nuclear Reactor. Most KSU HEP and Cosmology graduate students helped with the Master Class activities.

A 4 long-day workshop was held at KSU on May 28-31, 2019. This was attended by 9 teachers. The workshop was devoted to cosmic ray muon detectors and all teachers brought their detectors and took data and measured the speed of muons, closing with short talks of their observations. The teachers plan to keep their cosmic ray detectors running in their schools. Martin Shaffer ran the CRMD activities and Glenn Horton-Smith gave talks on quantum mechanics.

On other fronts, KSU QuarkNet teachers continued to avail themselves of national QuarkNet and other HEP-related opportunities seeded by QuarkNet. Two teachers participated in the 2019 Data Camp at Fermilab.

The KSU group remains strong in its sixteenth year of existence. Approximately two and half dozen teachers participate, a core group of a dozen or so regularly, and the rest at the rate of once every other meeting. We continue to specialize in serving small rural high schools throughout the state of Kansas and have now started to get some inner-city high school teachers from Kansas City, MO, as well as one from Arkansas. Plans for 2019-2020 include an early spring 2020 Master Class orientation workshop and participation in a Master Class in late spring 2020.