**Mississippi QuarkNet Report 2023**

The University of Mississippi QuarkNet program for 2023 included six teachers from the northern Mississippi region. The group includes both male and female teachers with a variety of experience (including one who is starting her first year this fall) and background. Three of the teachers have attended regularly in the past and three are new or have not attended recently.

The 2023 program centered primarily on two events. The first of these (<https://quarknet.org/content/belle-2-masterclass-ole-miss>) was an official Belle II Masterclass event held on campus at the University of Mississippi on March 24. Jake Bennett, who leads the UM QuarkNet program, coordinated the event with researchers at Iowa State, the University of Hawaii, and Cinvestav (Mexico City). Each institution hosted a masterclass focused on an introduction to particle physics and hands-on activities using Belle II data. Then a joint video conference was held among participating institutions so students could great one another and join take part in a quiz covering the material they learned that day. At UM, two high school classes took part in the event, with a total of about 40 students participating. The teacher for one of the classes is joining the UM QuarkNet program



The second QuarkNet event featured a public Belle II Masterclass event run by Ken Cecire as a pilot workshop to incorporate Belle II into the official QuarkNet Masterclass program. UM QuarkNet teachers were invited to join and stay in Oxford for a workshop the following day focused on the basic understanding of and evidence for dark matter. The workshop featured a review by Jake Bennett (<https://relativity.phy.olemiss.edu/~jbennett/2305_QNDarkMatter.pdf>) and several hands-on activities that teachers can use in their classrooms to introduce the material to students. Four QuarkNet teachers were able to join.