

Abstract Submitted
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QuarkNet: Benefits for Teachers, Their Students and Physicists¹

MARJORIE BARDEEN, Fermilab — The QuarkNet Collaboration has forged non-traditional relationships among particle physicists, high school teachers and their students. QuarkNet centers are located at 50+ universities and labs across the U.S. and Puerto Rico. We provide professional development for teachers and create opportunities for teachers and students to engage in particle physics data investigations and join research teams. Students develop scientific knowledge and habits of mind by working alongside scientists to make sense of the world using authentic experimental data. Our program is based a classroom vision where teaching strategies emulate closely the way scientists build knowledge through inquiry. We look at how student engagement in research and masterclasses develops an understanding about the process of scientific discovery and science using current scientific data. We also look at ways and to what extent teachers provide scientific discovery and science practices for students and how QuarkNet contributes to the professionalism of participating teachers. Also, we describe success factors that enhance local center programs and describe important benefits of the program that flow to university faculty.

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