

AAPT2 Room 178F

moderator: Nick Nicastro

8:00-8:25

Masterclass: Possibility for Teaching the Nature of Science?

Michael J Wadness, Medford High School/UMass Lowell/QuarkNet

This study addresses the problem of science literacy, focusing specifically on students' lack of understanding about the nature of science. Research is in progress to determine if QuarkNet's Particle Physics Masterclass provides a fruitful program for students to learn about the nature of science. The Masterclass is a national program in which students come to a local area research institute and interact with particle physicists through lectures, informal discussions, and work together to analyze real particle physics data. This presentation highlights the research questions, methodology, and the preliminary results of the study.

8:30-8:55

Physics Theorynet Outreach Program

Brent Nelson, Northeastern University

Physics TheoryNet is an analog to the very successful QuarkNet program initiated in 2004 and supported by the national Science Foundation. The mission of TheoryNet is to foster interaction between Boston area high school teachers and local particle theorists and cosmologists. The main component is the direct interaction between physicists, students and teachers through presentations, demonstrations and question and answer sessions during regular class hour visits and after class. Students are exposed to frontier issues in modern physics and are given an opportunity to have curiosity-based questions answered in real time. At the present time the program involves roughly ten high-school instructors and ten local faculty members, but it is expected to grow due to its initial success. I will describe the goals of Theorynet, its achievements and challenges we have faced in expanding the program.

9:00-9:25

E. O. Lawrence and the Development of the Cyclotron

Rick Dower, Roxbury Latin School

From 1930 to 1950 Ernest Lawrence at University of California, Berkeley and his team developed a series of ever larger cyclotrons that played leading roles in nuclear and particle physics. From the production of new elements and new radioactive isotopes of familiar elements to the exploration of medical therapies to the discovery of the neutral pion, Lawrence and his cyclotrons led the way. With archival photos, I will review the history of Lawrence's work and offer associated worksheets for students (with solutions for teachers) that may be used by teachers who want to present this material in their courses.