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Plenary - Some things physicists have learned about physics education by doing research in cognitive science

Wednesday, 11 July 2012 09:30 (1 hour)

Abstract content
   (Max 300 words)

Education is something that concerns all faculty in university science departments. Physics as a discipline has been a leader in taking that general concern and transforming it into a sub-discipline of the field: Physics Education Research (PER). PER is based on cognitive science, and in fact some important aspects of cognitive science (such as studies of experts versus novices) have been done with physics as the context for the investigations. Today, there are a number of PER groups in physics departments around the world, doing research in applied cognitive science that focuses on issues of teaching and learning physics. These physicists are publishing papers in peer-reviewed journals, getting grants, and graduating students with Ph.D.s, just like every other area of physics. In this talk I will touch on several findings from cognitive science that have huge implications for how we teach physics, as well as some results from PER that are leading the way in university science education across all fields.

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