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9:00 AM - 12:10 PM STEW 310

S46: Physics Education Research for Chemistry Instructors: Facing Joint Challenges and Practical Concerns - Session 1 of 2

Tom Greenbowe (Iowa State University, USA)

Chemistry educators and physics educators are concerned with many of the same issues about teaching and learning science. Physics education researchers have carried out systematic discipline-based studies of student learning. These studies incorporate a theory base, a careful collection and analysis of data, and interpretation of results that can be generalized. These investigations have revealed a wide gap between the objectives of most physics instructors engaged in traditional forms of instruction and the actual level of conceptual understanding attained by the majority of their students. This symposium provides an opportunity for physics education researchers to share the advances that have been made in their field with chemistry educators.

10:55 David Meltzer P472: Investigations into student learning of thermodynamics

11:25

P472: Investigations into student learning of thermodynamics*

David Meltzer (University of Washington, United States)

Recent research into student learning of thermodynamics has helped to identify certain common learning difficulties faced by most students in introductory courses. These difficulties are related

to basic concepts prominent in both physics and chemistry courses, such as energy, heat, work, entropy, and the laws of thermodynamics. I will discuss some of this research, along with pedagogical strategies that are being developed to address students' learning difficulties. I will emphasize the ways in which our findings are relevant to instruction in college chemistry courses.

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