



## "Nanoscience in the 21st Century"

**October 15-16, 2004**

**[Physics Department, Bradley University](#)**

**Peoria, Illinois 61625**

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### **"Improving Physics Teaching through Physics Education Research"**

**David E. Meltzer, Department of Physics and Astronomy, Iowa State University**

Invited Presentation, 10:00 am, Saturday, October 16

## "Improving Physics Teaching through Physics Education Research"

David E. Meltzer

Department of Physics and Astronomy, Iowa State University

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Physics teachers are always striving to improve the effectiveness and efficiency of their teaching methods, and to find the best possible curricular materials to use with their students. In recent years, physicists have begun to turn this effort to improve instruction into a systematic research project. By carrying out careful investigations of student learning in physics, much insight has been gained into the teaching process. Based on this work, new curricular materials and instructional methods are being developed and tested. I will outline the goals and methods of this research, and describe its connection to learning in the classroom. With examples drawn from investigations we have carried out at Iowa State University, I will illustrate the research process and show how it can lead to improved instruction.

