

# **TUFTS UNIVERSITY**

## **Physics and Astronomy Colloquium**

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**University of Colorado at Boulder**

**“Physics Education Research: a resource for educational transformation at a critical time”**

After decades of research into student learning, assessments, and curriculum design, physics is considered one of the leading fields engaging in discipline-based educational research (DBER). Simultaneously, unprecedented national attention is now being paid to the outcomes of and needs for DBER. After framing the national-scale scene of physics education, and how physics education research (PER) is positioned to contribute to the national dialog, I will review the growth of our own program at CU, and my own work at the individual, the course, the departmental scales. I will present samples of these scales reviewing: novel work on student use of representation and analogy in physics learning, demonstration of the impacts of teaching interpretive themes on student learning of quantum mechanics in our modern physics courses, and conclude with how subtle faculty choices influence something as canonical as clicker use in our introductory physics sequence. Time and interest permitting we can explore the development of a framework for understanding (and effecting) sustained change in undergraduate physics education.

graduate physics education.

***3:00 pm***

***Friday, September 7, 2012***

***Robinson 253***

***Medford Campus***

***Refreshments served at 2:30 in The Knipp Library, Room 251***