Dr. Steven Pollock
Professor, Physics, University of Colorado

Tuesday, October 24, 4:10 pm
Webster Hall, Room 17

Dr. Pollock has been a leader in developing tools and instructional formats to increase student engagement and raise student success in both introductory and upper-division undergraduate physics courses. His focus has been on the use of research/evidence based approaches to improving instruction. Among Dr. Pollock’s many awards, he received the 2013 U.S. Professor of the Year Award for Doctoral/Research Universities.

"A research-validated approach to transforming upper-division physics courses”

At most universities, including the University of Colorado, upper-division physics courses have been taught using a traditional lecture approach that does not make use of many of the instructional techniques that have been found to improve student learning at the introductory level. We are transforming upper-division courses (E&M, Classical and Quantum Mechanics) using principles of active engagement and learning theory, guided by the results of observations, interviews, and analysis of student work at CU and elsewhere. I will outline these reforms including consensus learning goals, clicker questions, tutorials, modified homework, and more, as an example of what a transformed upper-division course can look like, and as a tool to offer insights into student difficulties in advanced undergraduate topics. We have evaluated the effectiveness of these reforms relative to traditional courses, based on grades, interviews, as well as attitudinal and conceptual surveys. We conclude with a brief overview of the effectiveness of these reforms and the current challenges facing undergraduate STEM education.

Please meet our guest speaker at a reception to follow, 5:00 – 6:30 p.m. in the foyer on floor G above the lecture hall

Host: J Thomas Dickinson