The Center for Scientific Teaching and
The Department of Molecular, Cellular and Developmental Biology
of Yale College present a

Science Education Seminar

Dr. Joe Redish

Professor of Physics at the
University of Maryland
in College Park

"How should we think about how our students think?"

For 35 years Discipline-Based Education Research (DBER) has been trying to apply a scientific approach to the question, "How can we most effectively teach science?" Much progress has been made, but if we are to do more than classroom engineering, we need to explore such intellectually engaging questions as, "How do our students think about and learn science?", "What does it mean to understand something in science?" and, "What do we really want our students to learn from our science classes?" To address questions like these, we need to do more than observe student difficulties and build curricula. We need a theoretical framework – a structure for talking about, making sense of, and modeling how one thinks about, learns, and understands science. In this talk, I outline some aspects of the Resources Framework, a theory for talking about complex thinking and learning that builds on modern developments in neuroscience, psychology, and linguistics. As examples of how this framework yields new insights, I consider epistemological framing — students' perceptions of the nature of the knowledge they are learning and what knowledge is appropriate to bring to bear on a given task and show some implications for teaching physics to biology students.

Monday, November 18, at 2:00 pm
Sloane Physics Laboratory (SPL) 59
217 Prospect Street
Refreshments provided

Center for Scientific Teaching Yale cst.yale.edu

Science Education Seminars are made possible by the
Mrs. Hepsa Ely Silliman Memorial Fund

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