

# DISTINGUISHED LECTURER SERIES

Sponsored by The Center for Research in Mathematics and Science Education

## **Why Do Science and Mathematics Educational Research Look Different?**

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Abstract: I consider differences in the way science and mathematics learning are researched. One central motivation for the topic is that "conceptual change" names a dominant approach to researching science education, but it is much less visible in mathematics education. This might seem to be an epistemological question about the nature of mathematics vs. the history of these "separate" tracks of educational research, or even concerning different traditions of instruction. My tactic will be to lay out some possible hypotheses. Then I will present elements of my personal framework for studying science (math) education, including an orientation toward "knowledge in pieces," and a theory about the essential nature of technical concepts. In view of these commitments, some judgments of plausibility may be made. Possibly contentious points are (1) that mathematics is in no obvious way different from science, for example, in terms of level of abstraction, and (2) that the role of experiential knowledge in both has been a matter of instructional tradition (and possibly a matter of instructional technology), not an essential difference.

**Friday, May 4, 2007**

**12:30–1:30pm**

Student Services Room 1500

Reception at Noon outside SS 1500

**Directions:** <https://sunspot.sdsu.edu/map/>

**Questions?** Contact [Lisa.Lamb@sdsu.edu](mailto:Lisa.Lamb@sdsu.edu)

<http://www.sci.sdsu.edu/crmse>

**Andrea diSessa** is a member of the National Academy of Education. His research centers around conceptual and experiential knowledge in physics, and principles for designing flexible and comprehensible computer systems. His current work focuses on student ideas concerning "patterns of behavior and control" and the development of the concept of force. He has published widely, including the book, *Changing Minds: Computers, Learning, and Literacy*. He earned his Ph.D. in Physics from MIT and his A.B. in Physics summa cum laude from Princeton.

