Professional Development Interventions in a Large-scale Randomized Controlled Study of Middle School Science Learning
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Abstract:
In this talk we focus on the design, implementation, and assessment of two teacher professional development interventions created to instantiate two arms of a three-arm RCT involving over 180 schools. The primary aim of the overall project, which was carried out by the IES-funded Research and Development Center for Cognition and Science Instruction, is to study the impacts of modifications made to two common middle school science curricula based on principles derived from cognitive science research. Two parallel RCTs with the same research design were conducted by the Center on the two curricula (Holt, a typical textbook based curriculum, and FOSS, an investigative kit-based curriculum). In the cognitive science arm of each study, teachers participated in extended professional development designed to help them understand the learning principles and implement the modified curriculum with fidelity in their classrooms. A second arm of each study involved an equal number of hours of content-focused professional development designed to deepen teachers’ own knowledge as adult learners of science content associated with their curriculum. This arm of the study served as an intervention in its own right as well as a control condition for the professional development implemented in the cognitive science arm. Teachers from schools randomized to the third arm of each study did not participate in any professional development and taught their “business as usual” curriculum. In this session we will discuss the principles used to design the two professional development interventions, considerations in implementing them successfully, measures used to assess their impacts, and some findings from data analyses in progress.