Title: Designs for Developing Interventions to Improve Reading for Understanding

Current efforts to improve the educational outcomes of all U.S. students rest on the ability of students to read complex texts in all content areas with deep understanding. This session includes presentations by three research teams working as part of a large, interdisciplinary network charged with an accelerated program of studying the basic processes that support reading for understanding; developing and refining new interventions; and providing evidence of the efficacy of the fully developed interventions for improving the language and literacy skills of students from pre-kindergarten through high school.

Design studies provide an important context for addressing the theme of this SREE conference in that the consideration of both confirmatory and contradictory evidence is an integral component of iterative cycles leading to a fully-developed intervention. Researchers may encounter challenges in using findings for the next phase of development due to small sample sizes and/or the collection of extensive qualitative data from multiple constituents. This session has a dual focus -- it presents lessons learned toward improving reading for understanding across the curriculum as well as methodological insights in designing studies and interpreting findings to provide good evidence for intervention design.

The development of feasible and powerful interventions is supported in this effort through conduct of a variety of types of design studies based on the specific purposes for which they are conducted. Some design studies consist of small-scale, tightly-controlled experiments to explore the malleability of particular targets of interventions. Other design studies gather in-depth observational data to elucidate the important features of interventions. Still others conduct studies to gather evidence as they gradually add components to the intervention and examine the effect on student skills, feasibility and utility. In all cases, the studies are conducted in the context of iteratively designing, testing, and refining the intervention in classroom contexts.

The first paper describes a design experiment to test whether dialect shifting among African American students is malleable in elementary school. Researchers conducted a design experiment to test two different methods of improving dialect shifting, and compared the results to a control group. They used findings to create a fully developed intervention to improve dialect shifting and study the impact on reading skills.

The second paper describes design studies used to develop interventions to improve reading for understanding in English language arts and social studies among secondary school students. The research team conducted four cycles of iterative development, adding additional components of the intervention at each cycle. The paper highlights important lessons learned in regard to collaborating with teachers and enhancing the core components of the interventions.

The third paper describes a design study used to develop modules to improve skills in evidence-based argumentation as a means of improving understanding of multiple text sources in history, science, and literature. This presentation describes how several cycles of design, implementation, reflection, and redesign of the modules were conducted; shares lessons learned in improving the
modules and associated professional development; and discusses analytic methods used to make decisions based on evidence from extensive observational data.