

## **The Role of the Institutional Setting in Teachers' Development of Ambitious Instruction in Middle School Mathematics** *Kara Jackson, Paul Cobb, and Kristin McGraner, Vanderbilt University*

**Question(s) for Discussion:** How do aspects of the school and district settings in which teachers work (e.g., teacher networks, accountability relations) impact their development of ambitious instructional practices in middle-school mathematics?

**Session Description:** The objective of this session is to describe how the institutional setting of teaching mathematics affects middle-school mathematics teachers' development of ambitious instructional practices (i.e., practices compatible with NCTM's 2000 Standards). The PIs of three DR-K12 projects will report for 15 minutes each on analyses related to this focus, followed by a 30-minute discussion with the audience. All three presentations (described below) suggest institutional supports (e.g., teacher networks, accountability relations) that can support the improvement of middle-school mathematics instruction at scale. Middle School Mathematics and the Institutional Setting of Teaching (MIST) is an ongoing longitudinal study of four, large, urban districts that are attempting to implement ambitious instructional reforms in middle-school mathematics.

The four districts are all responding to the demands of high-stake accountability by implementing reasonably coherent sets of policies that encompass curricula, formal and job-embedded teacher professional development (e.g., teacher learning communities, mathematics coaches), and school instructional leadership in mathematics. The PI will report on empirical analyses that compare principals', coaches', and teachers' actual practices with those envisioned by district leaders and specified in district policies. The analyses account for differences between intended policies and actual practices both between districts and between schools within districts, and contribute to our understanding of how institutional settings influence the enactment of district policies for principals as instructional leaders, mathematics coaches, and teacher learning communities. Equity and Access to High-Quality Instruction in Middle School Mathematics is a SGER project that focuses on issues of equity and access in the context of the MIST project.

The PI will report on a cross-case analysis of two schools in the same district that clarifies how aspects of the institutional setting (e.g., quality of the curriculum, quality of professional development, opportunities to collaborate with colleagues, relations of accountability and assistance) mediate the extent to which teachers who have sophisticated visions of mathematics instruction actually support students' learning equitably in the classroom. The analyses suggest institutional supports (e.g., instructional leaders' expectations for instruction, opportunities to collaborate with colleagues around instruction) that can increase access to high-quality mathematics instruction for low-performing students. Assessment of Induction and Mentoring (AIM) is a study of the induction and mentoring of new middle school mathematics teachers in 11 districts in four states. The PI will report on the extent to which principals', colleagues', and mentors' visions of and expectations for middle-school mathematics instruction influence new teachers' development of visions of high-quality mathematics instruction. Findings indicate that new teachers overwhelmingly adopted either a traditional or a "form-oriented" (Spillane, 2000) vision of high-quality math instruction, and there was little evidence that principals', colleagues', and mentors' visions of and expectations for instruction influenced beginning teachers' development of instructional visions, largely because new teachers received weak messages from them about what counted as high-quality mathematics instruction. These findings suggest that efforts to improve mathematics instruction through teacher hiring and evaluation are unlikely to be effective unless accountability systems emphasize the importance of communicating clear, consistent expectations of what counts as high-quality mathematics instruction.