Accelerating Access to Algebra:
What We Know and Don’t Know from Current Research

Symposium Justification
SREE 2014 Spring Conference

For decades, policymakers, practitioners, and researchers have debated when students should take their first formal algebra course. Recent efforts around 21st Century Learning, college and career readiness, and the Common Core, have only intensified interest and concerns around algebra access. In the spirit of the conference’s theme, “The Role of Replication,” this symposium brings together four recent studies focused on the effects of expanding algebra access in either middle school or 9th grade. All four papers investigate policy shifts in different school districts to examine the effects of algebra acceleration. The symposium will draw attention to common themes around accelerated algebra effectiveness, including unintended consequences of the policy shifts, as well as the contextual and methodological details that make each study’s findings distinct.

The first paper (Clotfelter, Ladd & Vigdor) presents evidence on the effects of 8th grade algebra enrollment in the 10 largest school districts in North Carolina, with a focus on 2 of the 10 districts. The researchers examine timing of algebra enrollment changes between 2000-01 and 2005-06 to assess the effects of 8th grade algebra on students’ math achievement and course completion. They find that enrolling the lowest-performing students in early algebra introduces significant downside risks with little to no upside potential.

The second paper (Rickles, Phillips & Yamashiro) presents evidence on the effects of expanding 8th grade algebra enrollment in the Los Angeles Unified School District. The researchers examine increases in 8th grade algebra enrollment among low performing students during the 2004-05 and 2005-06 school years to test whether accelerated algebra access affects high school course-taking and performance. They find that algebra acceleration improved math course completion for low performing students and had mixed effects on math test performance. The authors posit possible reasons for why their findings are more positive, in general, than similar research conducted in other districts.

The third paper (Nomi & Raudenbush) discusses previous research on the effects of the 9th grade algebra-for-all policy adopted by the Chicago Public Schools (CPS). The authors also present new research on how the policy affected low-achieving students through expanded algebra access and changing classroom compositions. The findings suggest that negative effects of algebra acceleration are at least partially driven by changes in classroom composition. Such research highlights the need to understand the context in which these types of policies are implemented to better determine whether/when research findings are generalizable across studies.

The fourth paper (Dougherty et al.) presents evidence on the effects of using a prescribed algebra placement criterion for middle school mathematics placement in the Wake County (NC) Public School System (WCPSSS). The placement criterion policy is an alternative policy option to the “algebra-for-all” approach. Like algebra-for-all, however, the authors find that assignment based
on the placement criterion dampened mathematics knowledge for students at the cut-off for accelerated mathematics placement. They discuss possible explanations for the negative findings, along with issues pertaining to the policy’s implementation.

Dr. Michal Kurlaender (UC Davis) has agreed to serve as the discussant.