

### Project III Summary:

The last two decades have been a period of experimentation in education policy in the United States, aimed at achieving the twin goals of boosting achievement and closing achievement gaps between disadvantaged and other students. Nearly all evaluations have focused on estimating the *average* impacts of these policies on student outcomes; some have also examined how these average impacts vary across subgroups of students defined by such characteristics as ethnicity and family socioeconomic status. As argued at length in Projects I–II, developmental theory suggests that good and bad matches between student circumstances and intervention program design will produce heterogeneous program impacts, and that understanding the nature of this heterogeneity is essential for optimizing program design. Projects I–II propose tests of child/policy fit hypotheses with interaction models allowing for differential program impacts across population subgroups that are defined by baseline characteristics. The current project develops and implements complementary approaches to testing child/policy fit hypotheses: quantile treatment effect estimation and other distributional estimators. It applies these techniques to data from four different education settings that range from pre-kindergarten to high school. In the case of the Head Start Impact Study and a voucher program to enable poor children to attend private schools in New York City, we test hypotheses suggesting ways in which modest overall effects mask systematic impact differences for children with different academic skills and behavioral characteristics. A third analysis will test hypotheses regarding the effects of policies encouraging middle schoolers to enroll in Algebra on the distribution of student motivation and achievement. Our final tests are of the distribution of impacts on effort and achievement of high-stakes exit exams as well as low-stakes (to students) accountability tests. The fifth year of our project would involve outreach activities designed to promote the use of these techniques more broadly in education evaluations.

### Relevance:

We propose to apply and extend new methods to the analysis of effects of four educational interventions across the full distribution of children's outcomes. Our research will make these techniques more accessible for applied researchers while testing theoretical predictions from achievement goal and developmental theory. Our research has implications for the use of overall and subgroup specific mean-based impacts as ways of targeting interventions.