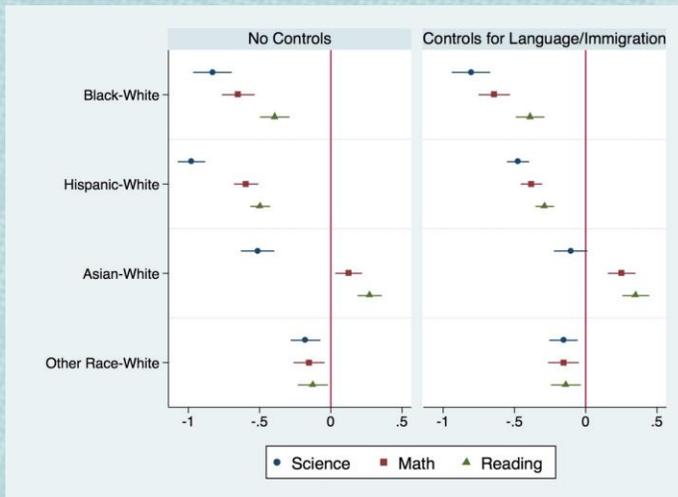
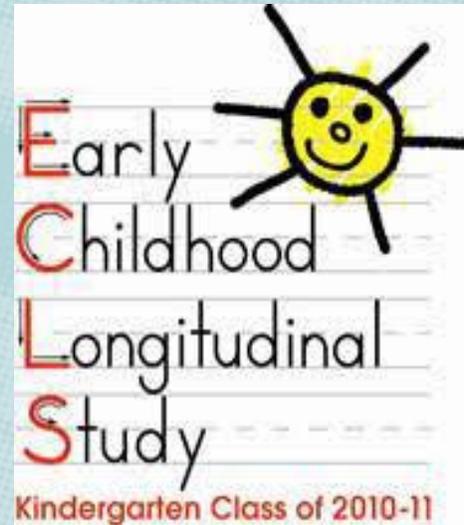


## Background



Science, Mathematics, and Reading Achievement Gaps by Race/Ethnicity and Gender for Kindergarten (Curran & Kitchin, 2019)

The nation's schools are growing in linguistic and cultural diversity, with students identified as English learners (ELs) comprising more than ten percent of the student population. Unfortunately, existing research suggests that ELs lag behind other students in science achievement, even in the earliest grades of school. This project will provide evidence on how school, classroom, teacher, and student factors shape elementary school science learning trajectories for ELs.



## Overview

This newly funded project will provide a comprehensive analysis of English learners' (ELs) science learning in the early grades and the English learner instructional inputs and science instructional inputs that best predict early science outcomes (measured by both standardized science assessments and teacher-rated measures of science skills).

The project will use the nationally representative Early Childhood Longitudinal Study (ECLS-K:2011) and employ a regression framework with latent class analysis to identify promising inputs that promote early science learning for ELs. Conceptually, rather than viewing the school-based inputs in isolation, the study will explore how they combine to enhance students' science learning trajectories.

## Research Questions

- 1) How do science test performance trajectories vary across and within EL student groups in elementary school?
- 2) How do access to school, teacher, and classroom level science and EL inputs vary across and within EL student groups in elementary school?
- 3) Which school, teacher, and classroom level science and EL inputs are predictive of greater science test performance gains and teacher-rated science skills in elementary school? Do these relationships vary for subgroups of subgroups of EL students, particularly by race/ethnicity or by immigration status?
- 4) Are there particular combinations of school, teacher, and classroom level inputs that are predictive of science learning gains (test scores and teacher-rated skills) for ELs as compared to students more broadly?



This project is funded by the National Science Foundation, grant # 2100419. Any opinions, findings, and conclusions or recommendations expressed in these materials are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.