

the landscape of socioeconomic and racial/ethnic educational inequality

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Animating questions

1. How much do educational outcomes vary across communities in the U.S.?

2. And why?

Home environment, neighborhood conditions, pre-school availability/quality, K-12 school quality?

3. And what can we do to equalize outcomes?

Help families? Improve neighborhoods? Fund quality pre-school? Improve K-12 schools?

Data

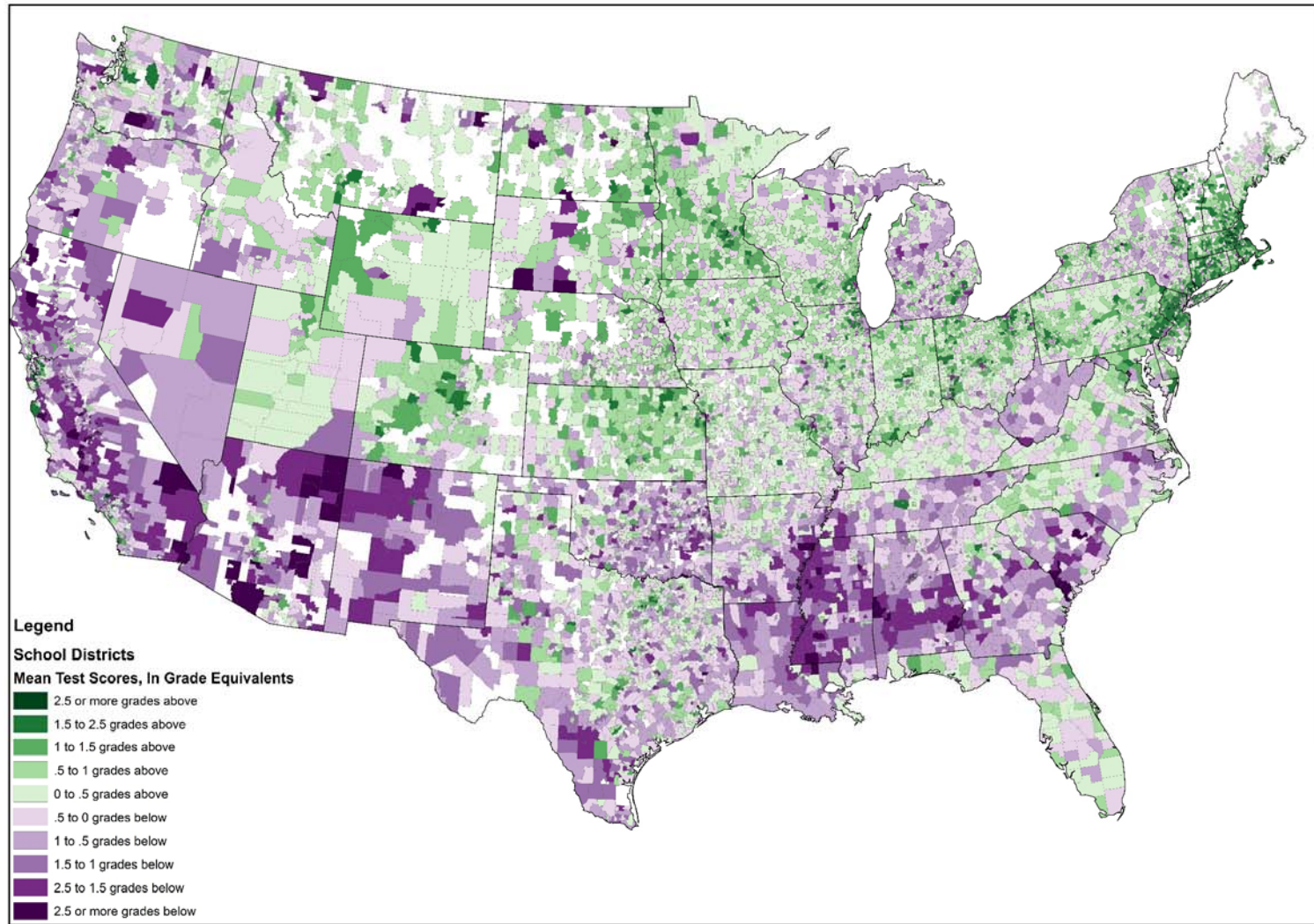
- Average district-level standardized test scores (on state accountability tests)
 - 11,280 geographic school districts (including charter schools)
 - Grades 3-8
 - Math & ELA (today I'm reporting average of Math and ELA)
 - 2009-2013 (10 cohorts of students entering K in 2000 – 2009)
 - By race/ethnicity
 - Based on ~215,000,000 test scores
 - Scores are placed on common scale across states, years, and grades
- Demographic data
 - Family characteristics (of families with children in public schools)
 - From American Community Survey (ACS)

Stanford Education Data Archive (SEDA)

- Available at <http://seda.stanford.edu>
- These data exist thanks to the following people:
 - Ross Santy, Micheal Hawes, Marilyn Seastrom (US Dept. of Education)
 - Andrew Ho (Harvard University)
 - Demetra Kalogrides, Kenneth Shores, Ben Shear, Erin Fahle (Stanford University)
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 - Institute of Education Sciences
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 - William T. Grant Foundation

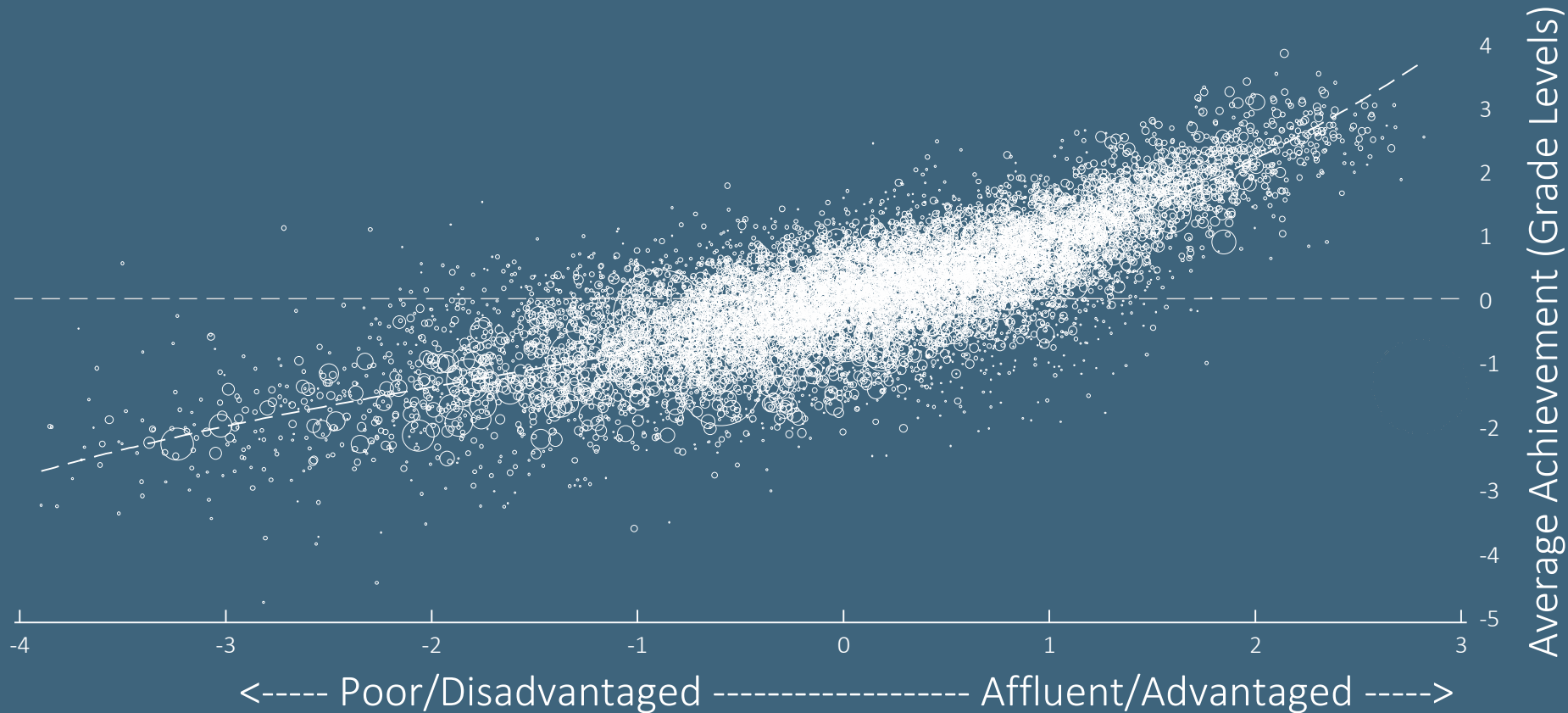
What do average test scores tell us?

1. Average test scores differences are not solely the result of differences in schools; they are the total result of children's home, neighborhood, pre-school, after-school, and K-12 schooling experiences.
2. They are not measures of intelligence, but of performance (so are affected by what students have been taught and have learned and how motivated they are to perform on standardized tests).
3. Test performance is not the only educational outcome we care about; but it is a reasonable proxy for the extent of opportunity.
4. The estimated average achievement levels are not exact, and so should not be used to make fine distinctions among school districts.



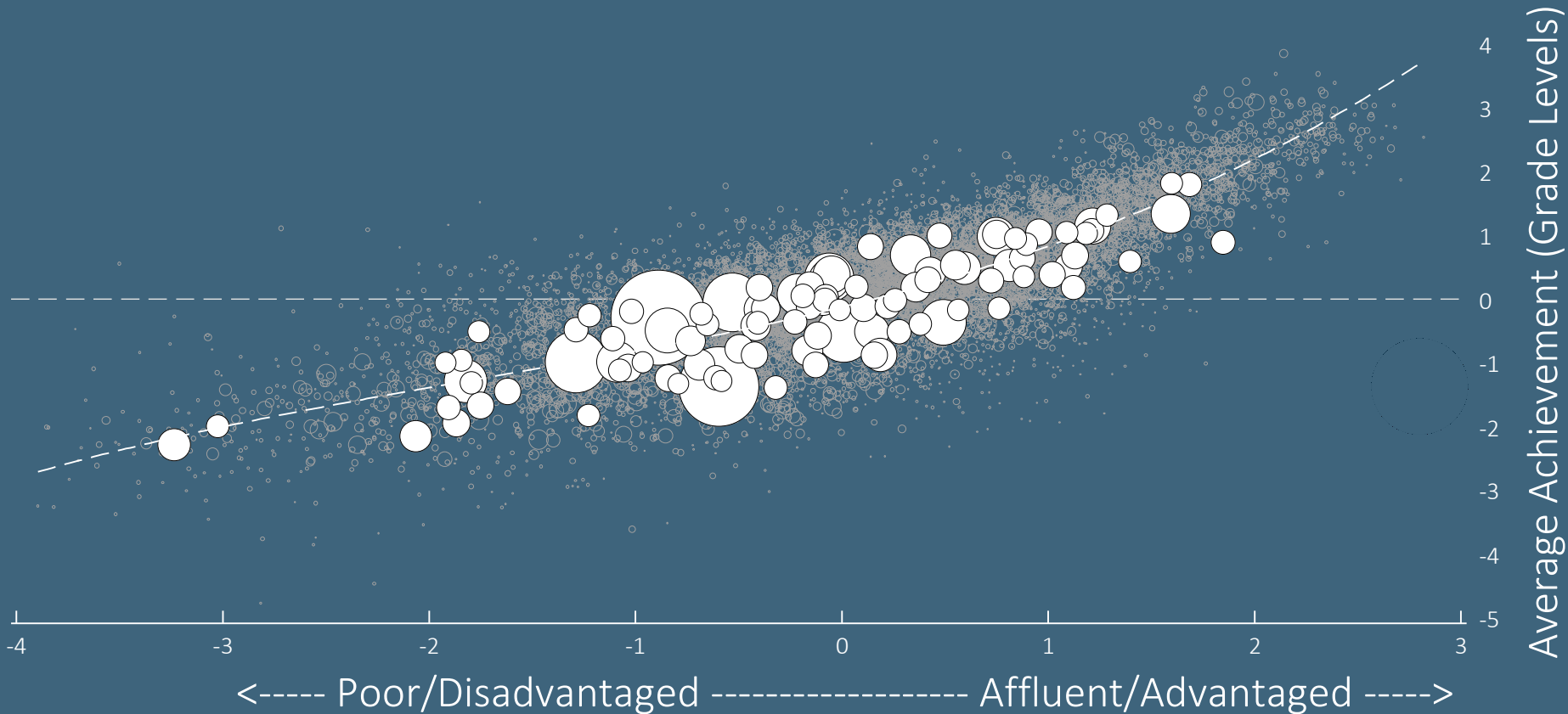
Academic Achievement and Socioeconomic Status

US School Districts, 2009-2013



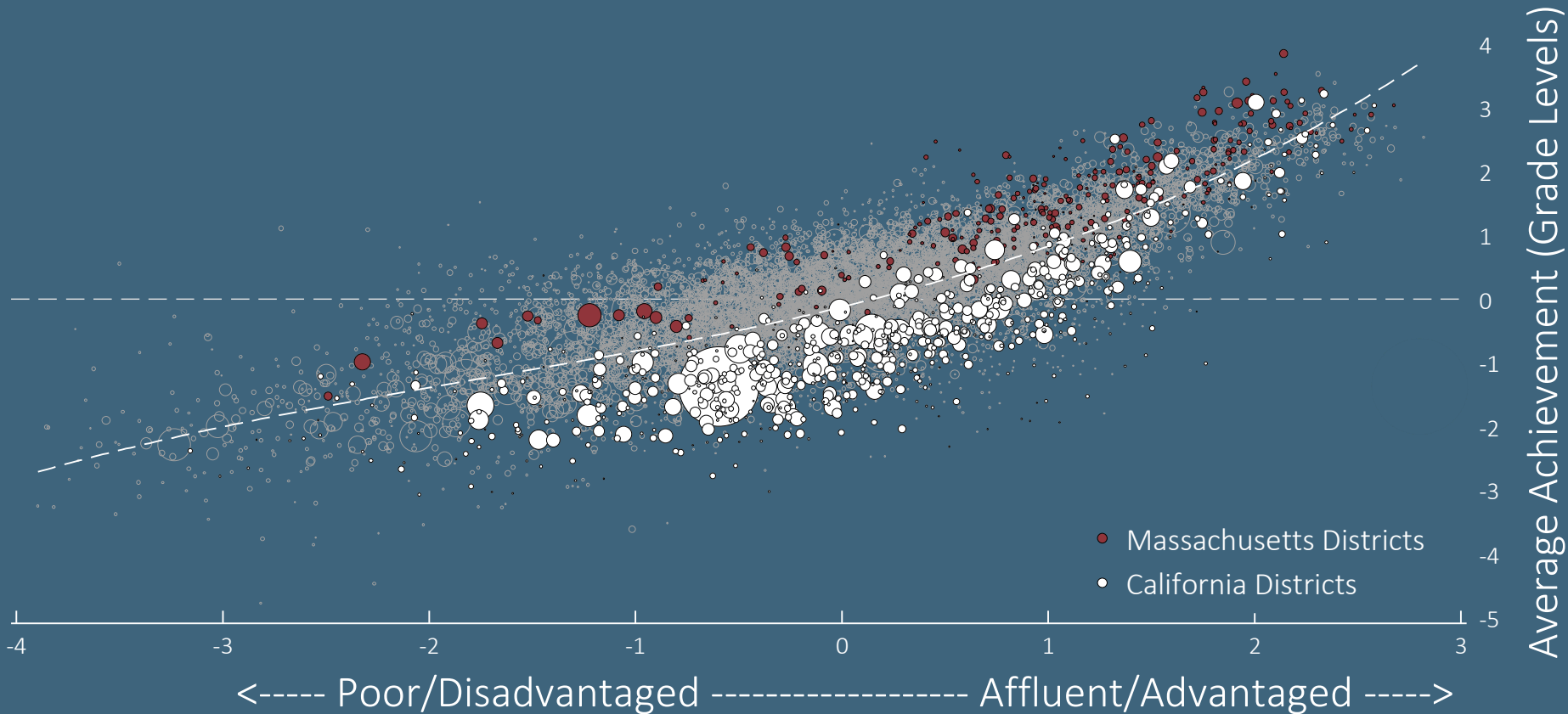
Academic Achievement and Socioeconomic Status

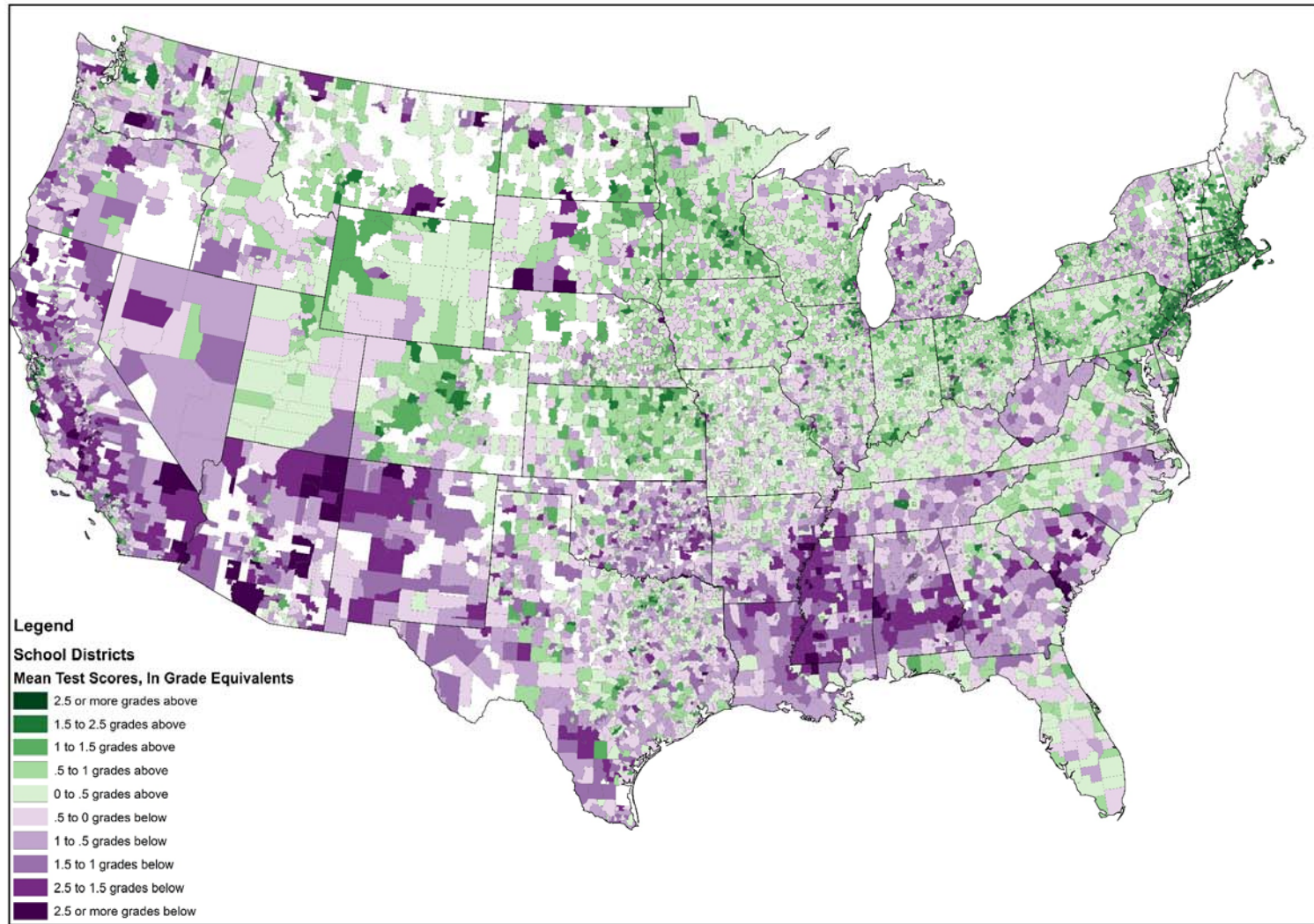
100 Largest US School Districts, 2009-2013

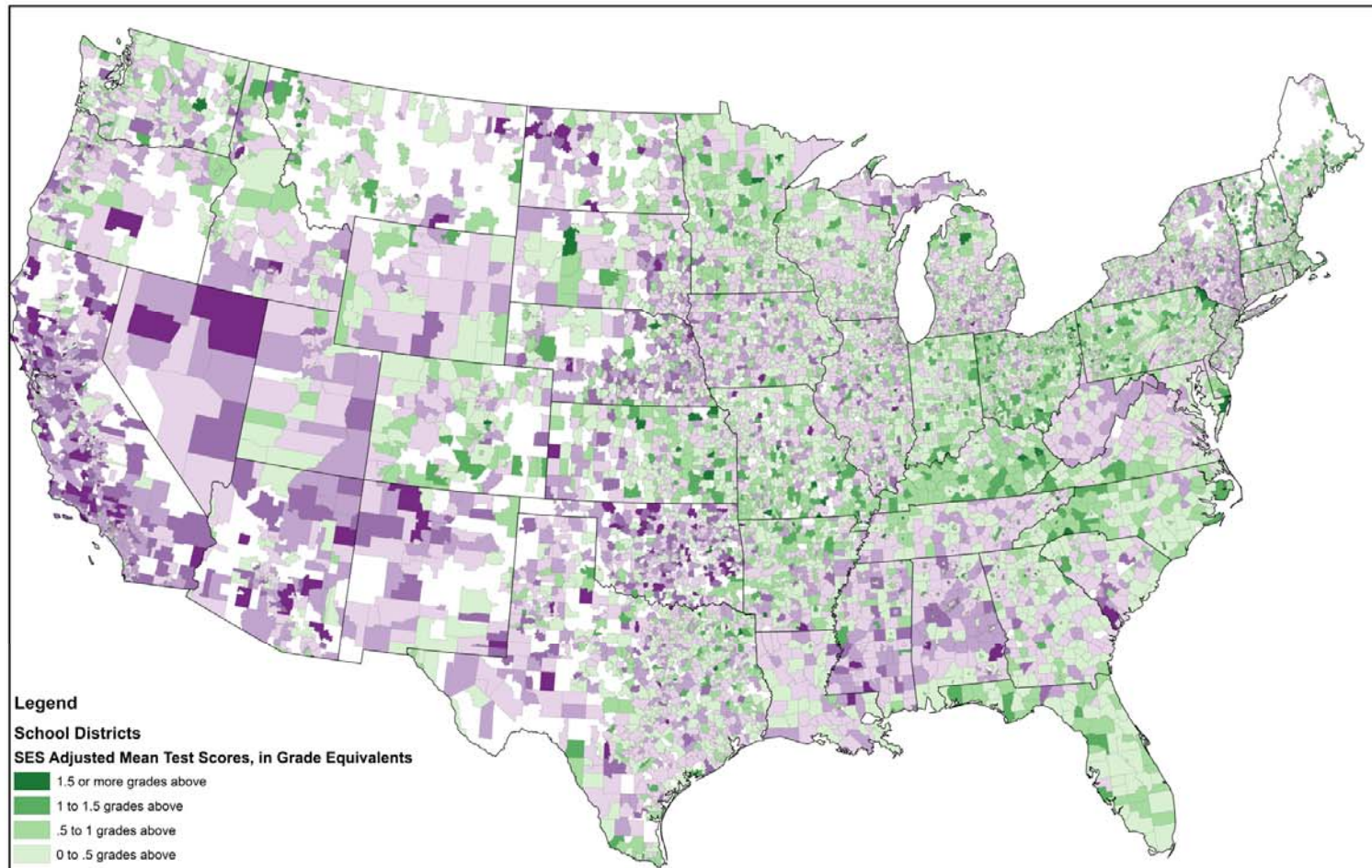


Academic Achievement and Socioeconomic Status

California and Massachusetts School Districts, 2009-2013







Legend

School Districts

SES Adjusted Mean Test Scores, in Grade Equivalents

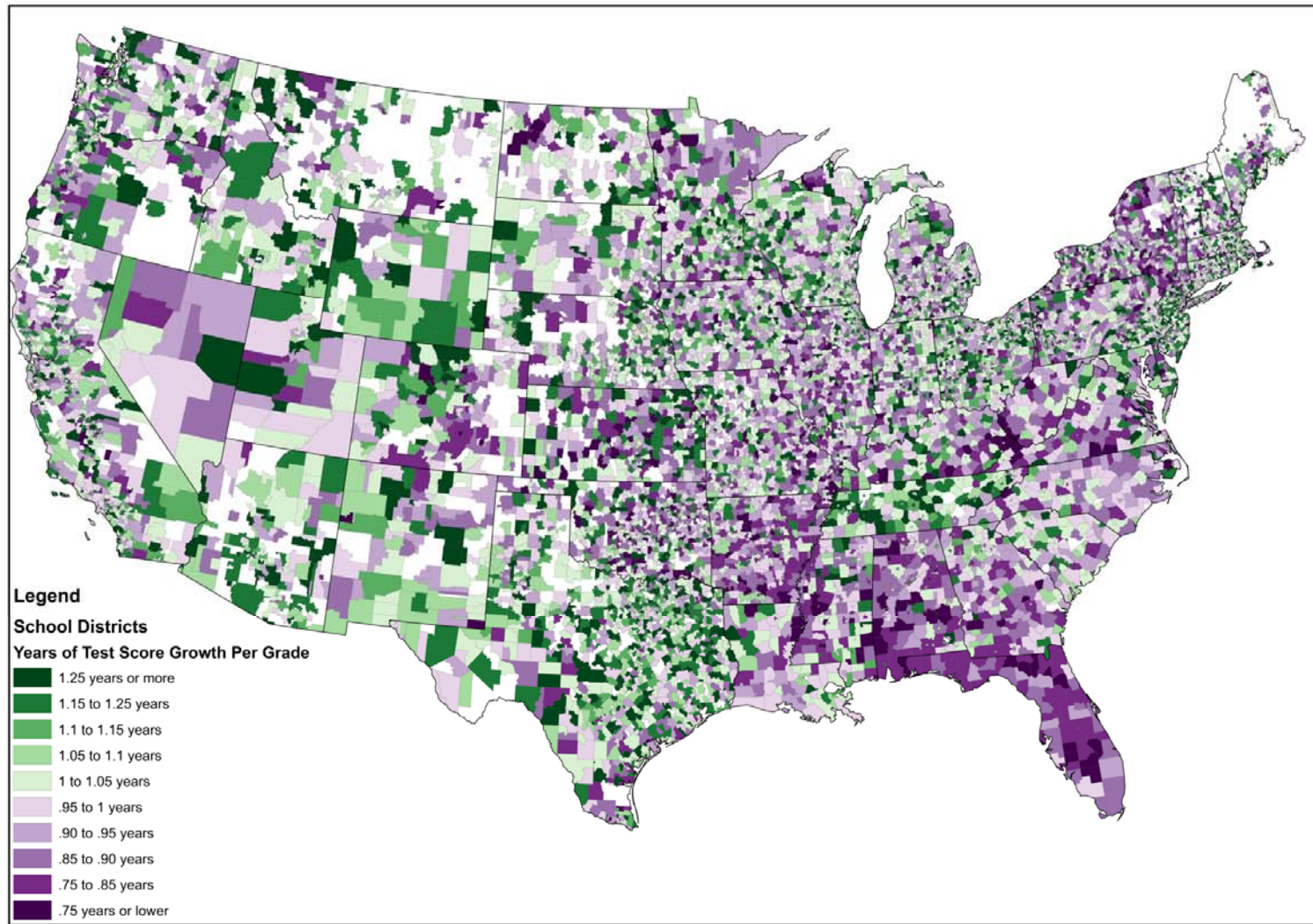
- 1.5 or more grades above
- 1 to 1.5 grades above
- .5 to 1 grades above
- 0 to .5 grades above
- .5 to 0 grades below
- 1 to .5 grades below
- 1.5 to 1 grades below
- 1.5 or more grades below

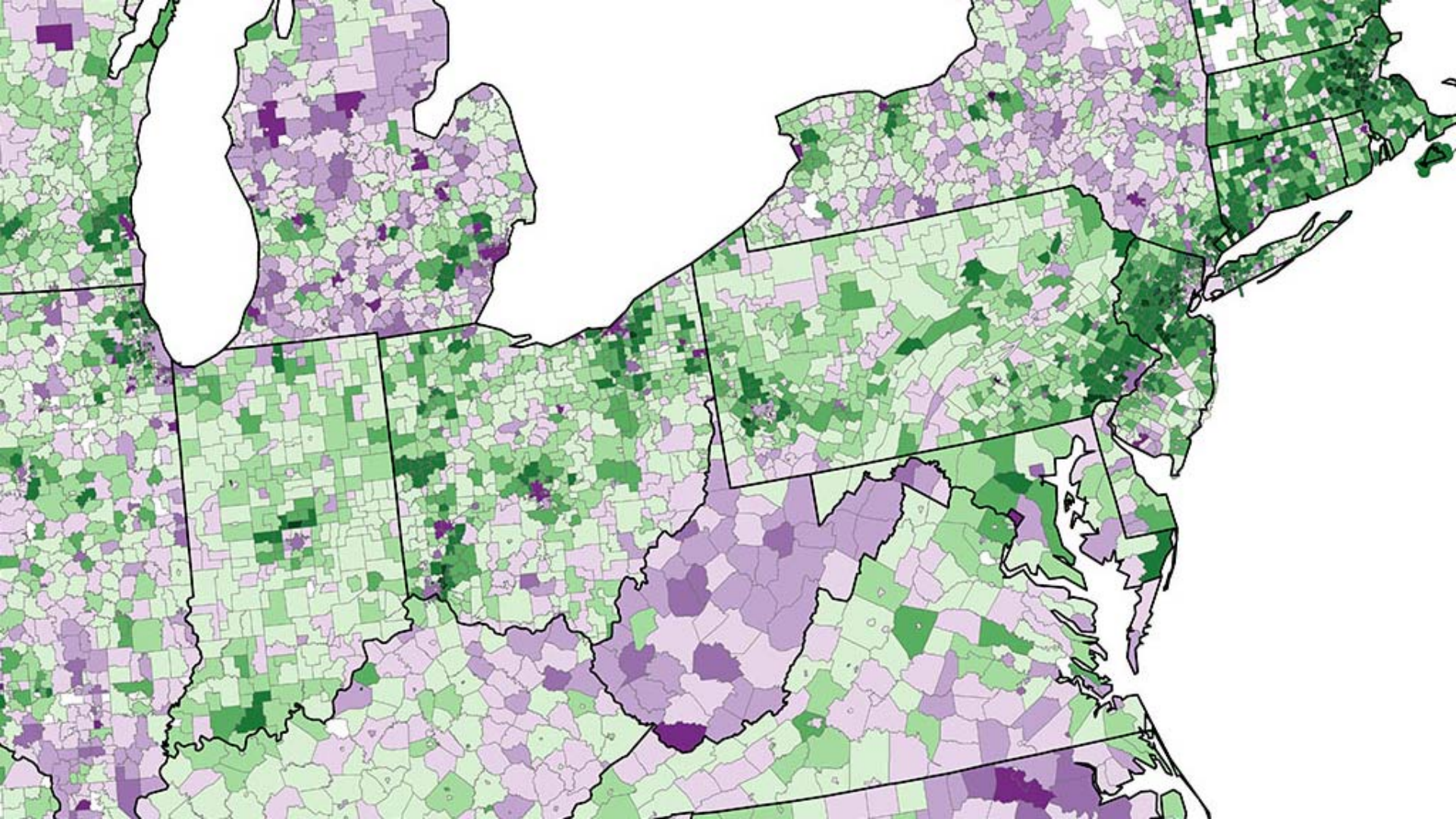
Where does academic performance grow fastest?

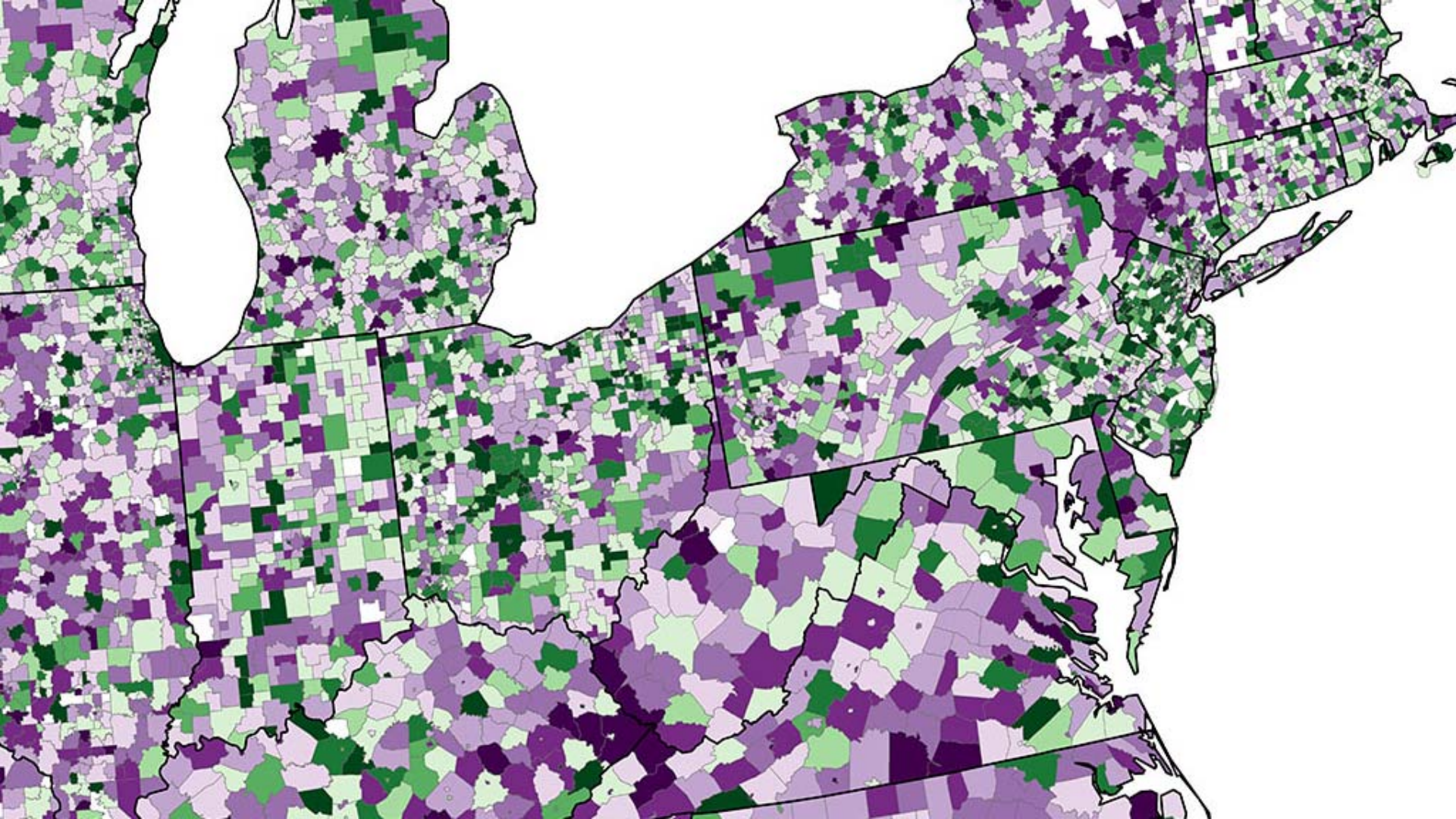
We can compute the average change in test scores between 3rd and 8th grade (within a cohort of students).

This can be thought of as an (imperfect) measure of “community value-added”—a measure of growth in test scores, net of differences in third-grade performance. This may be closer to a measure of place-based opportunity than the measure of average test scores, because growth may be less confounded with family background than average levels of performance.

A caveat: these estimates will be biased if there is differential grade retention, mobility, or drop-out among school districts in ways that are related to children’s test performance.

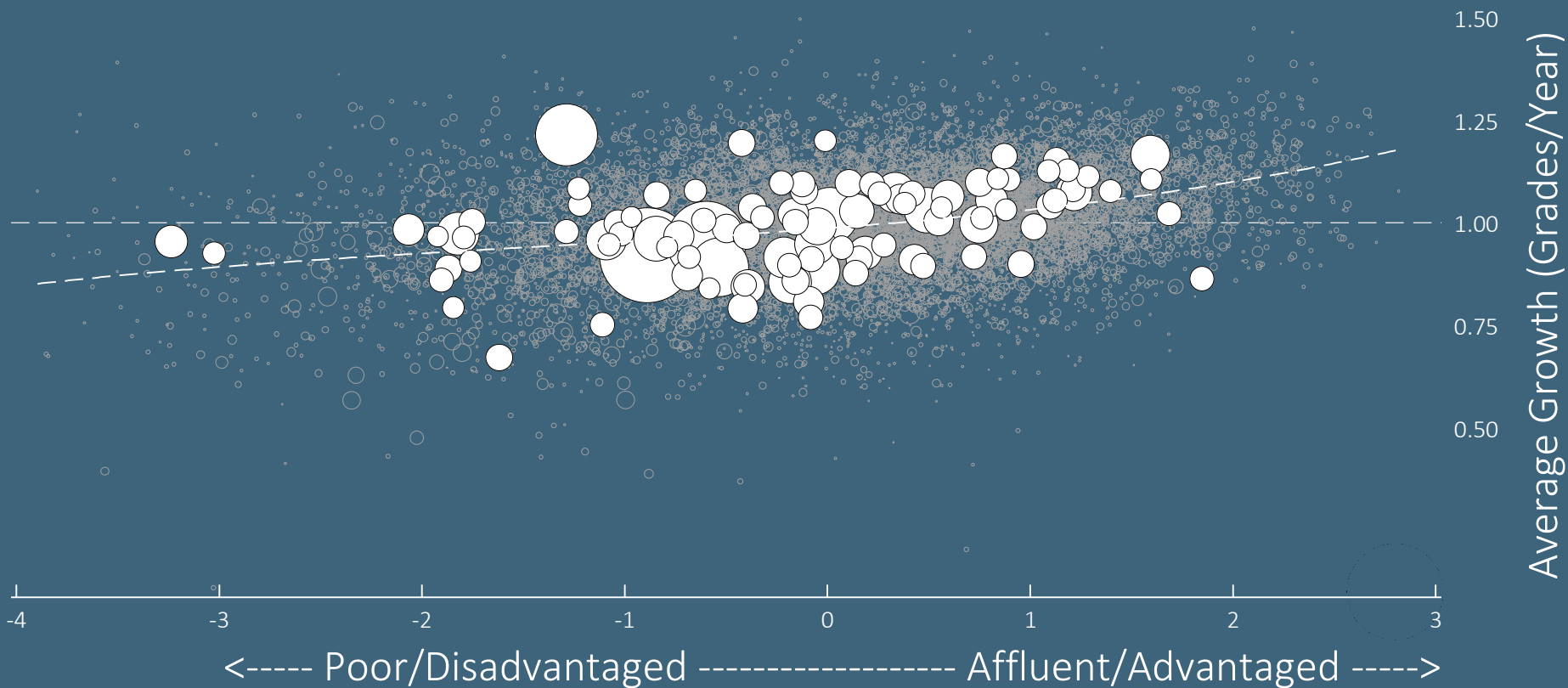






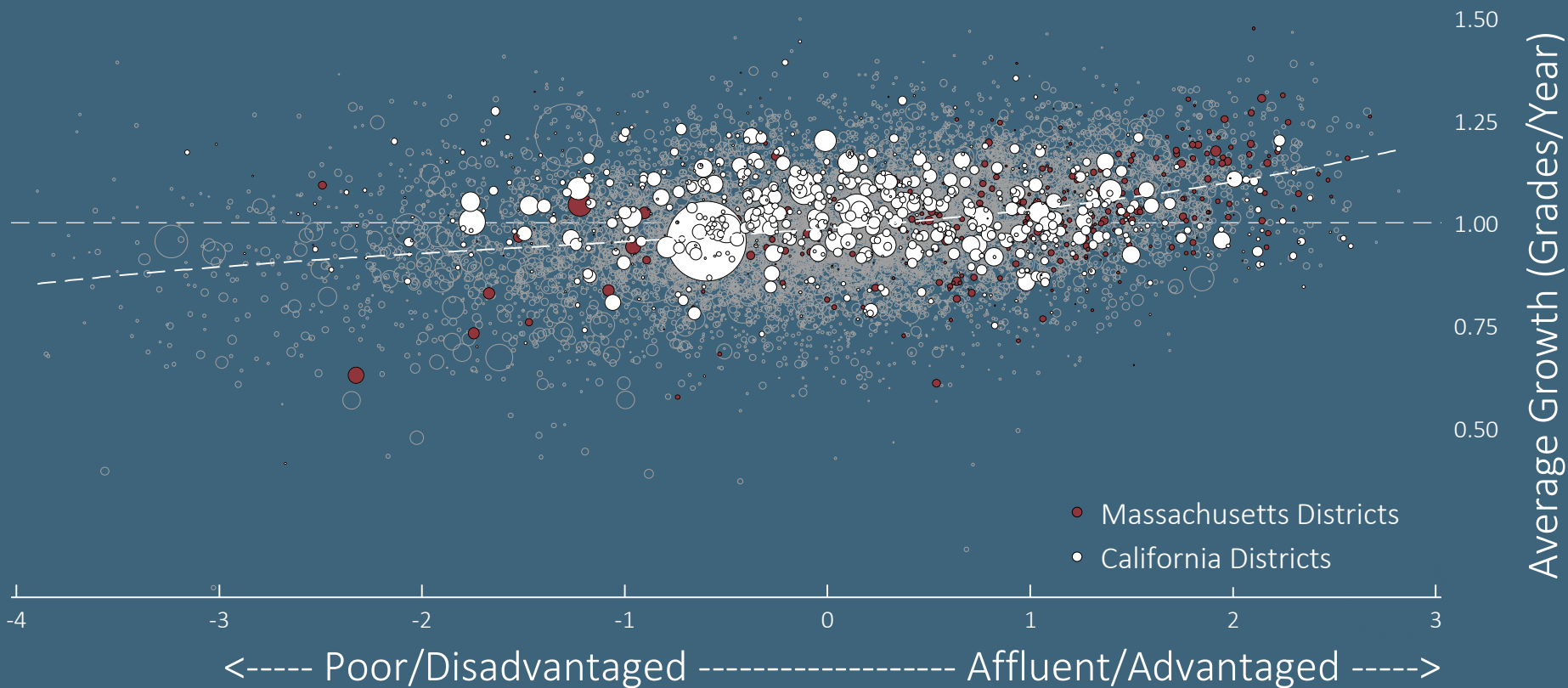
Academic Achievement Growth and Socioeconomic Status

100 Largest US School Districts, 2009-2013



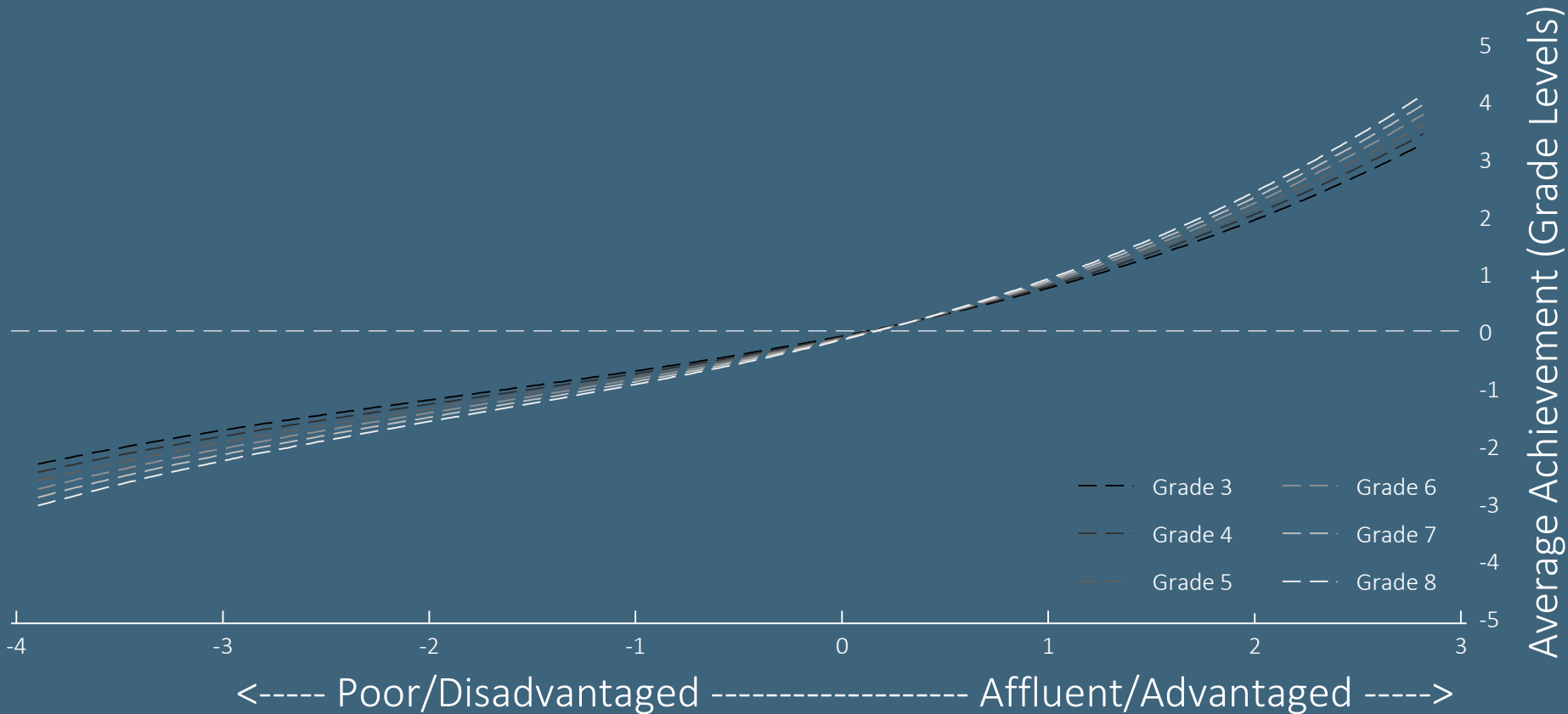
Academic Achievement Growth and Socioeconomic Status

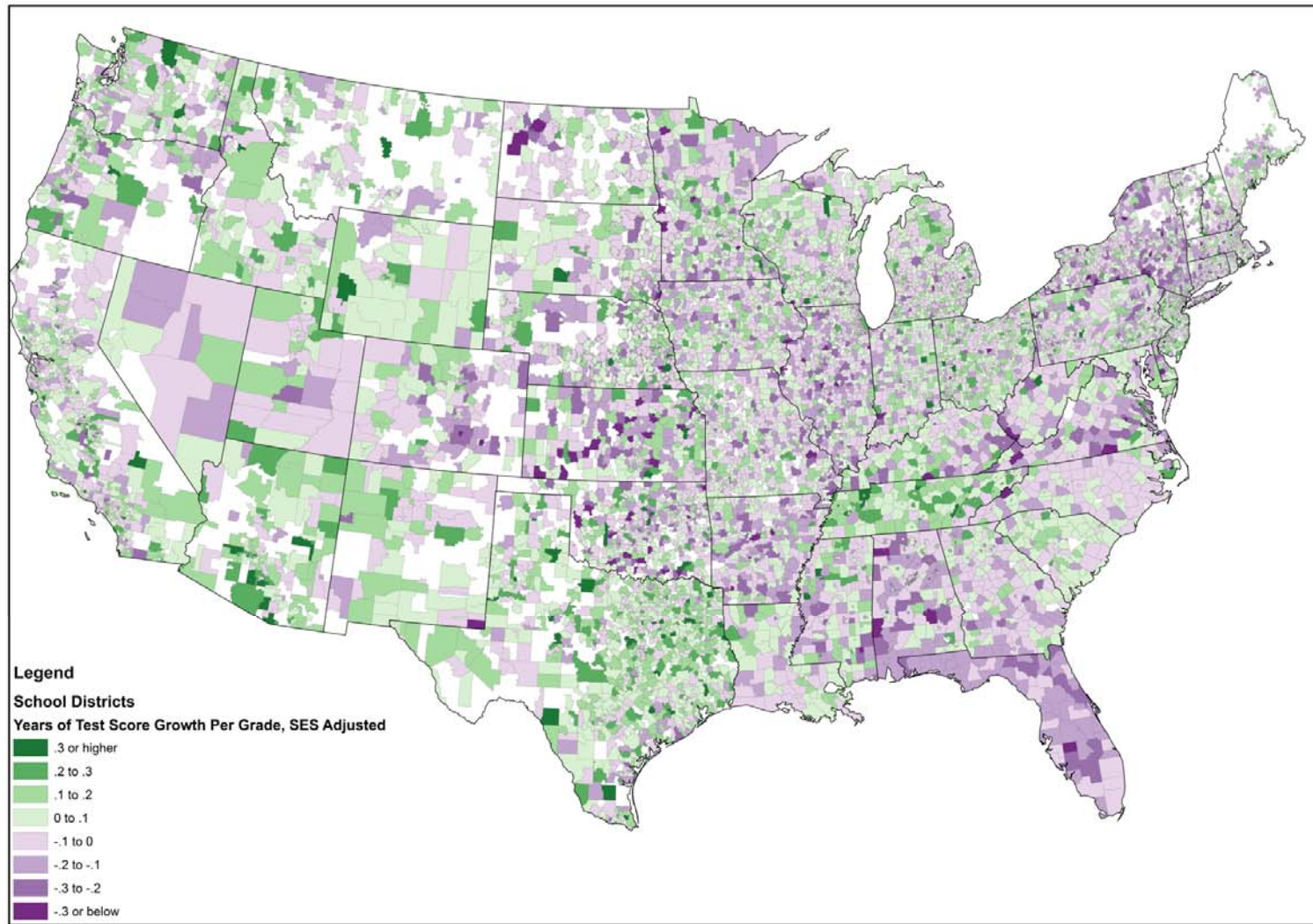
California and Massachusetts School Districts, 2009-2013



District SES-Achievement Gradient, by Grade

US School Districts, 2009-2013





Partial Associations of Average Third Grade Test Scores and Grade 3-8 Gains with School District Characteristics, 2009-2013

	Mean Scores	Growth Gr 3-8
Mean SES	0.080 ***	0.006 ***
Percent Black	-0.297 ***	-0.020 ***
Percent Hispanic	-0.126 ***	-0.027 ***
Percent Asian	0.517 ***	0.010
Percent Native American	-0.269 ***	-0.015
Percent ELL	-0.404 ***	0.092 ***
Percent Special Ed.	-0.548 ***	-0.077 ***
Percent FRPL	-0.589 ***	-0.017 **
Income Inequality (Gini)	0.675 ***	0.035 *
Percent in Charter Schools	-0.196 ***	0.002
Instructional Expenditures/Pupil	0.118 ***	0.002
Black-White Segregation	-0.115	-0.004
Hispanic-White Segregation	0.019	0.016
N	6102	6102
r ²	0.788	0.225

Note: Models also include controls for district size, student-teacher ratio, non-instructional expenditures, racial/ethnic SES differences, and state fixed effects.

Partial Associations of Average Third Grade Test Scores and Grade 3-8 Gains with School District Characteristics, 2009-2013

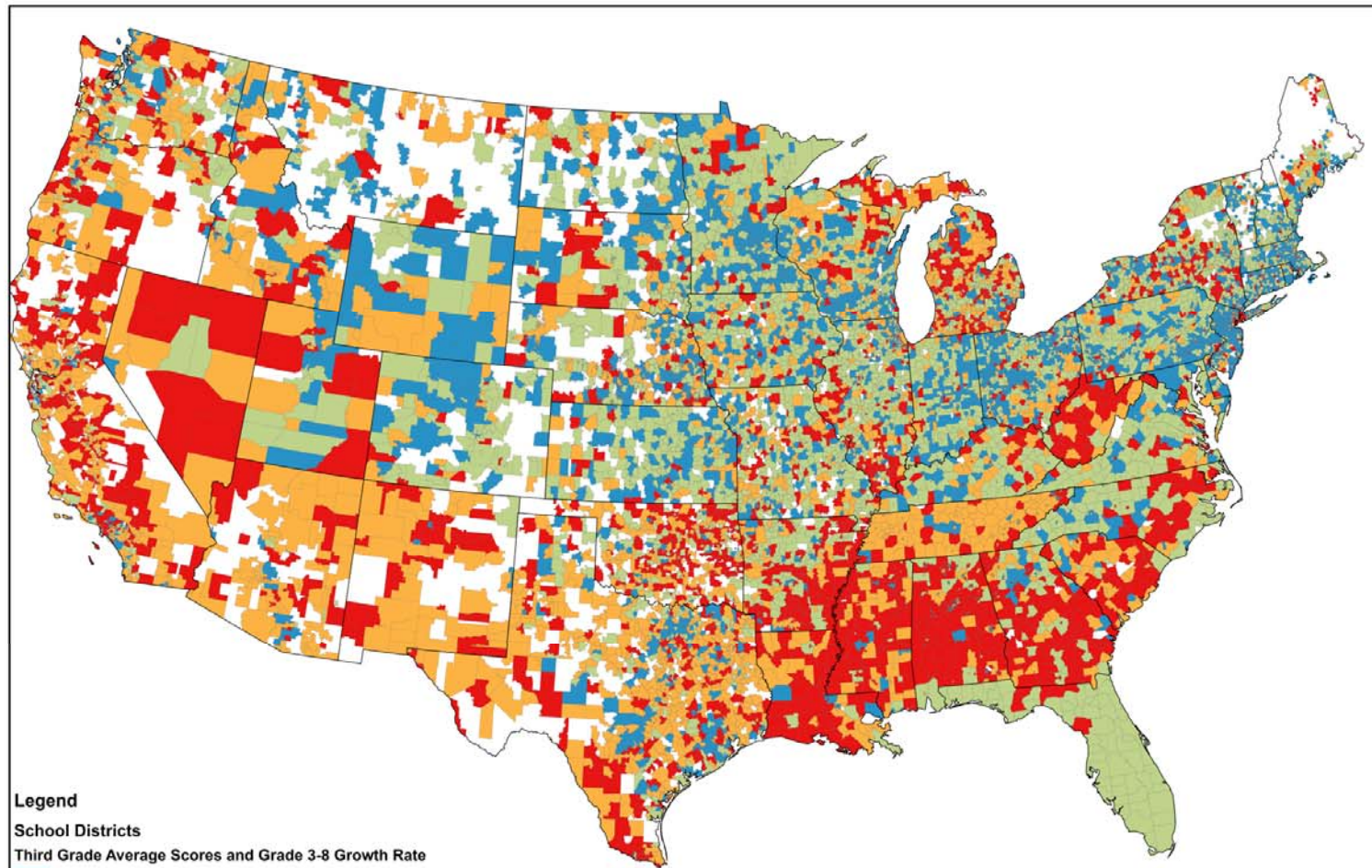
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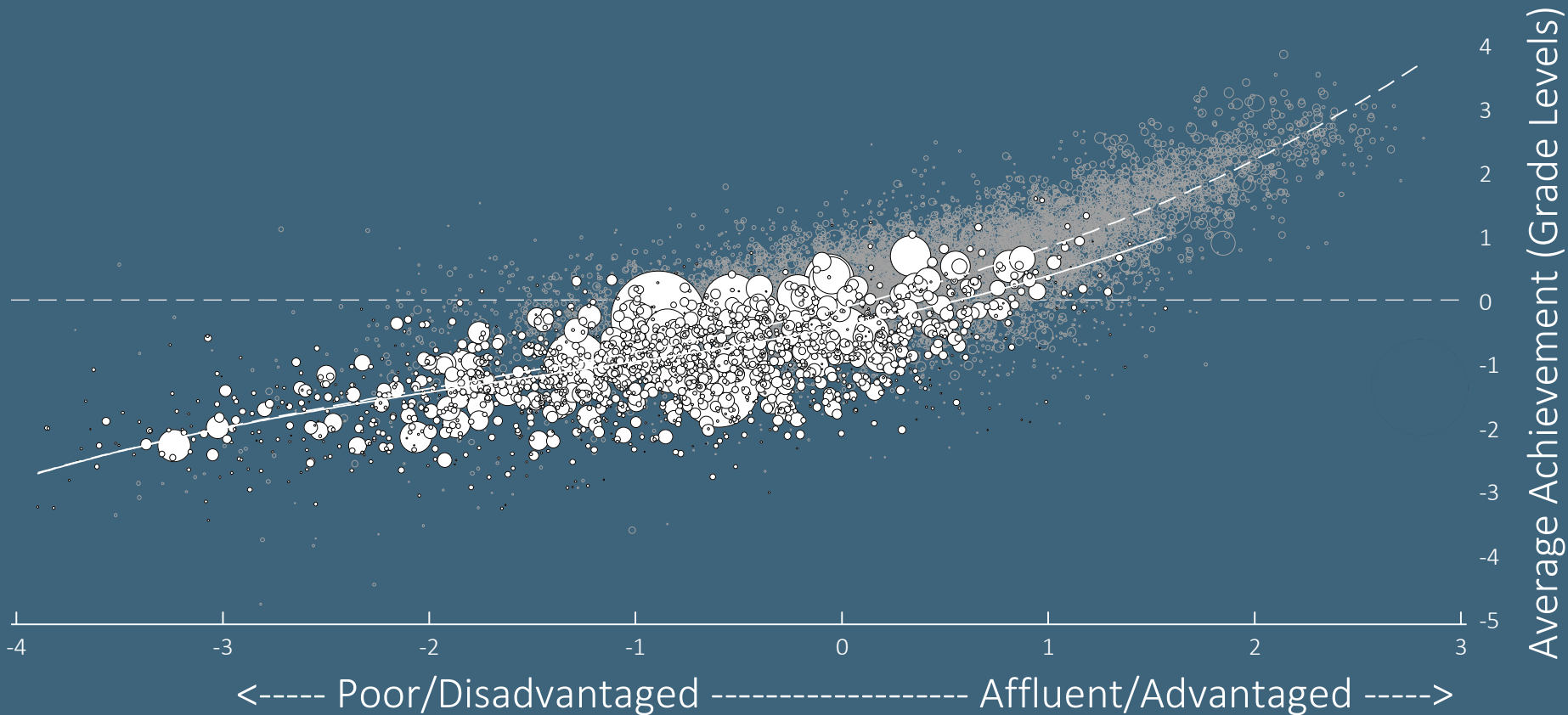
Third Grade Average Scores and Grade 3-8 Growth Rate

- Blue: Above Average in 3rd Grade, Above Average Growth
- Green: Above Average in 3rd Grade, Below Average Growth
- Orange: Below Average in 3rd Grade, Above Average Growth
- Red: Below Average in 3rd Grade, Below Average Growth

Where are racial/ethnic disparities larger/smaller?

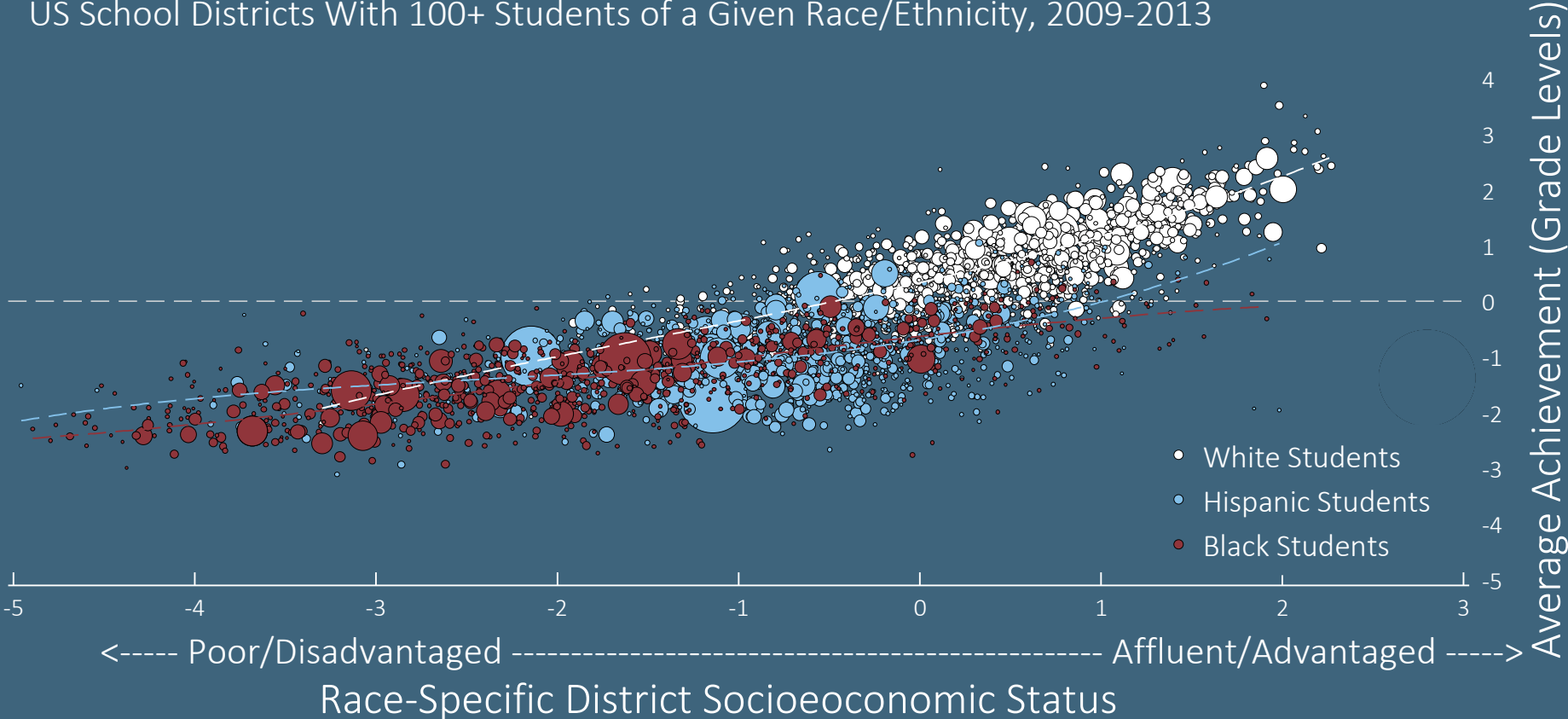
Academic Achievement and Socioeconomic Status

Majority Black/Hispanic US School Districts, 2009-2013



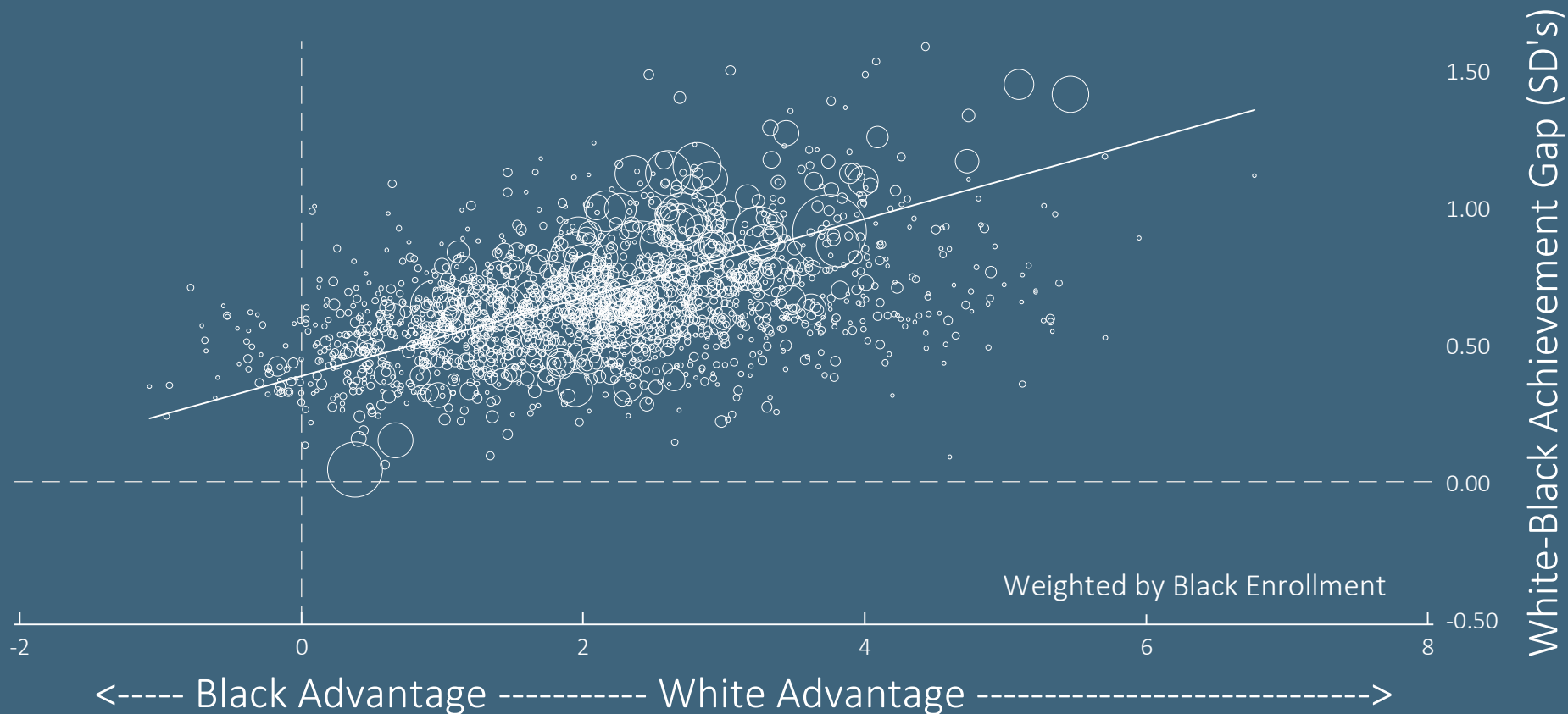
Academic Achievement and Socioeconomic Status, by Race/Ethnicity

US School Districts With 100+ Students of a Given Race/Ethnicity, 2009-2013



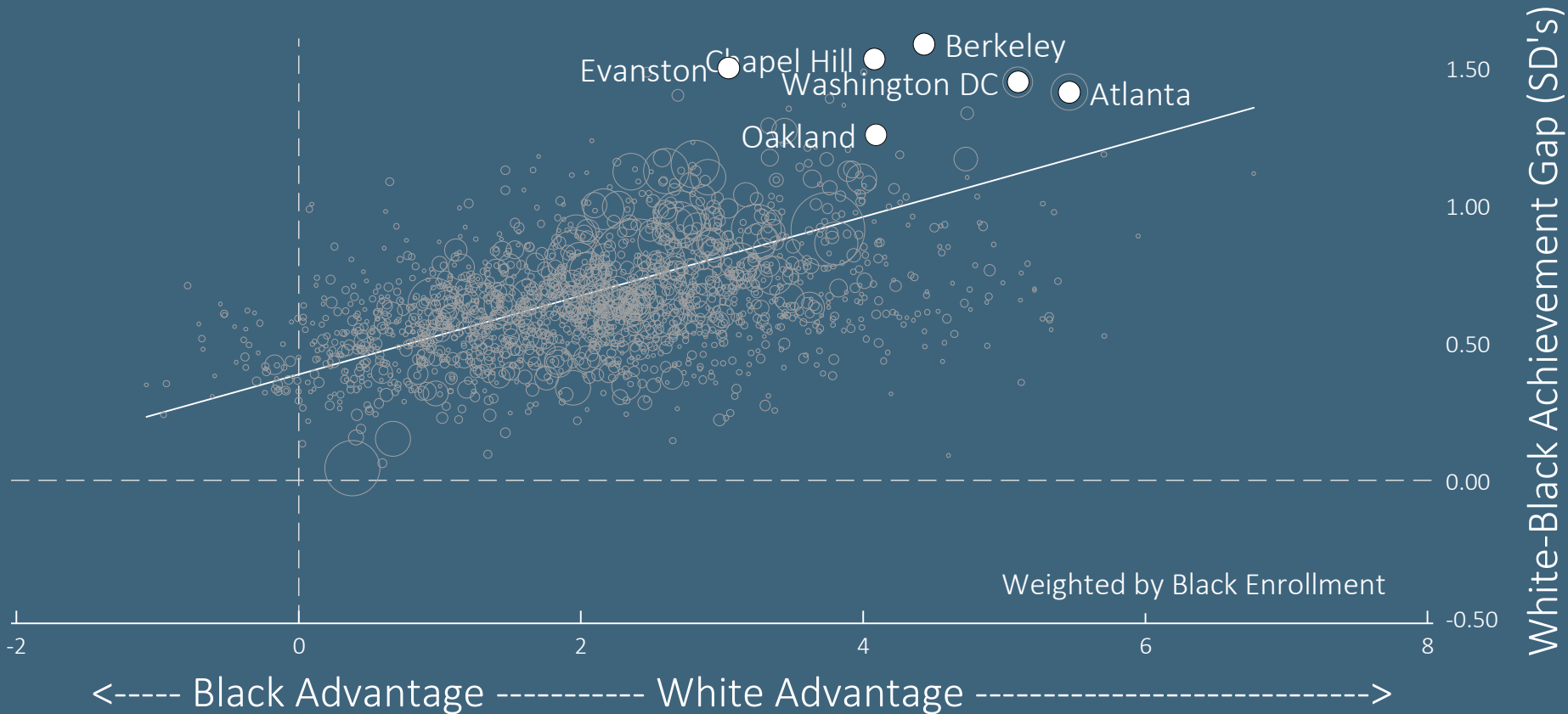
White-Black Achievement Gap and Socioeconomic Differences

U.S. School Districts With at Least 200 Black Students, 2009-2013



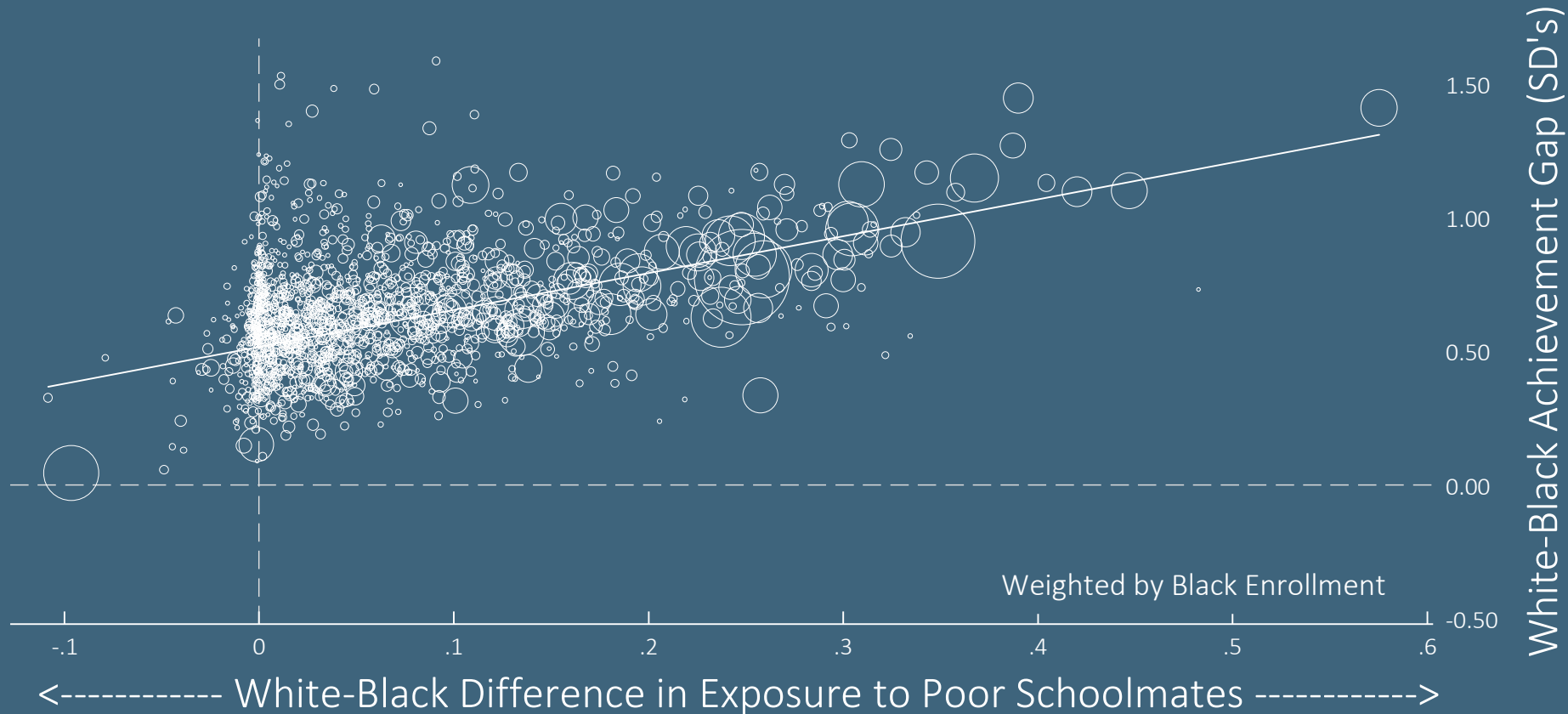
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U.S. School Districts With at Least 200 Black Students, 2009-2013



White-Black Achievement Gap and Segregation

U.S. School Districts With at Least 200 Black Students, 2009-2013



Academic Achievement and Socioeconomic Status

US School Districts, 2009-2013

