disability & discipline
health resources and school suspension prevalence

This project explores the link between spatial access to health care and the discipline of students with disabilities in the Boston metro area's public secondary schools. Many students with disabilities have health and mental health care needs that exceed those of average students. Behavior problems among students with disabilities often reflect unmet or under-met health and mental health care needs (Suldo, 2014).

Kahn's (1992) typology of health care access identified two key dimensions that may impact health care use, spatial and social barriers. Because less than 1% of children in Massachusetts lack health insurance, the social (including economic) barriers to accessing care are minimized, making it an excellent location to explore the role of spatial barriers to accessing health care (Long, 2016).

The analyses tests the hypothesis that schools in areas with limited health resources are more likely to discipline students who have greater-than-average health needs. This may be especially true in Massachusetts, where special education law includes a wider range of mental health conditions, as compared to other states or the federal government. Thus, higher proportions of special education students in Massa-

chusetts have mental health conditions that could negatively impact their behavior if they are under- or untreated.

This analysis used local Moran's I to identify patterns in the distribution of schools, based on the percent of special education students that they suspended. Additionally, it used two spatial lag regression models to predict the proportion of special education students a school suspended.
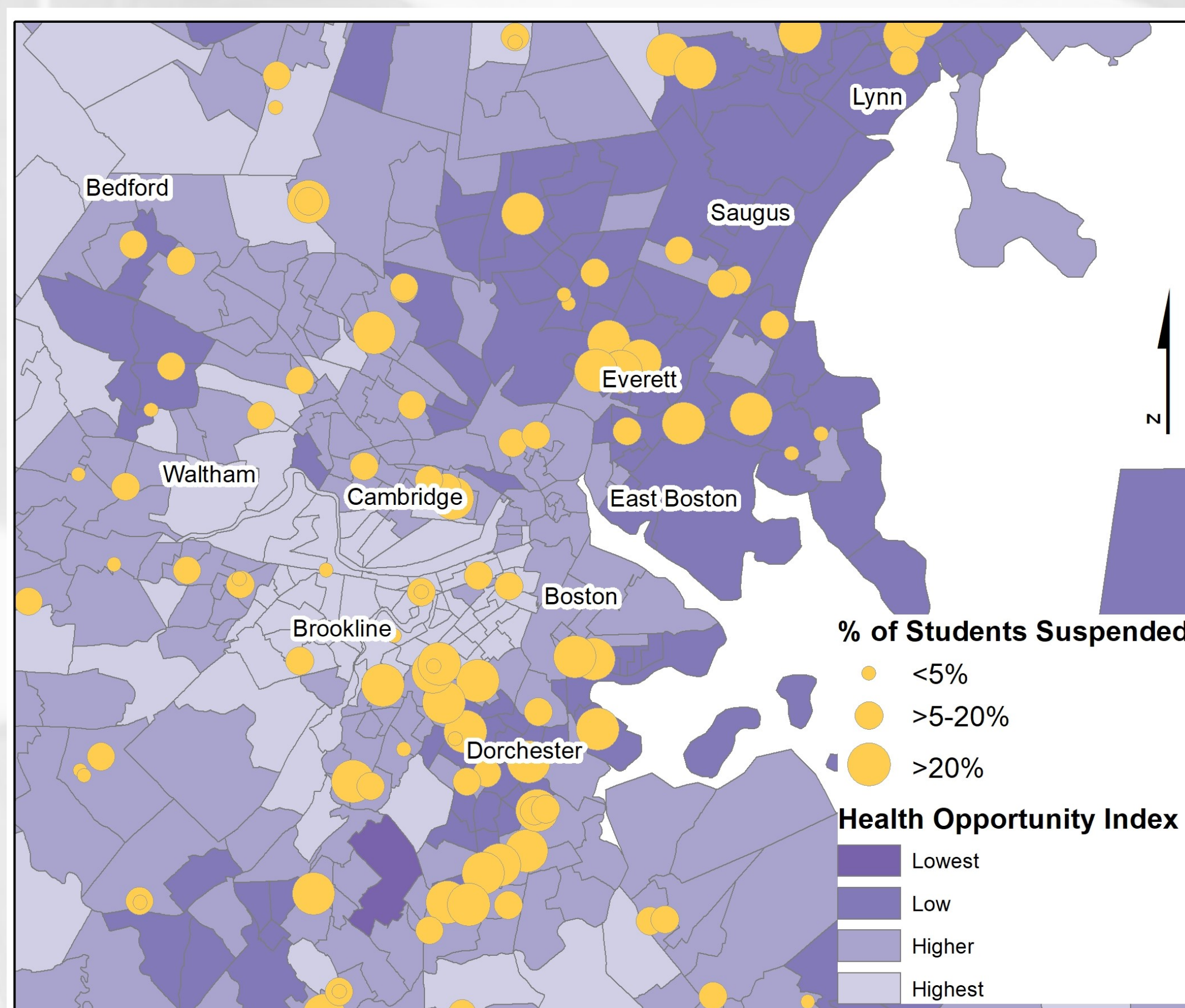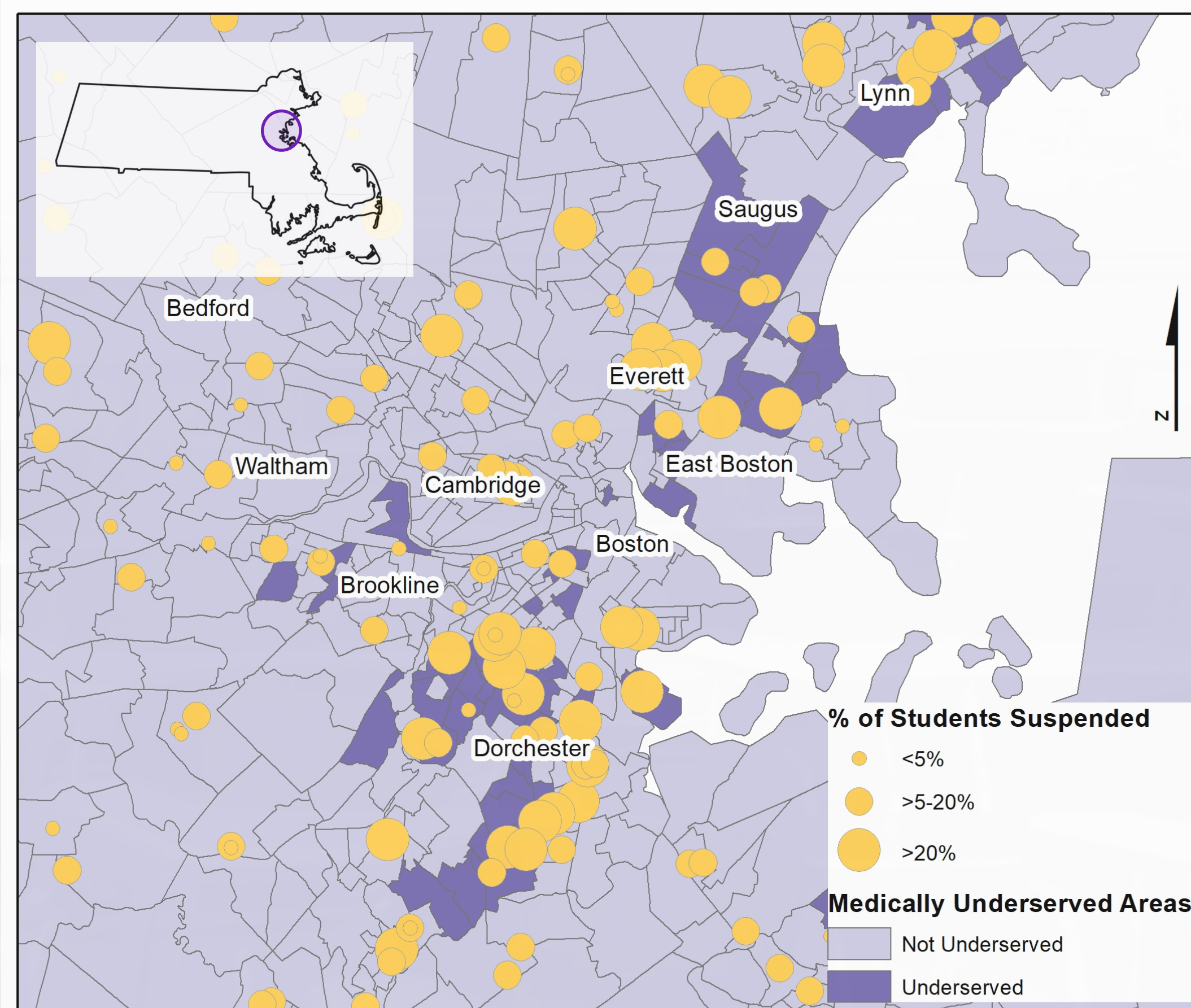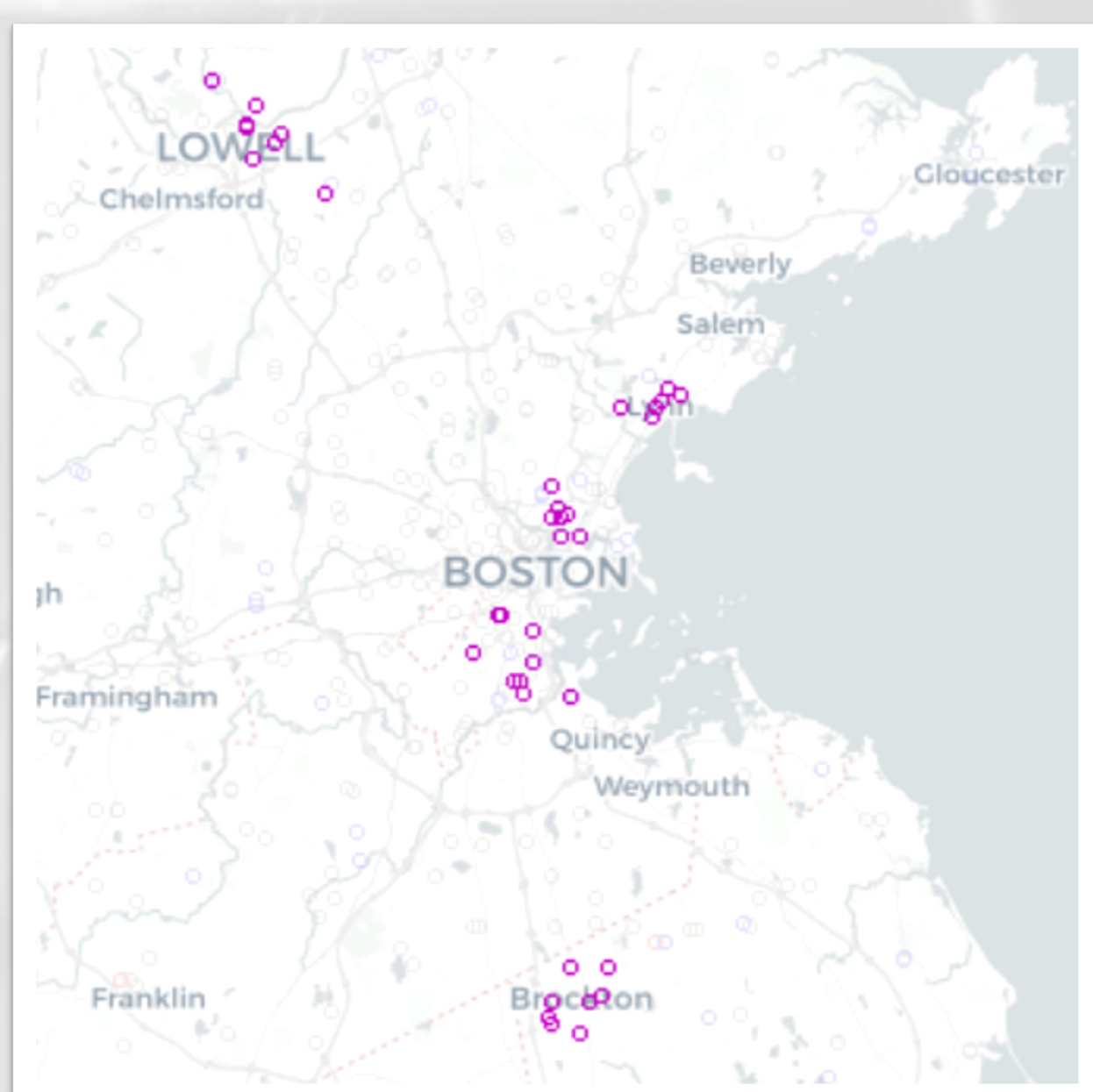
DATA SOURCES

- US Department of Education Civil Rights Data Collection, 2013-14
- Heath Resources and Services Admin. Medical Underservice Flag, 2015
- Diversity Data Kids Project's Child Health Opportunity Index, 2010
- American Community Survey, 2015

SAMPLE

This project's sample included the 498 public secondary schools located within the Boston-Quincy-Cambridge MSA.

LOCAL CLUSTERING

Local Moran's I revealed clusters of secondary schools that suspended large proportions of students with disabilities in a small number of cities including: Boston, Lynn, Lowell, Everett, and Brockton.

% of Students Suspended
- <5%
- >5-20%
- >20%

Medically Underserved Areas
- Not Underserved
- Underserved

% of Students Suspended
- <5%
- >5-20%
- >20%

Health Opportunity Index
- Lowest
- Low
- Higher
- Highest

CITATIONS

Khan, A. A. (1992). An integrated approach to measuring potential spatial access to health care services. *Socio-Economic Planning Sciences,* 26(4), 275–287.

Long, S. K., Skopec, L., Shelto, A., Nordahl, K., & Walsh, K. K. (2016). Massachusetts Health Reform At Ten Years: Great Progress, But Coverage Gaps Remain. Health Affairs, 35(9), 1633-1637.

Suldo, S. M., Gormley, M. J., DuPaul, G. J., & Anderson-Butcher, D. (2014). The impact of school mental health on student and school-level academic outcomes: Current status of the research and future directions. *School Mental Health,* 6(2), 84-98.

Map by Jennifer LaFleur, PhD Student, Brandeis University (May 2018)

SPATIAL LAG REGRESSIONS

Model 1

Variable	β	(SE)
Title I school	.00	(.01)
Medical underservice	.04[†]	(.02)
Households w/o car	.25[***]	(.05)

Model 2

Variable	β	(SE)
Title I school	.00	(.01)
Health opportunity	-.03[†]	(.05)
Households w/o car	.32[***]	(.05)

Note: [***]$p<0.001$, [†]$p<0.1$

DISCUSSION

When controlling for school-level poverty (Title I status), two types of variables related to the spatial accessibility of health care remained important predictors of the proportion of students with disabilities that were suspended by their schools.

First, the proportion of residents in the census tract that did not have a car was a significant predictor of suspension rates ($p<.001$) as were two measures of community health resources, HRSA's medical underservice flag (Model I; $p<.1$) and the diversitydatakids.org child health opportunity index (Model 2; $p<.1$).