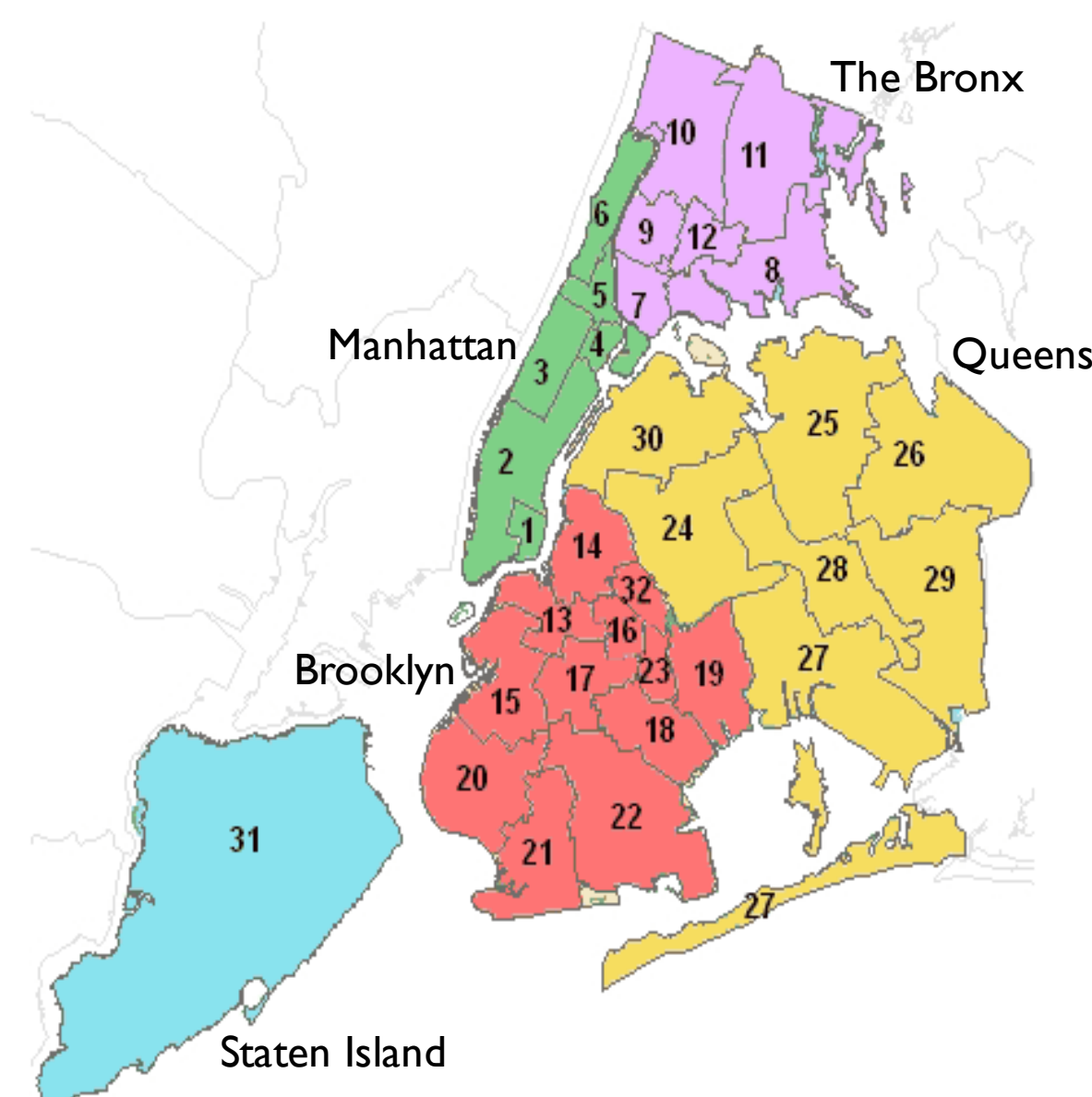


Introduction



The New York City (NYC) Public School System is the largest public school system in the United States with:

- **1.1 million** students
- **1,300** schools
- **32** geographic districts

Data

We had access to:

- **11 years** of NYC DOE data from 2005 to 2016
- **4,932,449** students
- **1,800** schools including **425** high schools
- Sample data sets we had:



Each Student's preferences of up to twelve high school programs anywhere in NYC



Test Scores

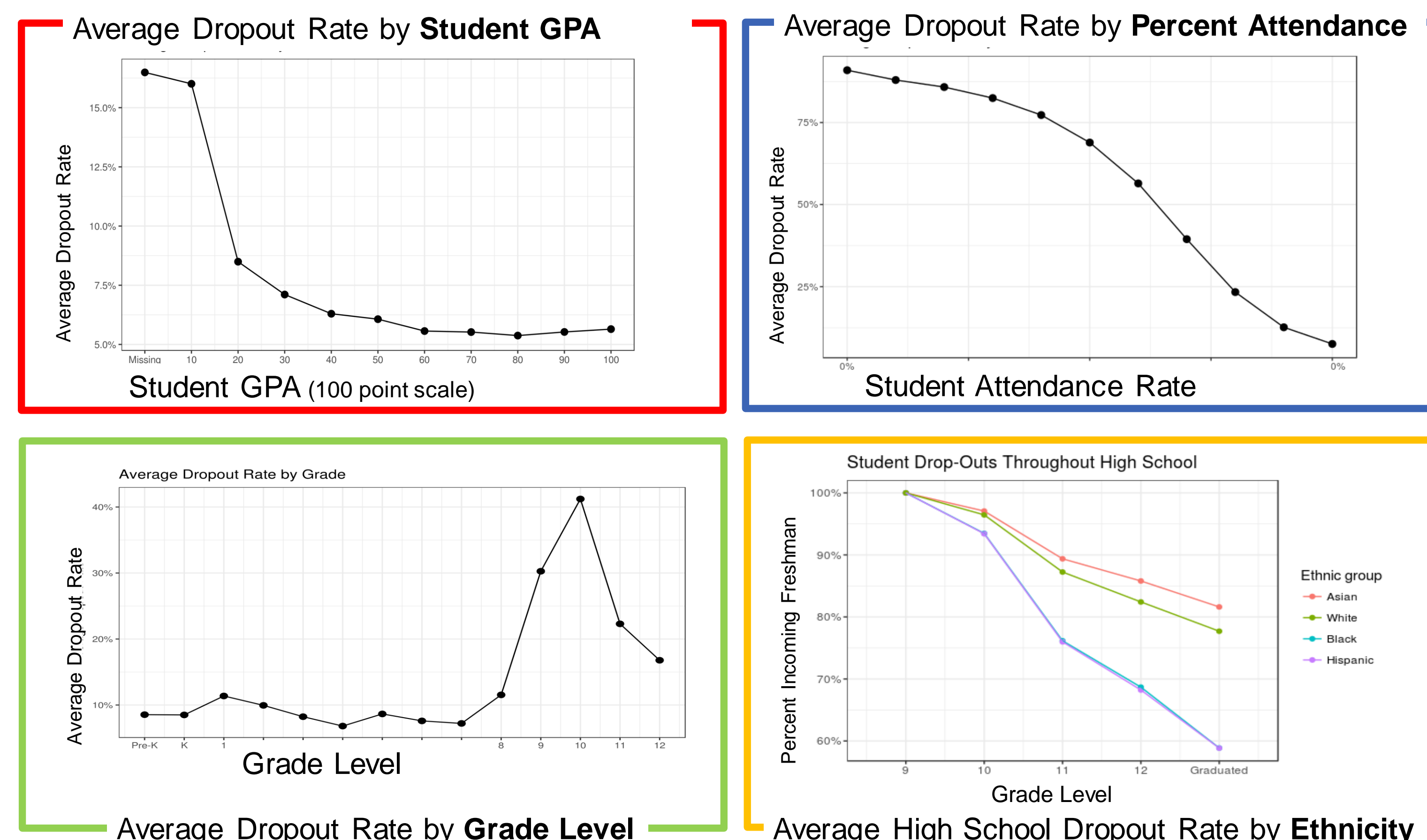


June Student Bios

Biographic information for each student including student's grade level, gender, ethnicity, poverty status, birthday etc.

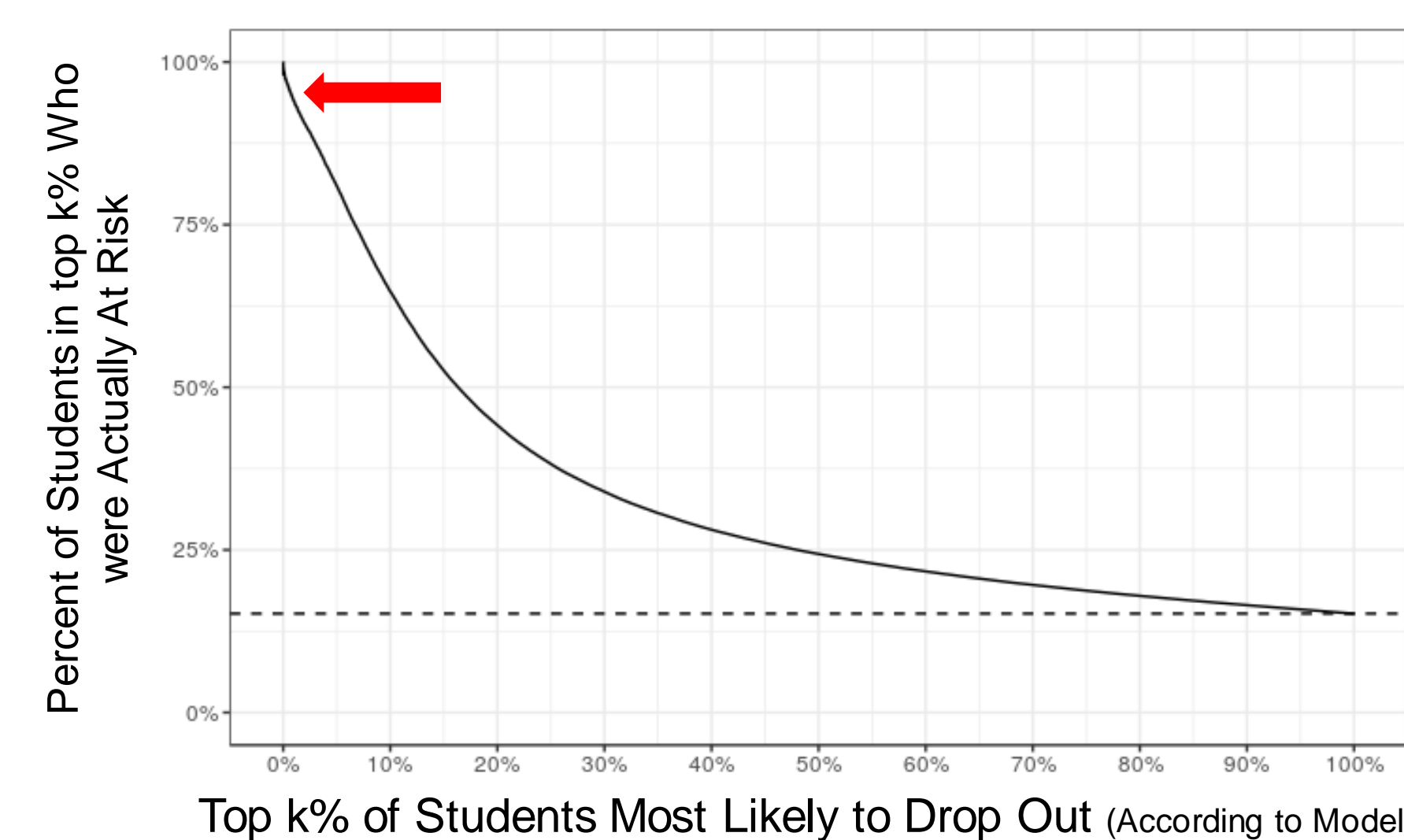
What Factors Affect a Student's Likelihood of Dropping Out?

Choosing features to predict whether a student will “drop out”



We will predict whether a student will "drop out" using the following features:

1. Grade level
2. Attendance
3. Academic Performance (GPA)
4. Poverty (receive free lunch)
5. Gender
6. Ethnicity
7. School attendance rate
8. School graduation rate
9. School average Regents scores



Top k% of Students Most Likely to Drop Out (According to Model)

Model Results

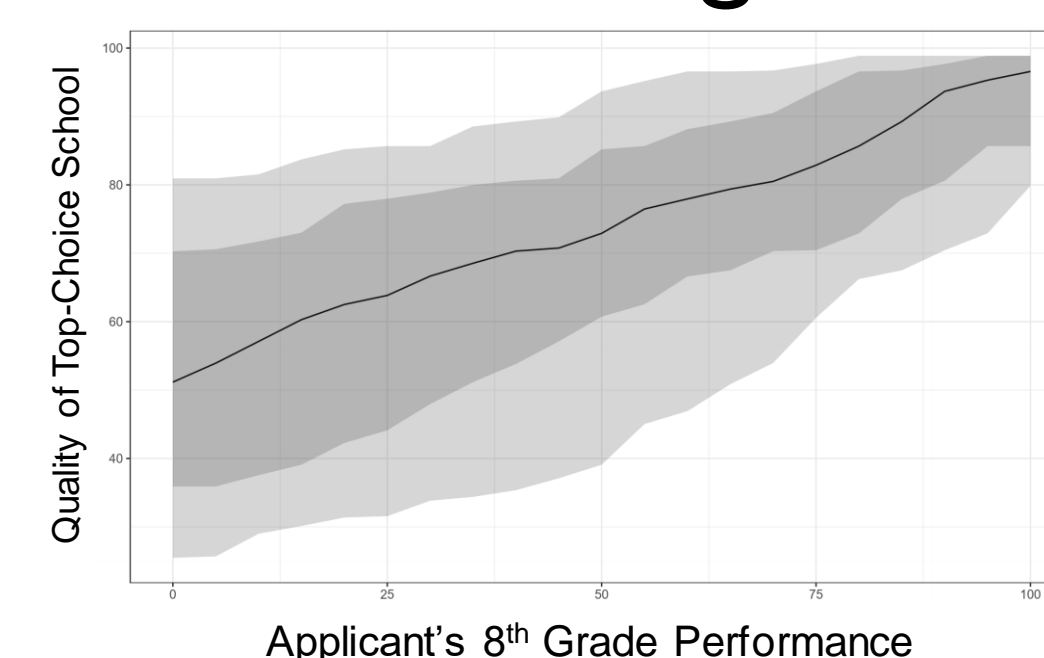
If we intervene with the **top 1%** of students predicted to drop-out, nearly all of the students we help would have been predicted as future “drop-outs”!

How do students choose from over 400 high schools?

The Choice System:

- Students can rank up to 12 high school programs **anywhere** in the five NYC boroughs
- The high school programs rank their applicants.
- A stable matching algorithm pairs applicants to high school programs
- Unmatched students can update their rankings for subsequent rounds

Understanding Students' Choices



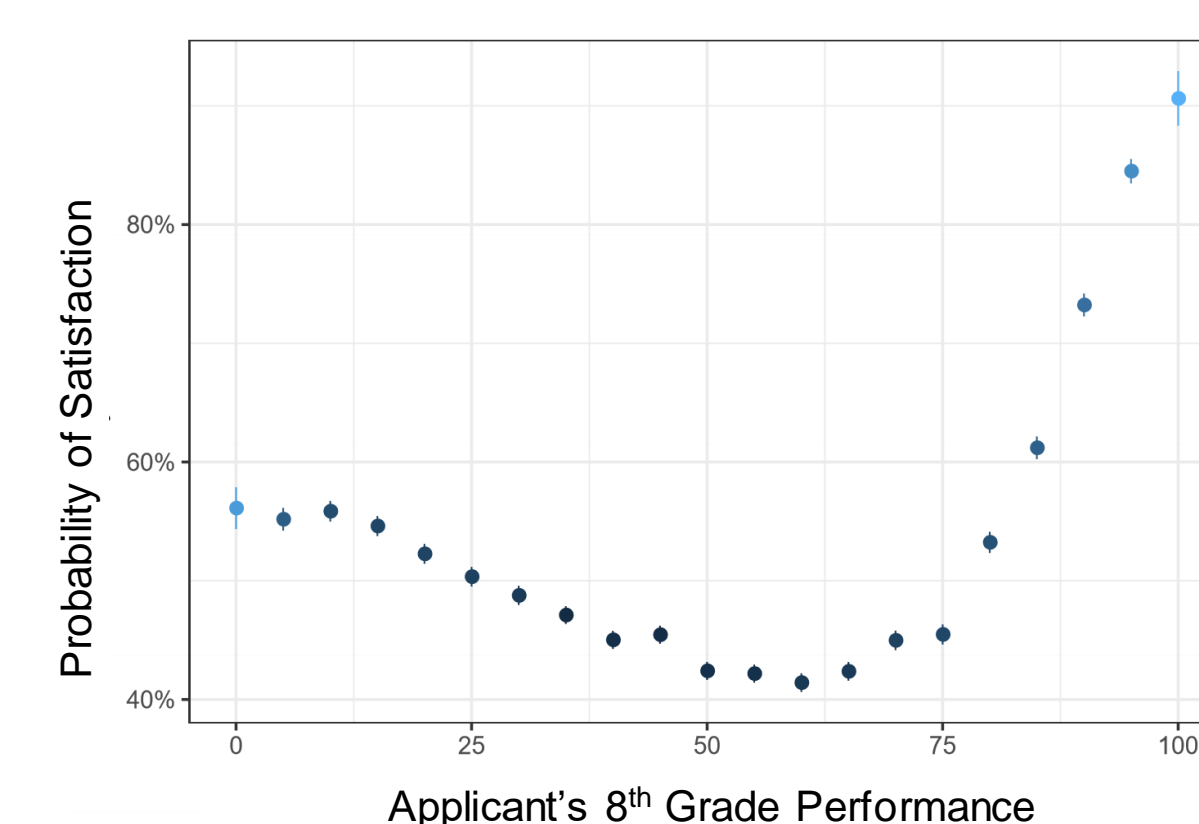
- Academically Low-performers apply to low-performing schools, and are accepted and **satisfied**



- Black and Hispanic applicants opt for lower-ranked schools

Can we predict if a student will be **satisfied*** ?

*Satisfied means a student gets top choice, or receives specialized offer



Higher performing and lower performing students are more likely to be satisfied than mid-performers

To increase student satisfaction:

The High School Similarity Network

If you are applying to **Beacon High School**, you may also be interested in the following schools

1	Baruch College Campus High School
2	Millennium High School
3	Bard High School Early College
4	Bard College Campus High School
5	Eleanor Roosevelt High School

For the **Bronx High School of Science**, you may also be interested in the following schools

1	Bronx Academy for Software Engineering
2	Eximius College Preparatory Academy: A College Board School
3	Collegiate Institute for Math and Science
4	Pelham Preparatory Academy



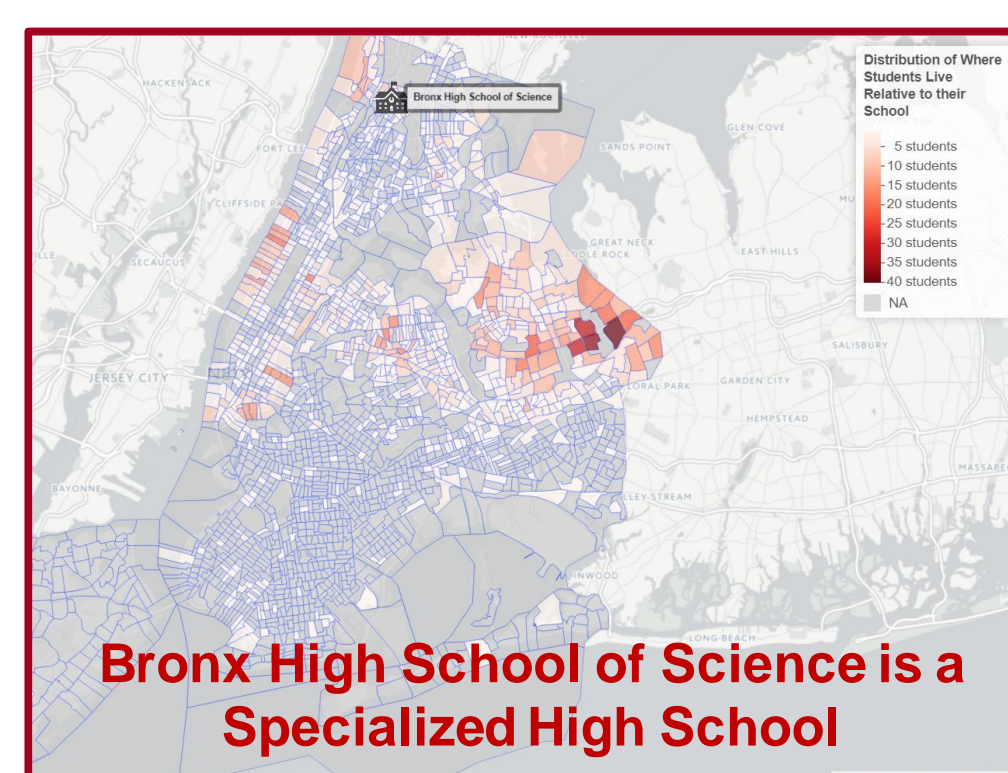
Scan to see the live network

bit.ly/nycschoolchoices

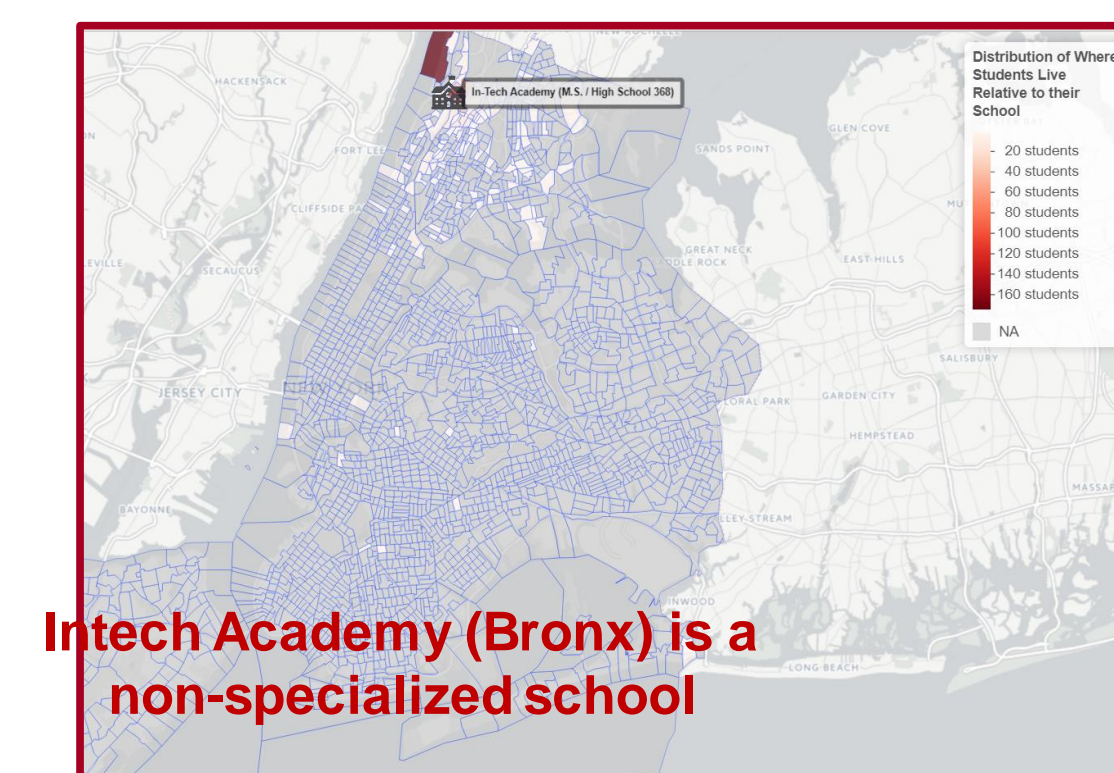


Understanding Student Geographic Distribution

A specialized high school has students who live all over NYC



A regular high school draws local students



A middle school sends students to nearby high schools

