



Qside: Act Now

Team members: Ritik Jain, Ritin Kalidindi, Naamna Modi, Gabriella Stickney

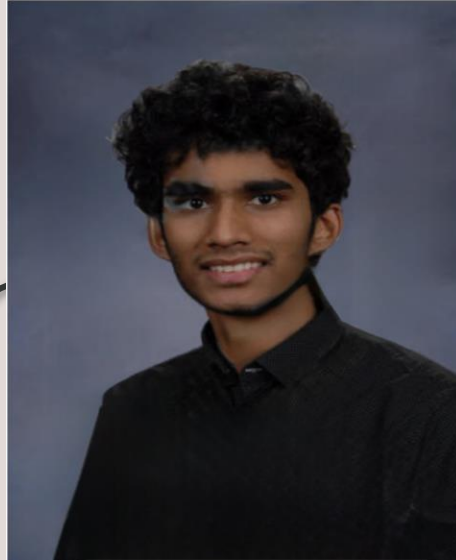
Community partners: Jude Higdon, Carlos Alvarez, Tyrone Bass

Meet the team!



Ritik Jain

Major: Data Science,
College of Natural
Science



Ritin Kalidindi

Major: Data Science,
College of Natural
Science



Naamna Modi

Major:
Computational Data
Science, College of
Engineering



Gabriella Stickney

Major:
Computational Data
Science, College of
Engineering



Company Name

QSIDE (Quantitative
Studies of Inclusion,
Diversity, and Equity)
Institute

Founders

Chad Topaz, Ph.D.
Jude Higdon, Ed.D.

Fundamental Principles

- Science First: We rely on scientific consensus as the basis for knowledge.
- Equity & Inclusion: We recognize and seek to address systemic exclusion based on identity and background.
- Respectful Dialogue: We welcome debate in the pursuit of justice—rooted in research, not denial of established facts.

Focus

QSIDE leads research-to-action projects, offering consulting for nonprofits and promoting the intersection of data science and social justice through education and community programs.

Established

Established as a 501(c)(3)
nonprofit in 2019



What is Chronic Absenteeism?

Chronic Absenteeism

- **Definition:** Students missing 10% or more of the school year, regardless of the reason. It includes both excused and unexcused absences. (Bauer et al., 2018)
- **Impact:**
 - Affects millions of students across the United States.
 - A comprehensive indicator of student disengagement or hardship.
- **Risks:**
 - Increased academic struggles and risk of falling behind.
 - Higher likelihood of school dropout.
 - Long-term socioeconomic consequences (Eklund et al., 2020).

Our Focus Question

"What are the key indicators of a lack of school presence?"

Goals



#1: Research topic

Establish key indicators on chronic absenteeism to be used to create our toy data

#2: Visualizations

Create data visualizations in Tableau that show these trends

#3: Storytelling

Create a dashboard to display all of our findings and conclusions



Project Milestones

Creating a Toy Data Set

- Size
 - 5 different excel sheets
 - Student demographics, ID_MetaData, Individual School Trajectory, School Demographics, Student School Presence
- Attributes:
 - 25 fake students
 - Name, Address, Race/Ethnicity, Birthdate, Number of siblings, Socioeconomic Status(Low/Middle/High), Food Insecure(1-5), etc.
 - 6 Real Illinois schools
 - 80 fake excused absence letters

Toy Data Set Samples

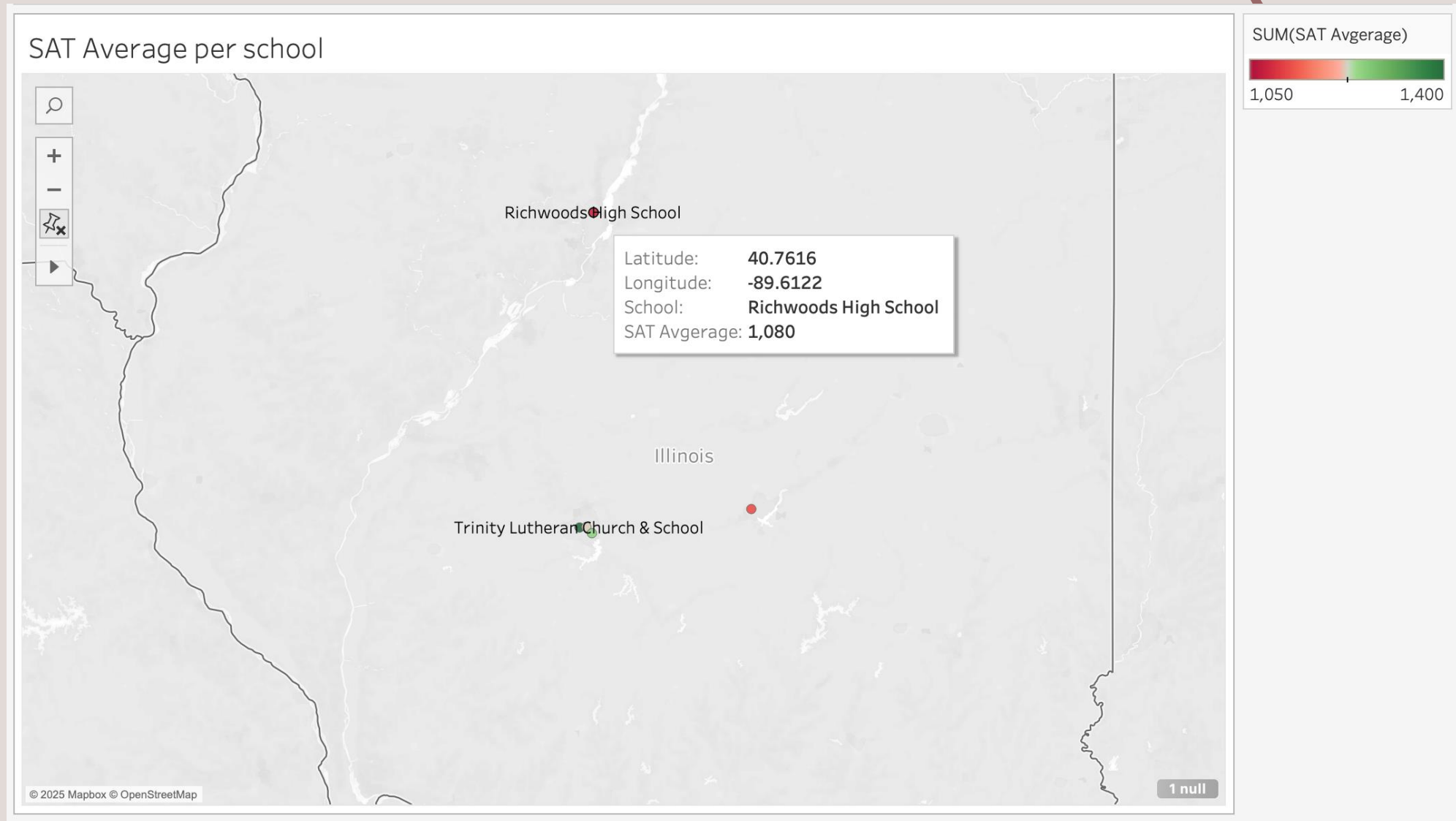
StudentID	SchoolID	DaysPresent	ExcusedAbsences	UnexcusedAbsences	Tardies	DatesAbsent	ReasonGiven	AbsenceNote	ReasonCategory
1001	2002	178	5	2	3	01/08/2025; 01/15/2025; 02/03/2025; 02/14/2025; 03/01/2025	Y	John had a high fever and chills, so we kept him home to recover.; John had a dentist appointment that took longer than expected.; John was out of town for a family emergency.; John had food poisoning and was too sick to attend school.; John missed school due to a delayed flight returning from a sports competition.	medical; appointment; family; atheltics
1002	2003	180	5	3	4	01/05/2025; 01/12/2025; 02/08/2025; 03/10/2025; 03/25/2025	Y	Jane had a migraine and needed to rest in a quiet environment.; Jane had a track meet out of town and missed the school day.; Jane had a doctor's appointment that could not be rescheduled.; Jane stayed home for a mental health day.; Jane was feeling nauseous and had to rest.	medical; atheltics, appointment, mental health
1003	2006	185	0	1	2	N/A	N/A	N/A	N/A
1004	2001	172	5	0	5	01/09/2025; 01/22/2025; 02/06/2025; 03/12/2025; 03/28/2025	Y	Emily had strep throat and needed antibiotics before returning to school.; Emily had a bad migraine and was too sensitive to light and noise.; Emily had an important tennis tournament and missed school.; Emily had to stay home to take care of a younger sibling while we handled a family emergency.; Emily missed school due to transportation issues when the car wouldn't start.	medical; atheltics; family; transportation
1005	2005	188	0	1	1	N/A	N	N/A	N/A

Student
School
Presence

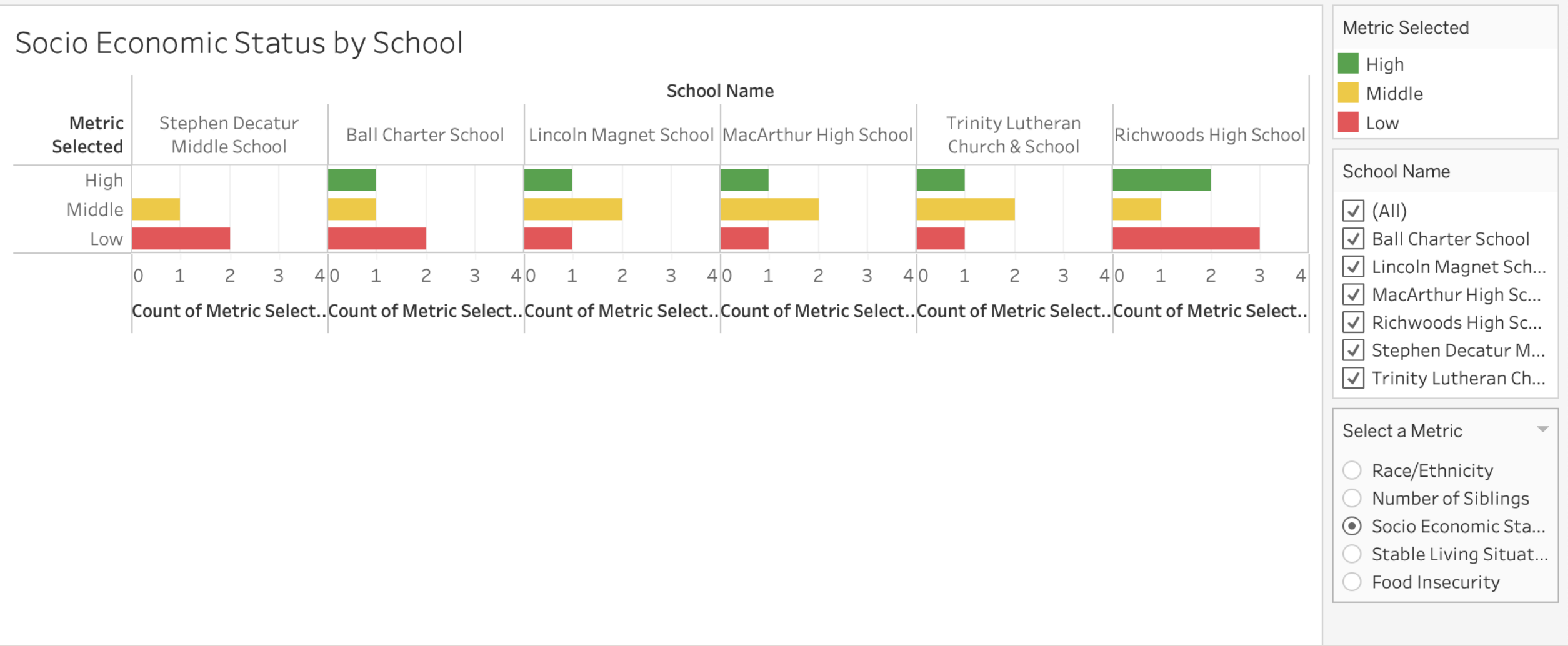
Student
Demographics

StudentID	StudentFirstName	StudentLastName	Race/Ethnicity	GenderAssignedatBirth	GenderIdentity	Address	City	State	ZipCode	Birthdate	NumofSiblings	SES	StableLivingSituation	FoodInsecure
1001	John	Doe	Caucasian	Male	Non-Binary Femme	2421 Arrowhead Dr	Springfield	IL	62702	5/14/2008	2	Low	2	1
1002	Jane	Smith	Asian	Female	Cisgender Female	922 N 4th St	Springfield	IL	62702	9/21/2007	1	Middle	3	4
1003	Michael	Johnson	African American	Male	Cisgender Male	2213 W Chatsford Ct	Peoria	IL	61615	12/2/2006	3	High	1	5
1004	Emily	Davis	Hispanic	Female	Pangender Fluid	344 Point Bluff Dr	Decatur	IL	62521	3/11/2009	0	Low	5	2
1005	William	Brown	Caucasian	Male	Genderqueer Femme	2001 Marland St	Springfield	IL	62702	7/30/2008	2	Middle	3	5

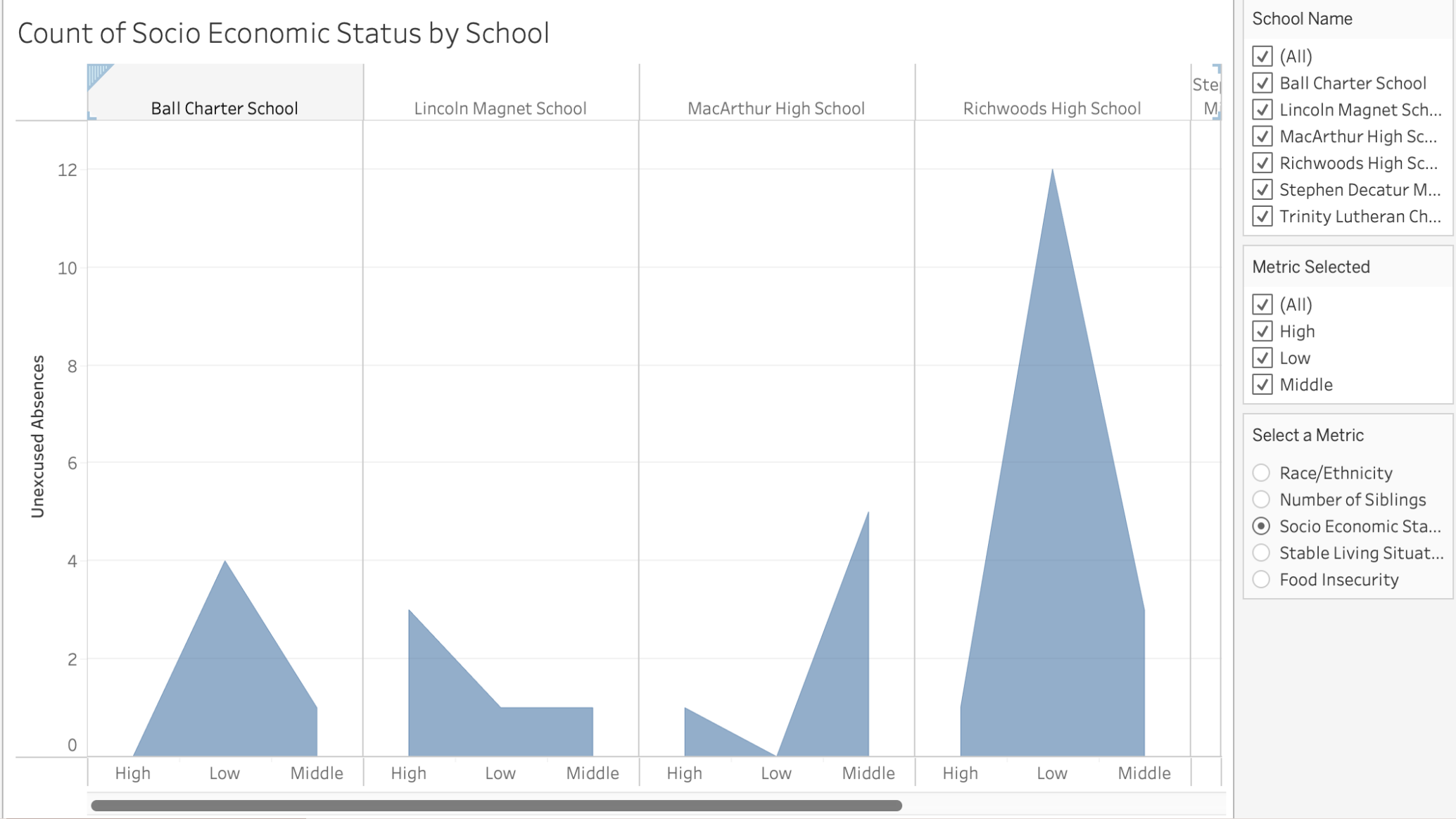
SAT Average per School



Socioeconomic Status by School

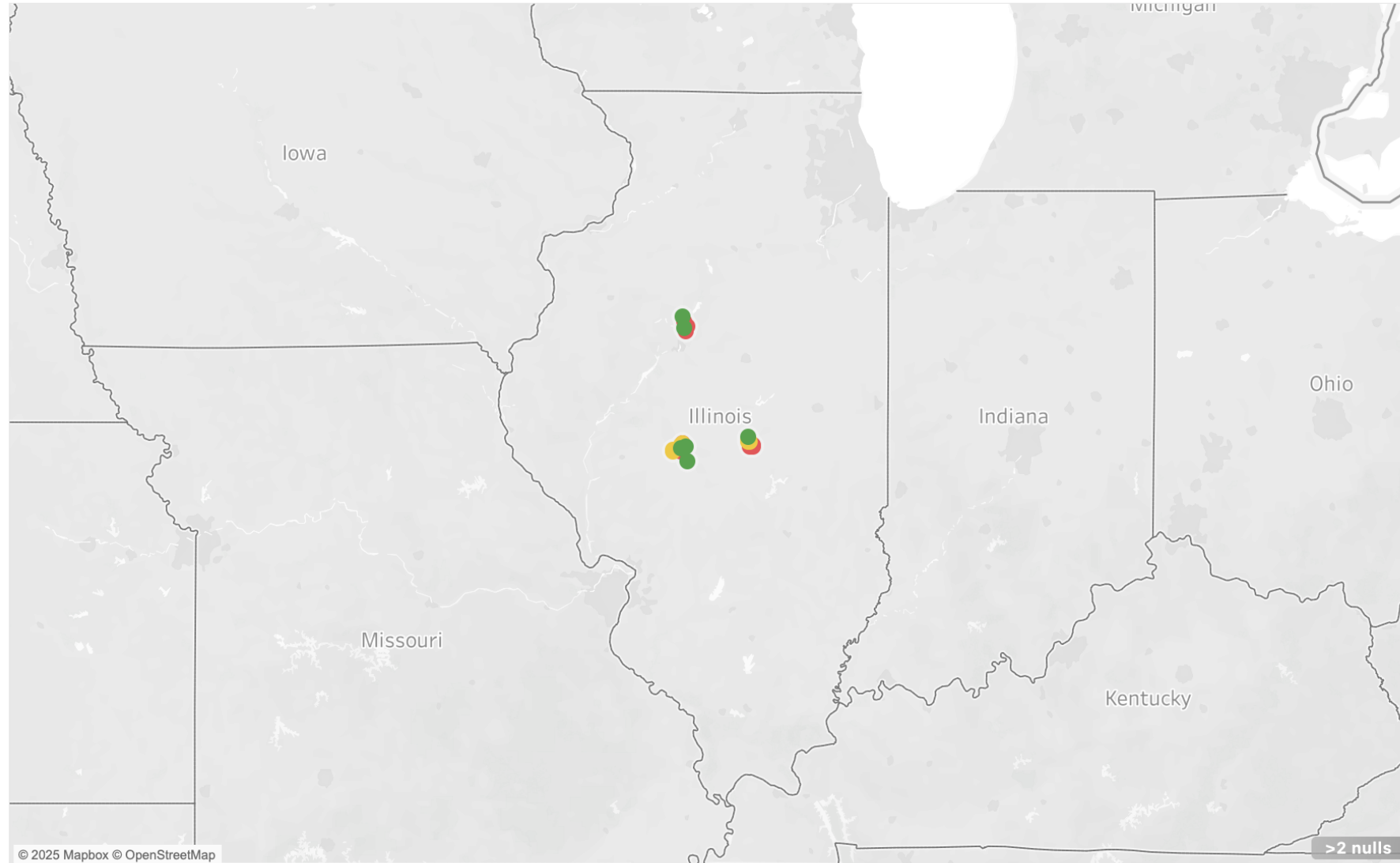


Count of Socioeconomic Status by School



Student GeoIDs Socioeconomic Status

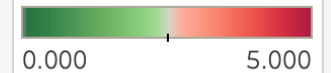
Student GeoIDS Socio Economic Status Color Map



School Name Student ...

- ☒ (All)
- ☒ Ball Charter School
- ☒ Lincoln Magnet Sch...
- ☒ MacArthur High Sc...
- ☒ Richwoods High Sc...
- ☒ Stephen Decatur M...
- ☒ Trinity Lutheran Ch...

AVG(Unexcused Absen...



Metric Selected

- ☒ High
- ☐ Middle
- ☐ Low

Select a Metric

- ☐ Race/Ethnicity
- ☐ Number of Siblings
- ☒ Socio Economic Sta...
- ☐ Stable Living Situat...
- ☐ Food Insecurity

Tableau Demo Video

Tableau Desktop Public Edition

Connections

Student_GEOIDs
Microsoft Excel

Student_Toy_data
Microsoft Excel

School_Lat_Lon
Microsoft Excel

tl_2023_17_tabblock20
Spatial file

School_Lat_Lon (2)
Microsoft Excel

Sheets

Use Data Interpreter

Data Interpreter might be able to clean your Microsoft Excel workbook.

Sheet1

New Union

New Table Extension

Sheet1+ (Multiple Connections)

Sheet1

StudentDemographics

tl_2023_17_tabblock20.s...

StudentSchoolPresence

SchoolDemographics

Sheet11

SchoolDe... — Sheet11

25 rows

How do relationships differ from joins? [Learn more](#)

SchoolDemographics

Operator

Sheet11

Abc School Name

=

Abc School

Add more fields

Performance Options

StudentID (StudentSchool)	School ID	Days Present	Excused Absences	Unexcused Absences
1001	2002	178	5	
1002	2003	180	5	
1003	2006	185	0	
1004	2001	172	5	
1005	2005	188	0	
1006	2004	181	5	

Go to Worksheet

Ritik Jain

Buy Tableau

Add



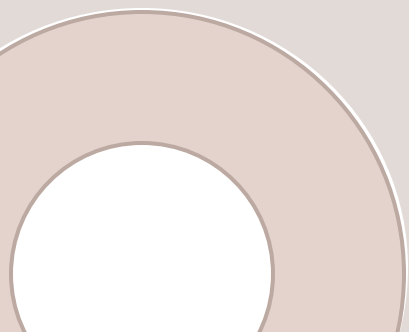
Final Thoughts

Conclusions



Our project explored chronic absenteeism using synthetic data and Tableau visualizations, examining key factors like socioeconomic status and school resources.

While relying on artificial data, the project provides a foundation for future work with real datasets, offering valuable insights into absenteeism patterns and school performance.



Project Challenges

- **Lack of Real-World Data:** Had to create and use a synthetic "toy dataset" due to unavailability of real data.
- **Dataset Limitations:** Small dataset size and scope made it difficult to draw strong conclusions or identify consistent relationships.
- **Sparse Visualizations:** Visualizations appeared sparse or inconclusive due to the limited data, making it hard to identify clear patterns at first glance.
- **Complexity of Chronic Absenteeism:** Representing the nuanced, multifaceted issue of absenteeism within a limited dataset posed challenges in accurately conveying key insights.

Future Work

01

Guided Data Collection:
Use our toy data as a guide for site leaders to collect real data and variables.

02

Integrate Real Data into Tableau Maps:
Implement real data into our current Tableau maps to provide accurate, actionable insights.

03

User-Friendly Front-End:
Create an intuitive interface for non-technical site leaders to easily load their data and generate visualizations.

04

Potential Expansion:
Explore expanding the project to address other global issues (i.e. urban development or poverty).

What have we learned this semester?

- Tableau
- Utilizing Generative AI in an Open Source Project
- Teamwork
- Time management
- Data Mapping
- Running Efficient Meetings
- Pitching your work to a non-technical audience



Thank you!



Resources

Resources

- Eklund, K., Burns, M. K., Oyen, K., DeMarchena, S., & McCollom, E. M. (2020). Addressing Chronic Absenteeism in Schools: A Meta-Analysis of Evidence-Based Interventions. *School Psychology Review*, 51(1), 95–111. <https://doi.org/10.1080/2372966X.2020.1789436>
- Gottfried, M. A. (2015). Chronic Absenteeism in the Classroom Context: Effects on Achievement. *Urban Education*, 54(1), 3-34. <https://doi.org/10.1177/0042085915618709> (Original work published 2019)
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