

# COVID-19 Simulation Integrated Model (*COVSIM*) to Inform Local Decision-Making

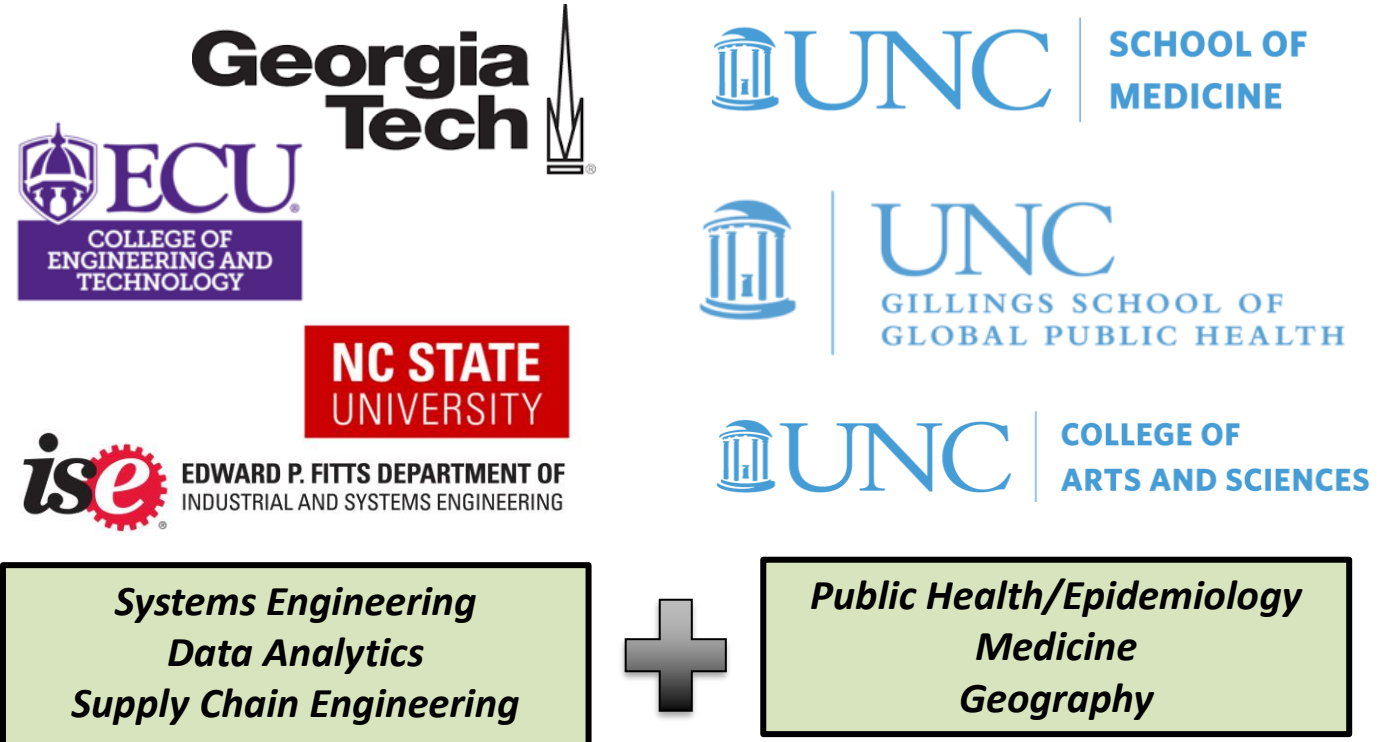
## COVID-19 Modeling Projections for Schools Part 1: Model Background



## The “COVSIM” Model team

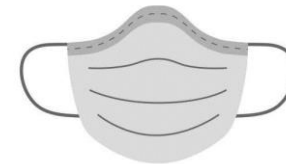
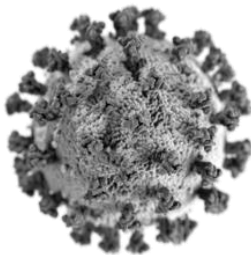
The COVSIM team is one of six modeling teams funded by CDC and the Council for State and Territorial Epidemiologists to:

- forecast SARS CoV-2 infections and outcomes,
- estimate the impact of intervention scenarios, and
- support state and local decision-makers



## Our Modeling Objective

To estimate the proportion of susceptible students infected throughout a school semester, depending on incoming protection as well as masking and testing policies.



# Imagine a school...

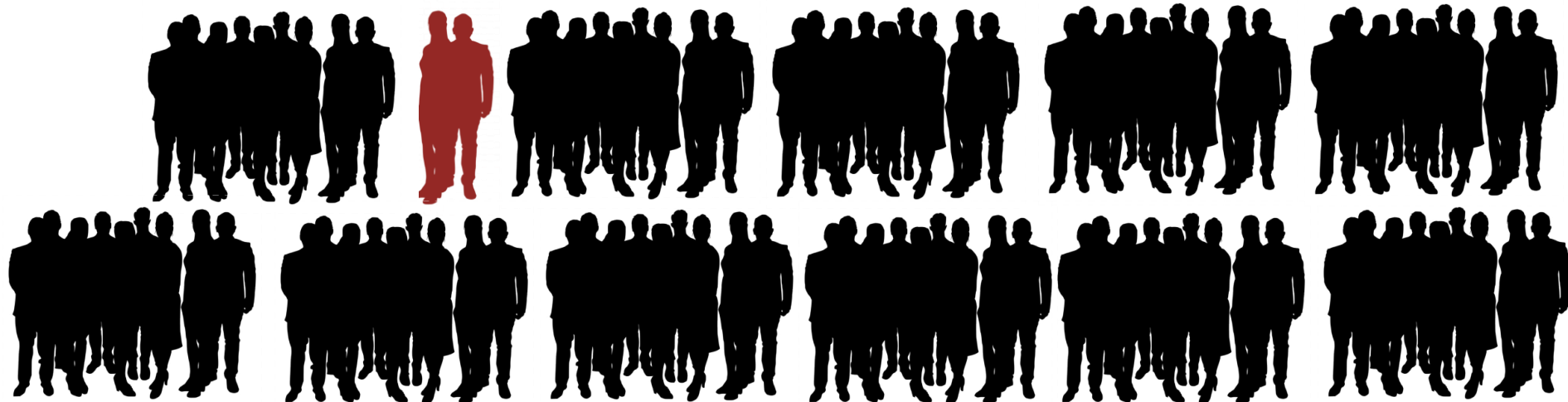
- Student population: **500**



# Imagine a school...



- Student population: 500
- **2-3 students begin infected with COVID-19 at the start of the semester**

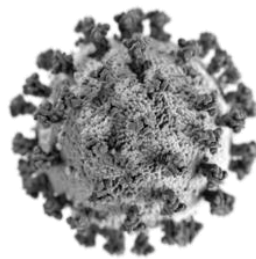


# Imagine a school...



- Student population: 500
- 2-3 students begin infected with COVID-19 at the start of the semester
- Some students have either already had COVID-19 or have received the vaccine (“incoming protection”), or are susceptible to becoming infected

If **30%**  
of students  
have had  
COVID-19...



...and **20%** of  
students have  
received the  
vaccine.



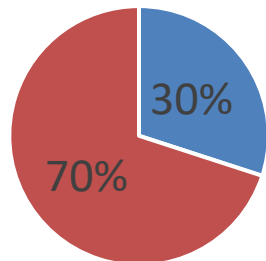
Then incoming  
protection:  
**50%**

# Imagine a school...

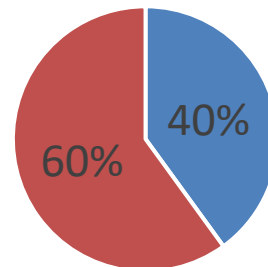


- Student population: 500
- 2-3 students begin infected with COVID-19 at the start of the semester
- Some students have either already had COVID-19 or have received the vaccine (“**incoming protection**”), or are susceptible to becoming infected

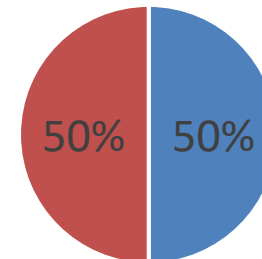
Elementary School Setting



Middle School Setting



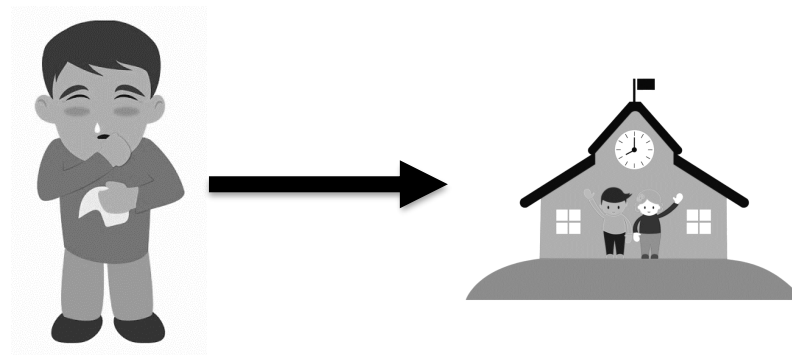
High School School Setting



■ Incoming Protection ■ Susceptible

# Imagine a school...

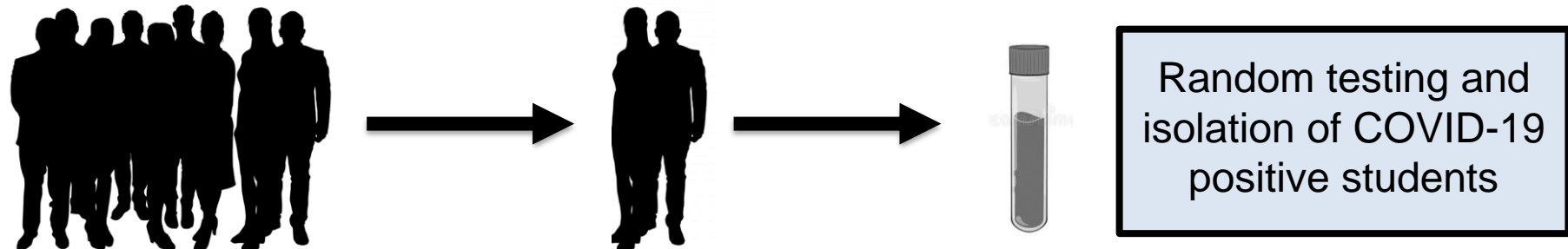
- Student population: 500
- 2-3 students begin infected with COVID-19 at the start of the semester
- Some students have either already had COVID-19 or have received the vaccine (“incoming protection”), or are susceptible to becoming infected
- Every week, **one new student becomes infected** with COVID-19 outside the school





# Imagine a school...

- Student population: 500
- 2-3 students begin infected with COVID-19 at the start of the semester
- Some students have either already had COVID-19 or have received the vaccine (“incoming protection”), or are susceptible to becoming infected
- Every week, one new student becomes infected with COVID-19 outside the school
- Availability of **random RT-PCR testing and isolation** among students every week



# Imagine a school...



- Availability of random RT-PCR testing and isolation among students every week

