Session #2:
Reopening Standards and Tools

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Now What? webinar series

473 Participants

302 States & School Districts

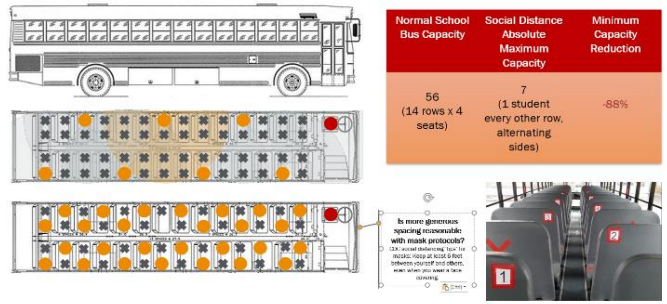
30 Weekly webinars

46 Hours of content

1,400 Combined hours of peer-to-peer dialog

Webinar topics

Date	Speaker	Organization	Topics
16-Apr	Mary Filardo	NCSF	Federal Legislation
23-Apr	Mary Filardo	NCSF	Federal Legislation, Public Health Strategies for Reopening School Facilities
30-Apr	Mary Filardo	NCSF	Capacity modeling and Covid-19 response budgeting
7-May	Mary Filardo	NCSF	Capacity modeling and Covid-19 response budgeting
14-May	Paul Mills	CannonDesign	Capacity modeling and Covid-19 response budgeting
21-May	Mary Filardo	NCSF	CDC Guidance, Summary of "What's keeping you up at night"
28-May	Mary Filardo	NCSF	New CDC Guidance, Summary of Philadelphia teacher survey, operational planning framework
4-Jun	Mary Filardo	NCSF	NEW GAO Guidance and Federal Legislation.
11-Jun	Julius Monk	Durham Public Schools	Durham's reopening plans
18-Jun	Juan Mireles, Fred Yeager, Jennifer Schwinn	California Department of Education	State-specific guidance and reopening plans
25-Jun	Jeff Wilson	Huntsville City Schools	Developing and implementing professional development around Covid response
2-Jul	Debbie White	Goochland County Public Schools	Reopening with rural schools
9-Jul	Guy Bliesner	Idaho Department of Education	School Safety in the pandemic
16-Jul	Cindy Powell	Arlington Independent School District	Reopening a large district in TX
23-Jul	Kathleen Moore & Jeff Vincent	National Academies of Science, Engineering and Medicine	Reviewing the NASEM report.
30-Jul	Phoebe Beierle & Thomas Horton	USGBC	Indoor Air Quality
6-Aug	Josh Chism	Colorado Springs D11	HVAC renovations
13-Aug	David Lipton	North Carolina Department of Health & Human Services	Cleaning & Disinfecting
20-Aug	Rob Olsen & Chris Peterson	Iowa Department of Education	Athletics
27-Aug	Lauren Ancel Meyers	University of Texas, Austin	Understanding Covid-19 spread & cohort size
3-Sep	Sean Gill & Lisa Chu	Center on Reinventing Public Education	Sampling school reopening plans
10-Sep	Jeff Vincent	Center for Cities + Schools, UC Berkeley	Summary guidance for school reopening
17-Sep	Scott Leopold	Cooperative Strategies	How to approach student demographic analyses for 2020
24-Sep	Will Morris & Bobby Offterdinger	EdConnective	Professional Development
1-Oct	David Steiner	Johns Hopkins Institute for Education Policy	Learning loss during Covid and how to close the gaps.
8-Oct	Mary Filardo	NCSF	Review of lessons to-date
15-Oct	Paul Mills	CannonDesign	Applying Cohort Modeling
29-Oct	Erin Sullivan and team	JeffCo	Student and Staff Mental Health

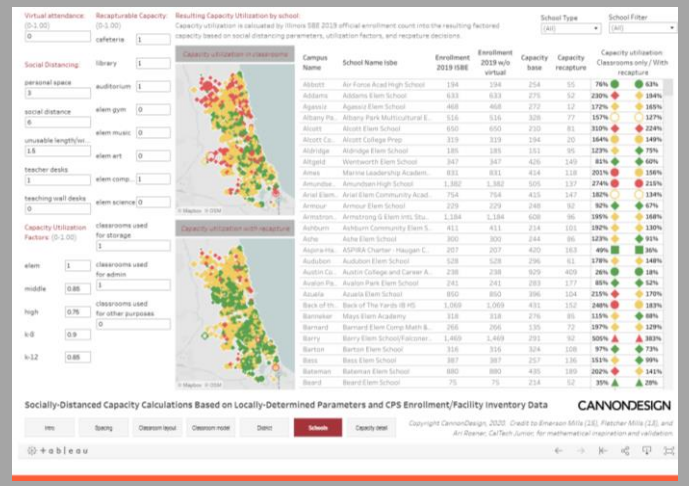


What school operators are thinking about

- How to make decisions with limited and shifting guidance.
- Strategies to feasibly minimize health risk.
- How much prevention is enough?
- How to pay for operational impact.

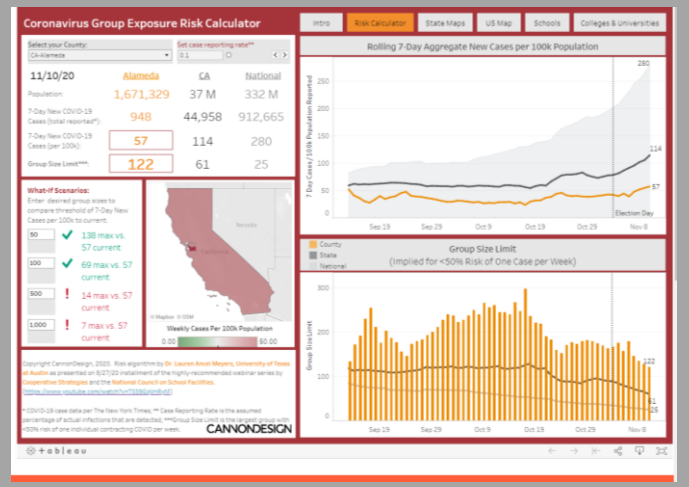
- Learning loss.
- (What we can learn from this experience).

Data tools for COVID-19 response



Social Distancing & Classroom/School Capacity Model

www.cannondesign.com/classroom-capacity-calculator/



School and University Cohort Exposure Risk Model

w/ Dr. Lauren Ancel Meyers, UT Austin

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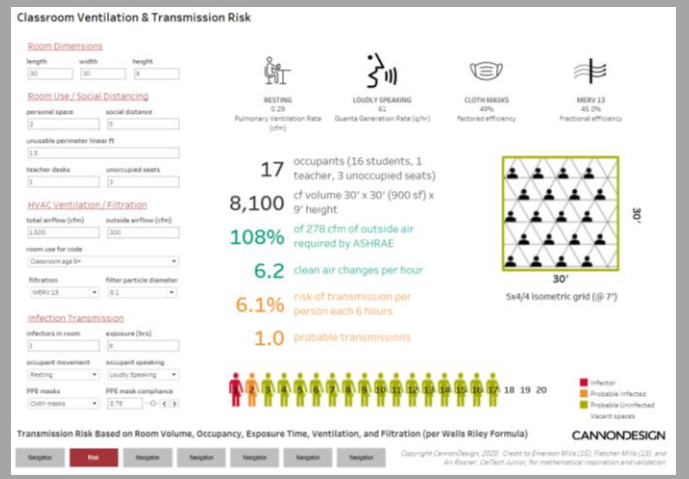
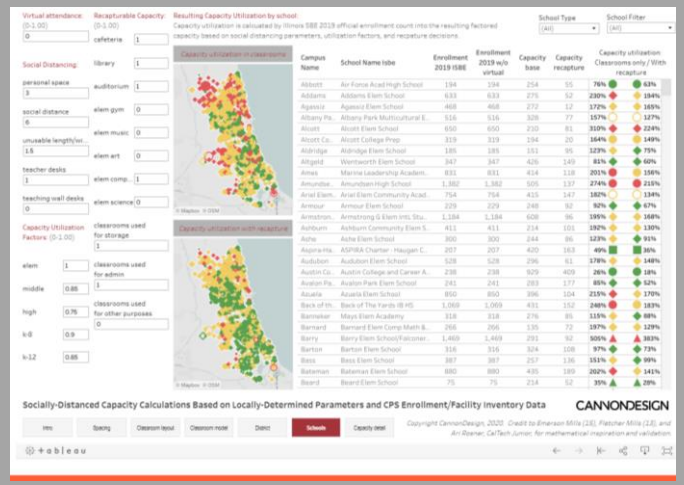


Classroom Ventilation and Transmission Risk Model

w/ Dr. Jose Jiménez, UC Boulder and ASHRAE Epidemic Task Force

https://www.cannondesign.com/covid-transmission-risk/

Data tools for COVID-19 response



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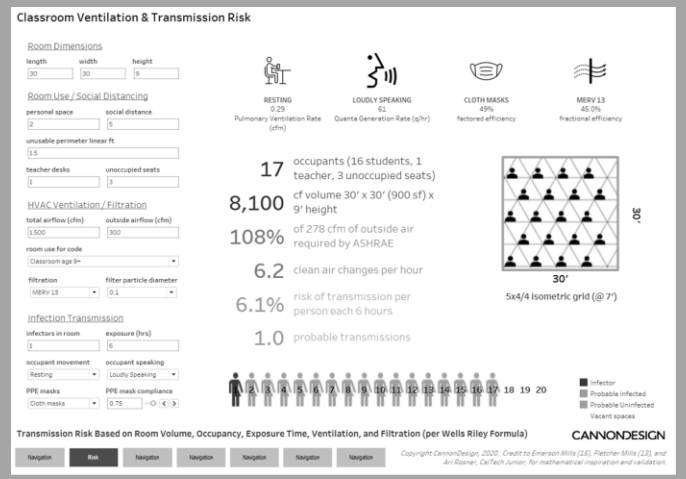

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Parametric Capacity Modeling

Set custom spatial parameters

Define which spaces are recapturable for capacity

Socially-Distanced Classroom Capacity

A parametric model based on user-specified assumptions and reasonable permutations of classroom length-width dimensions.

Model parameters	
social distancing ft apart	6
personal space ft	3
avg fixed furniture depth	1.5
spaces for teacher/others	1
Classroom SF range low	700
Classroom SF range high	800

Utilization Factor	
Primary	0.95
Secondary	0.75

% of Rooms Recaptured	
Primary Art Room	0%
Primary Cafeteria	100%
Primary Computer Lab	100%
Primary Drama	100%
Primary Music Room	0%
Primary PE/Dance	0%
Primary PTA/Community	100%
Primary Pullout Room	0%
Primary Science Room	0%
Primary Stage	100%
Secondary Media Center	100%
Secondary PTA/Community	0%
Secondary Pullout Room	25%

	Socially-Distanced Capacity Utilization Brackets (# of Schools)			Socially-Distanced Capacity Utilization Brackets (# of Schools), Including Recapturable Capacity			
	<100%	100-200%	>200%	<100%	100-200%	>200%	
Primary	2	18	57	2	23	52	77
Secondary	2	12	25	2	12	25	39
	4	30	82	4	35	77	116

District	School Name	School type	social distanced capacity	social distanced recapturable capacity	utilization social distanced	utilization social distanced with max recapturable space
Central District	Waimalu El	ES	284	159	138%	88%
Central District	Aiea El	ES	211	97	150%	103%
Central District	Alvah Scott El	ES	299	179	159%	99%
Central District	Webling El	ES	239	53	178%	146%
Central District	Pearl Ridge El	ES	259	44	187%	160%
Central District	Aiea High	HS	546	236	183%	128%
Central District	Aiea Intermediate	MS	373	64	162%	138%
Central District	Wahiawa El	ES	278	138	143%	95%
Central District	Solomon El	ES	501	209	153%	108%
Central District	Iliahi El	ES	211	95	178%	123%
Central District	Wheeler El	ES	382	75	178%	149%
Central District	Helemano El	ES	276	77	187%	146%
Central District	Kaala El	ES	228	96	189%	133%
Central District	Inouye El	ES	341	114	193%	144%
Central District	Leilehua High	HS	918	280	179%	137%
Central District	Wahiawa Middle	MS	526	96	156%	132%
Central District	Wheeler Middle	MS	400	146	195%	143%
Central District	Kipapa El	ES	374	86	151%	123%
Central District	Mililani Ike El	ES	358	101	173%	135%
Central District	Mililani Waena El	ES	380	98	201%	160%
Central District	Mililani Mauka El	ES	381	116	204%	156%
Central District	Mililani Uka El	ES	301	234	234%	132%
Central District	Mililani High	HS	1073	147	244%	215%
Central District	Mililani Middle	MS	685	127	274%	231%
Central District	Red Hill El	ES	246	96	181%	130%
Central District	Salt Lake El	ES	320	117	218%	160%
Central District	Shafter El	ES	187	45	222%	179%
Central District	Moanalua El	ES	287	105	228%	167%
Central District	Moanalua High	HS	950	206	213%	175%
Central District	Moanalua Middle	MS	337	88	253%	200%
Central District	Mokulele El	ES	236	125	95%	62%

‘What-if’ implications for each school or entire portfolio

CANNONDESIGN

Demo

www.cannondesign.com/classroom-capacity-calculator/

www.cannondesign.com/massachusetts-capacity-dashboard/

www.cannondesign.com/chicago-capacity-dashboard/

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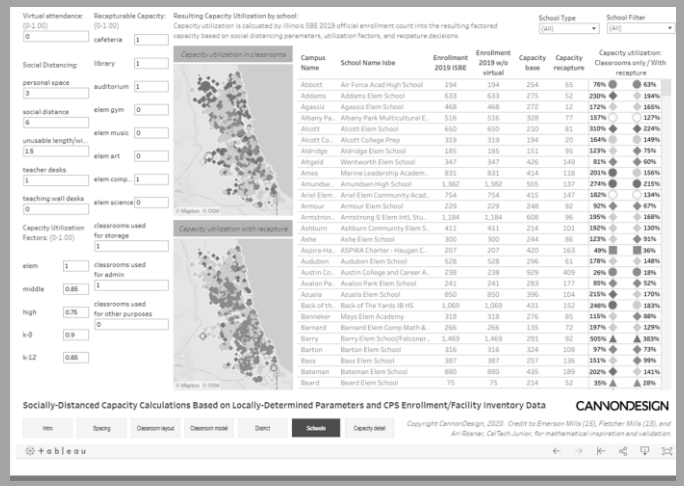

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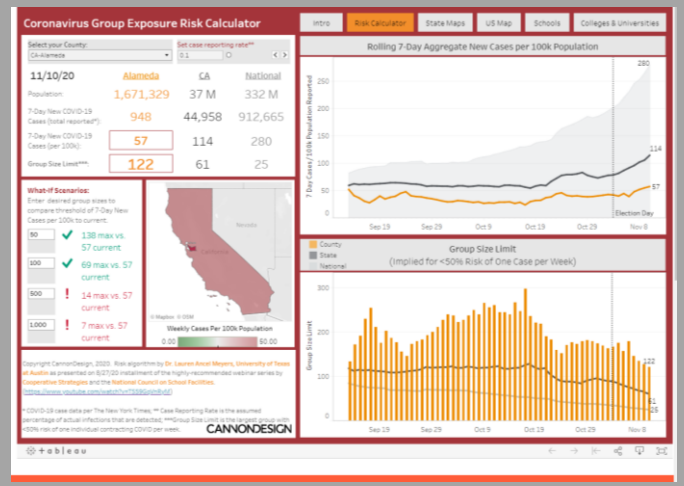

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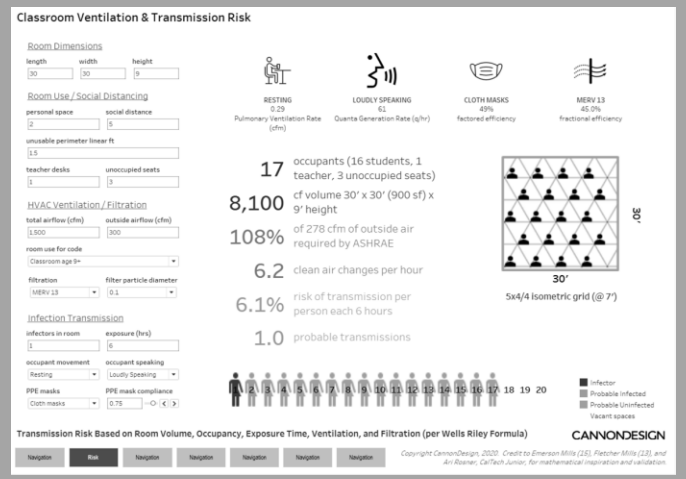

Classroom Ventilation and Transmission Risk Model

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INTRODUCTIONS

Dr. Lauren Ancel Meyers

- Professor of Integrative Biology Sciences at UT Austin
- Trained as a mathematical biol Stanford Universities and has b field of network epidemiology machine learning to improve o forecasting and control.
- Leads an interdisciplinary team of scientists, engineers, and public h uncovering the social and biological drivers of epidemics and buildin CDC and other global health agencies to track and mitigate emergin including COVID-19, pandemic influenza, Ebola, HIV, and Zika.

Quick threshold

1. **Look up:** number of confirmed cases per 100,000 people over the last 7 days

   Durham county: **77** cases per 100,000

   Hillsborough county: **32** cases per 100,000

2. **Calculate:** threshold for 50% chance that a student/staff will arrive infected

   S = number of people at school

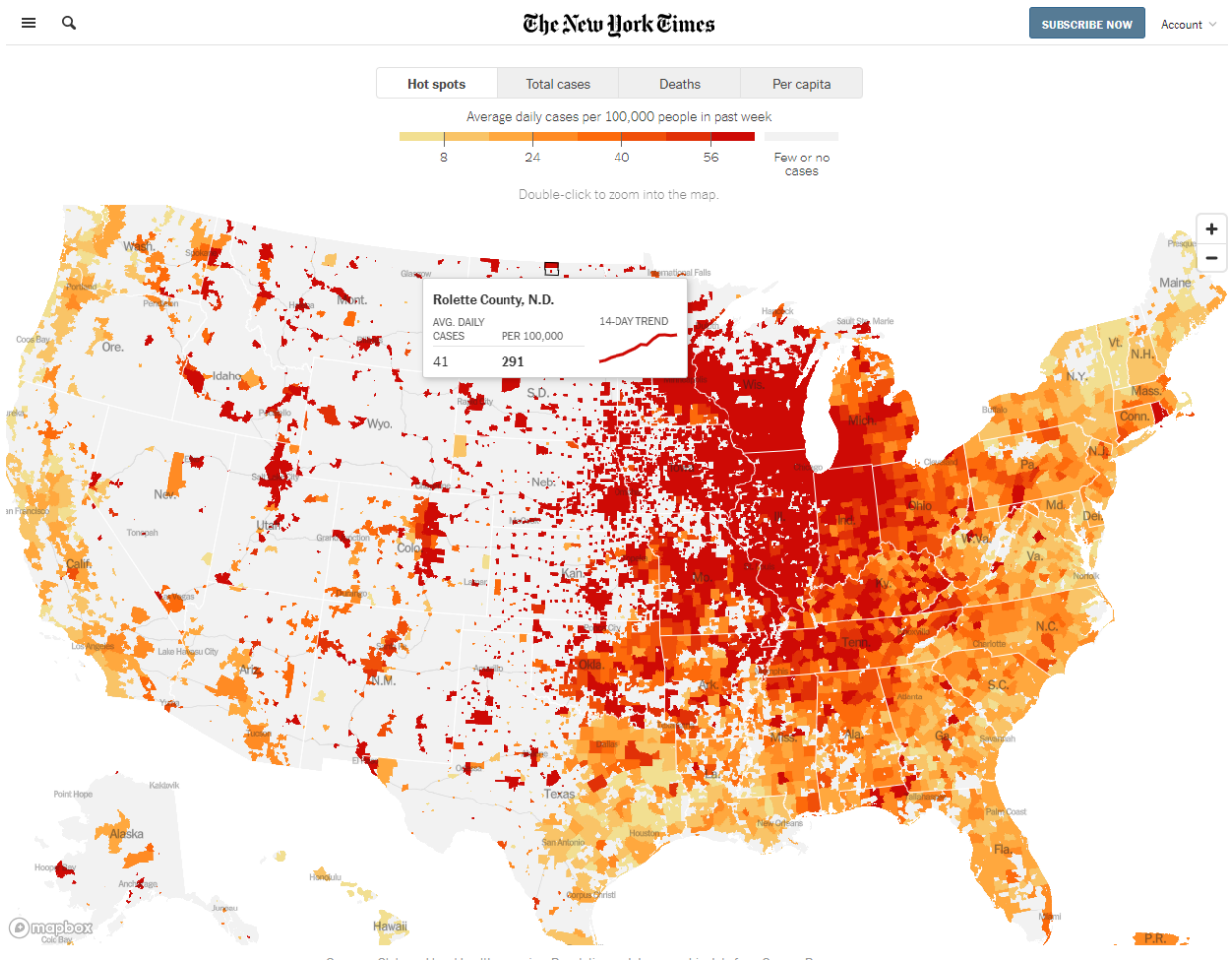
   C = case reporting rate

   Threshold = 69,000 · C/S

3. **Compare:** 7-day case counts to safety threshold

   Assuming 1 in 10 cases detected (0.1)

S	Threshold
25	276
50	138
75	92
100	69
200	35
300	23
400	18
500	14



	TOTAL CASES	PER 100,000	DAILY AVG. IN LAST 7 DAYS	▼PER 100,000	WEEKLY CASES PER CAPITA (FEWER – MORE)
– North Dakota MAP »	56,357	7,395	1,309.3	171.8	March 1 – Nov. 10
Eddy	290	12,680	9.9	431	
Walsh	983	9,238	43	404.1	
Cavalier	240	6,380	13.6	360.8	
Nelson	247	8,579	8.9	307.6	
Rolette	840	5,926	41.3	291.2	
Pierce	234	5,887	11	276.7	
Stutsman	1,543	7,453	56.6	273.2	
Ward	5,161	7,630	180.6	267	
Pembina	391	5,749	16.6	243.7	

Demo

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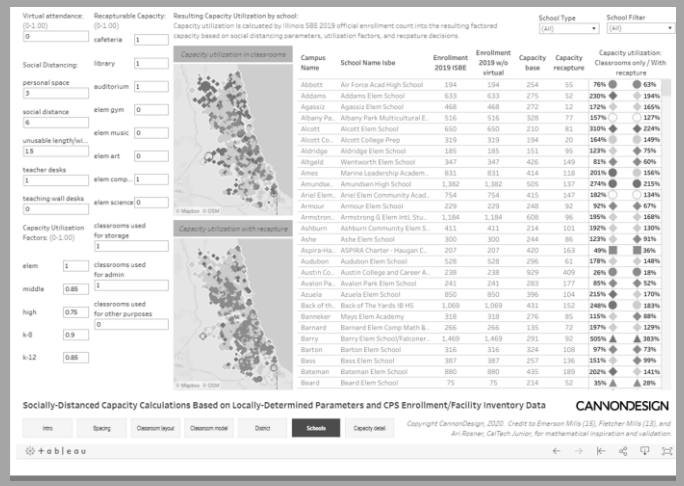

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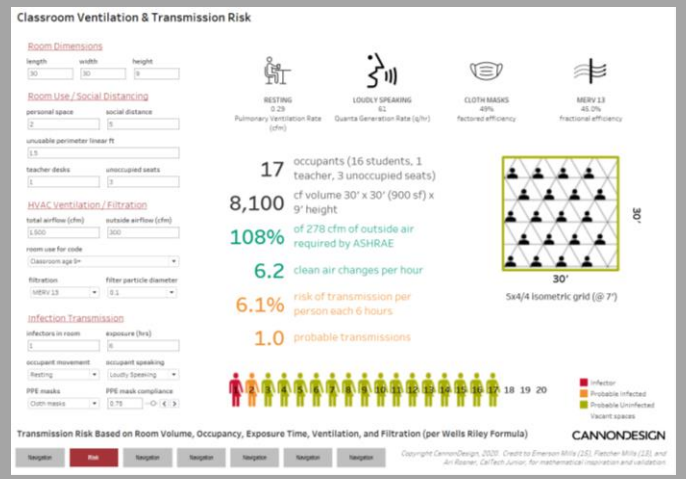

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Wells Riley Equation

$$P_I = \frac{C}{S} = 1 - \exp\left(-\frac{Iqpt}{Q}\right)$$

P_I is the probability of infection,
C is the number of infection cases,
S is the number of susceptibles,
I is the number of infectors,
p is the pulmonary ventilation rate of a person,
q is the quanta generation rate,
t is the exposure time interval, and
Q is the room ventilation rate with clean air.

Demo

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Discussion


THANK
YOU
GRACIAS
ARIGATO
SHUKURIA
DANKSCHEEN
BIYAN
SHUKRIA
TINGKI
YAQHANYELAY
TASHAKKUR ATU
SUKSAMA
EKHMET
MEHRBANI
GRAZIE
MAAKE
KOMAPSUMNIDA
JUSPAXAR
GOZAIMASHITA
EFCHARISTO
BOLZÏN
MERCI
PALDIES
SPASIBO
SPASSIBO
SNACHALHJYA
NUHUN
CHALTU
WABEEJA
MAITEKA
YUSPAGARATAH
HUI
GUI
HATUR
DHANYABAAD
AMMA
ATTO
MERSI
UNALCHÉESPI
DENKUUJA
NDIACHALHJYA
EKOJU
SIKOMO
HAKETAU
SANCO
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