Communicating Sewage Surveillance Data for a Public Health Response

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Communicating Sewage Surveillance (CoSeS)

Interactive group of researchers working with public health and communication scholars to build capacity and communication networks for sewage surveillance

- Funded by the Alfred P. Sloan Foundation

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Andrea Silverman, New York University
Alexandria Boehm, Stanford
Kyle Bibby, Notre Dame
Dominique Brossard, UW-Madison

ALFRED P. SLOAN FOUNDATION
UNIVERSITY of WISCONSIN UWMILWAUKEE
NYU
UNIVERSITY OF NOTRE DAME
Stanford University

Goal – build capacity and communication networks

Experts Panel

Researchers

Francis de los Reyes, North Carolina State University

Erin Lipp, University of Georgia

Daniel Gerrity, Southern Nevada Water Authority

Rachel Noble, University of North Carolina

John Griffith, Southern California Coastal Water Project

Patricia Holden, University of California, Santa Barbara

Public health and wastewater

California Association of Sanitation Agencies

Centers for Disease Control and Prevention

County of Santa Clara Department of Environmental Health

New York City Department of Environmental Protection

Utah Department of Health

Wisconsin Department of Health Services

Researchers Panel: Methods and study design

Researchers since early March 2020 to compare findings

- There was no standard method; diverse approaches have led to faster discovery
- **Good QC is the key**

Controls: Many!

Whole process bovine corona virus (BCoV), Extraction: pepper mild mottle virus (PMMoV) Inhibition: BRSV, Assay controls: N1N2 rRNA standards, human microbiome member HF183, CrAssphage

Researchers Panel: Methods and study design

Researchers have meet since early March 2020 to compare findings

- Study design should fit question
- Involve public health and wastewater sector from the beginning

Full Experts panel: What does public health need?

- Convened discussions between researchers and public health/wastewater experts

- Discussed uses, challenges, barriers for using SARS-CoV-2 wastewater data

Public Health Focus groups November 2020

Invited state, regional, local public health

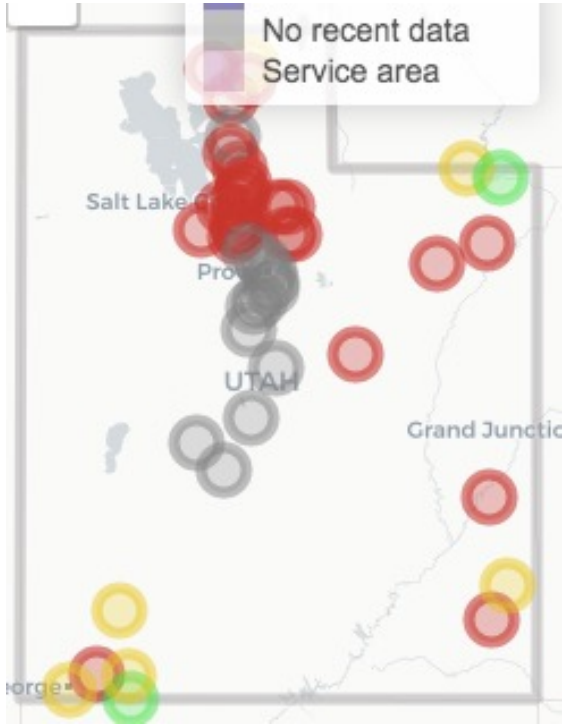
- discuss how they are using wastewater data
- create a two-way conversation and capture broad themes

Barrier 1. As a new data source, most public health agencies are not yet comfortable interpreting wastewater data.

- **Personnel and resources are stretched well past capacity**
- **Unfamiliar units of measure**: *case counts or hospitalizations have a relationship to disease in the community, wastewater surveillance data are presented as concentrations of SARS-CoV-2 gene copies per volume of wastewater*
- **Sources of uncertainty and variability** are not well characterized
- **Lack of methodological standardization**

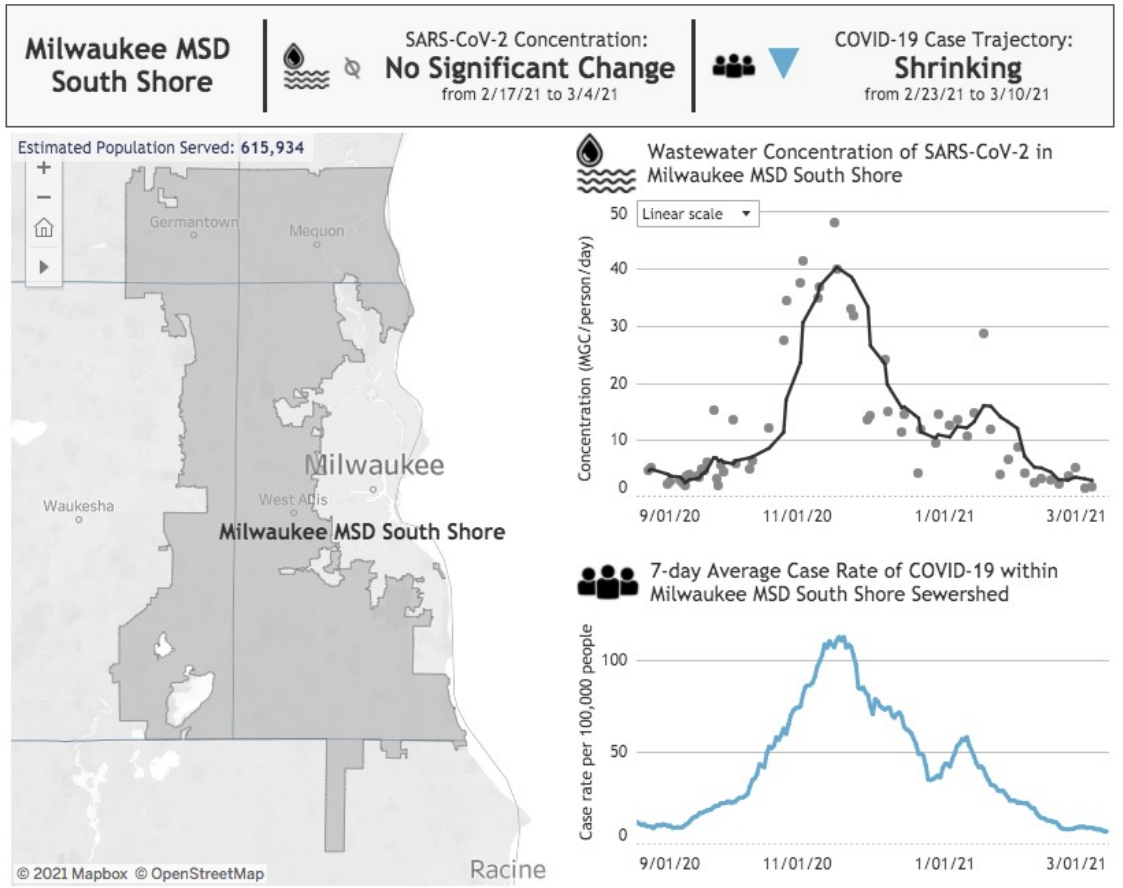
Barrier 2. Public health agencies want to see SARS-CoV-2 wastewater data in their own communities to gain confidence in its application and utility.

- Growing examples in many areas
- Proof of concept needed



Wisconsin

Utah



Broad insights
Experts Panel

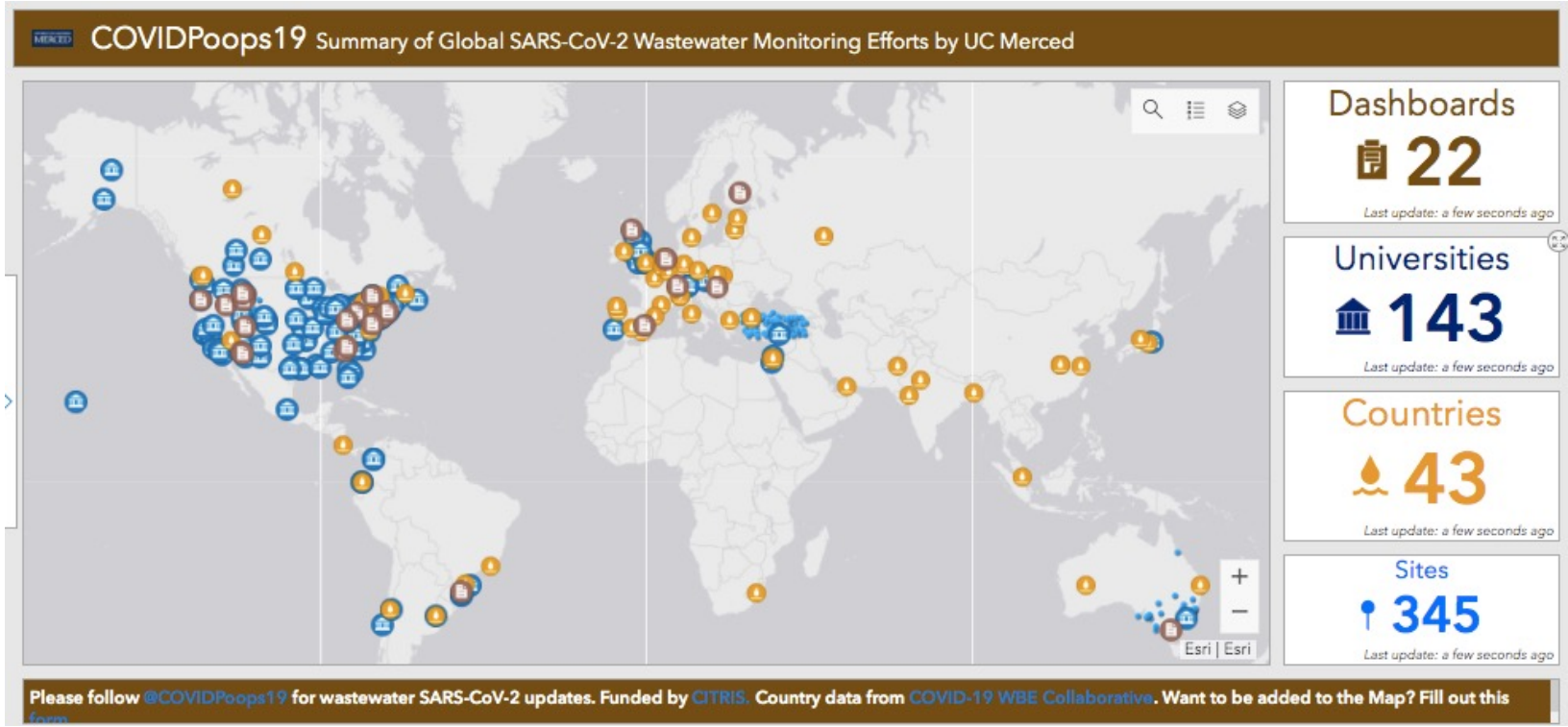
Public health insights

Data is not self-standing

Data needs to be simplified and easy to use

Explanations on variability

Timely



https://www.covid19wbec.org/

Working Paper **Communication** *Version 2* **This version is not peer-reviewed**

Sars-Cov-2 Wastewater Surveillance for Public Health Action: Connecting Perspectives From Wastewater Researchers and Public Health Officials During a Global Pandemic

Jill McClary-Gutierrez , Mia Mattioli , Perrine Marcenac , Andrea Silverman , Alexandria Boehm , Kyle Bibby , Michael Balliet , Francis de los Reyes III , Daniel Gerrity , John Griffith , Patricia Holden , Dimitrios Katehis , Greg Kester , Nathan LaCross , Erin Lipp , Jonathan Meiman , Rachel Noble , Dominique Brossard , Sandra McLellan *

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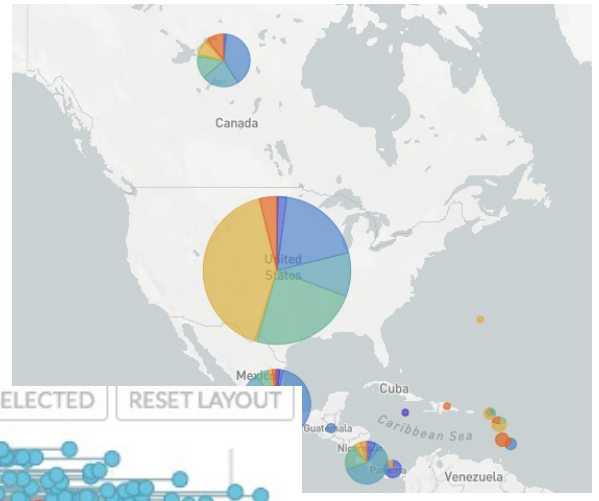
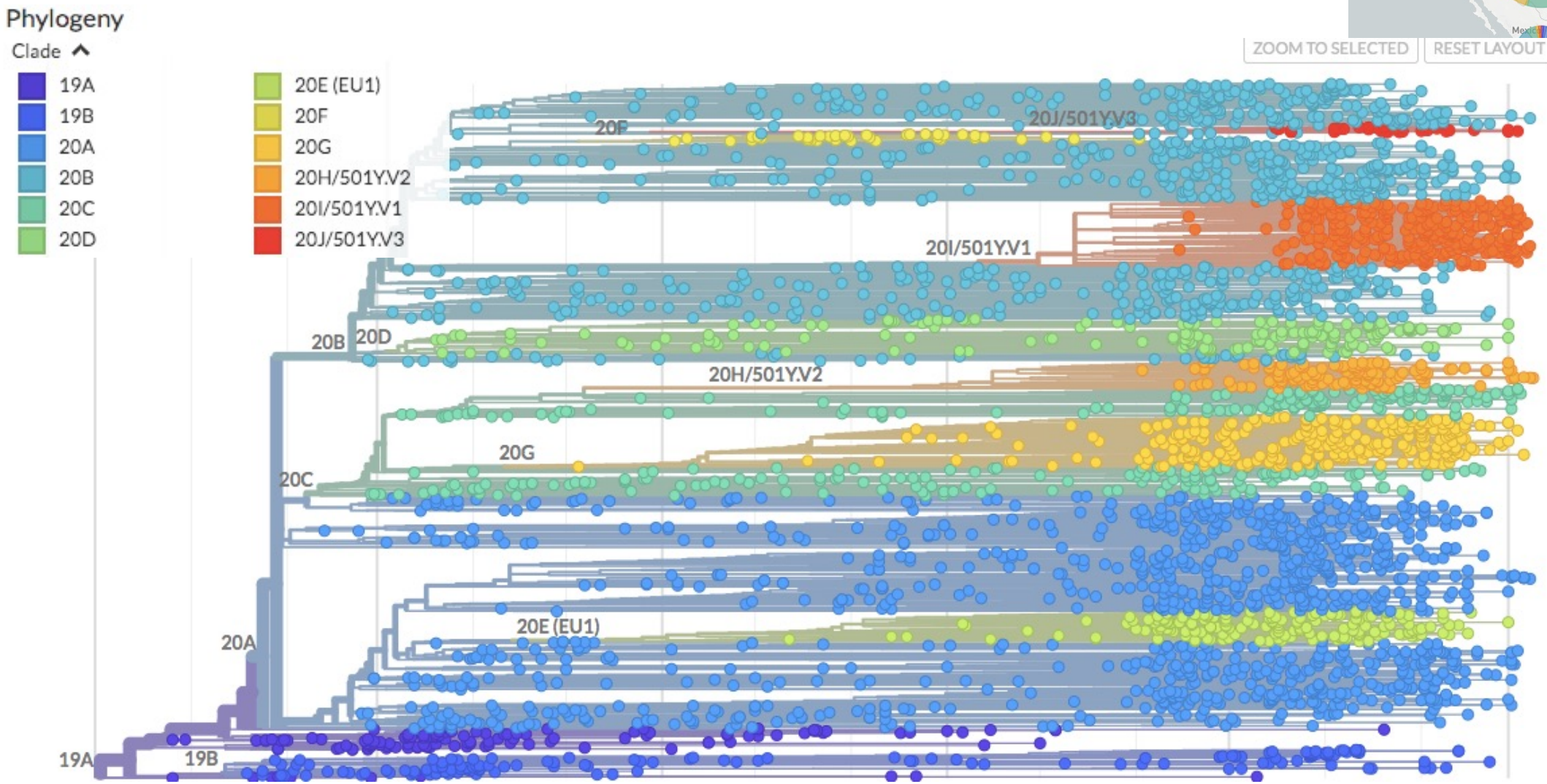
Variants are evolving:

How do we communicate sequencing and variant detection?





nextstrain.org

Acknowledgments

Sloan Project Co-Principal Investigators

Andrea Silverman, New York University
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Research and public health Experts Panel
Public health focus group participants

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Questions?

Project website

sites/uwm.edu/coses