Assessment of the COVID19 Virus in Wastewater

Joan B. Rose

517-432-4412

rosejo@msu.edu

MICHIGAN STATE UNIVERSITY

Monitoring Wastewater for COVID

- This approach provides a leading indicator of COVID-19 cases and outbreaks, as SARS-CoV-2 is released in the feces of both symptomatic and asymptomatic individuals at an early stage of infection, and modern sewer systems efficiently collect wastewater from entire cities into centralized treatment facilities.

- Early Warning, addressing spread and

- Assessment of interventions

  – Detecting disease: Assist with Surveillance Testing and Identification and isolation

  – Reducing new cases: Physical distancing and airflow, personal protection and hygiene, closures and travel restrictions

  – Limiting mortality: Vaccines and therapies and Health-system preparedness Protecting vulnerable groups and settings

  – Tailoring interventions: For Universities

https://www.bridgemi.com/michigan-coronavirus-dashboard-cases-deaths-and-maps
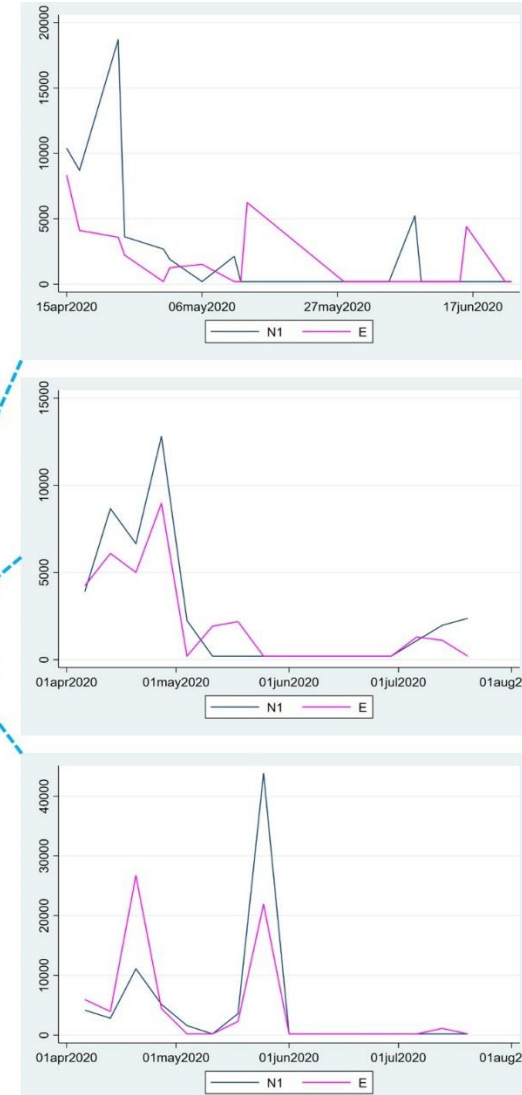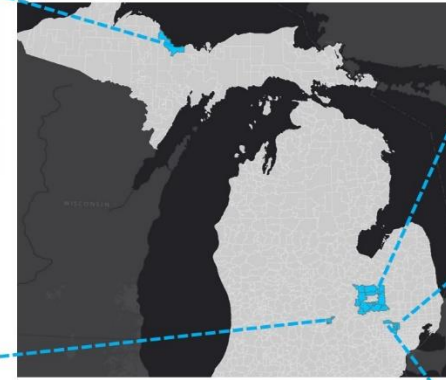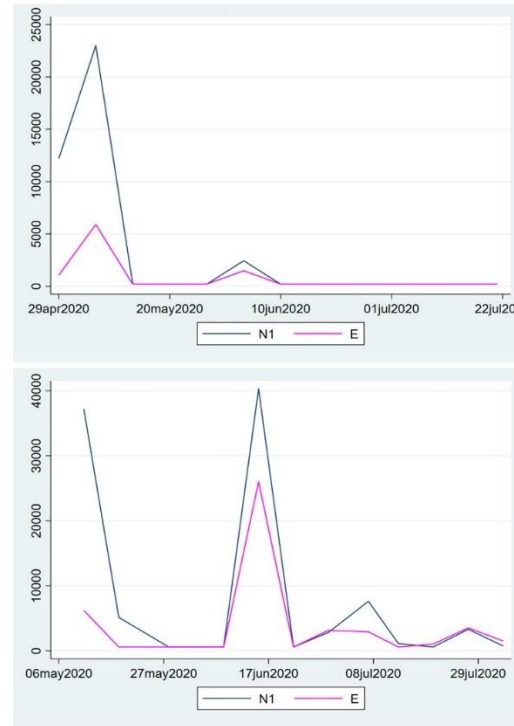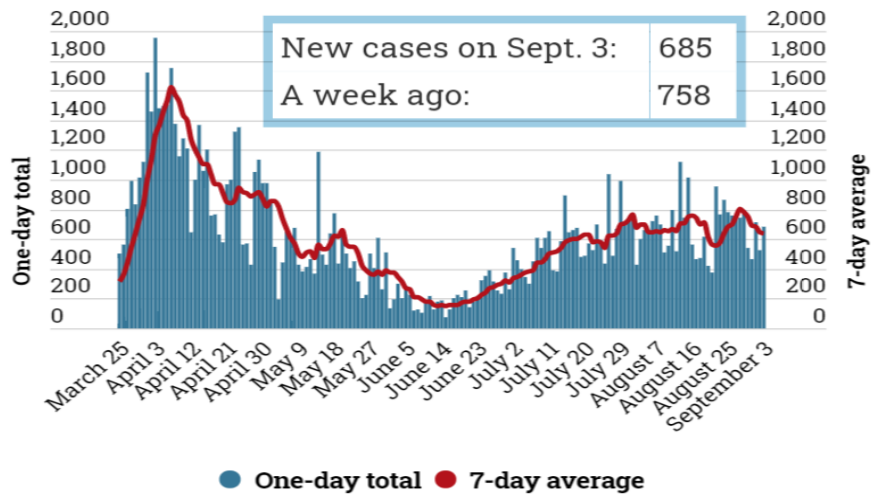
MSU Sanitary Sewer SARS-CoV-2 N1 and E Gene Results

June 12-20
East Lansing Bar
Outbreak Event

June 23
Outbreak
Identified

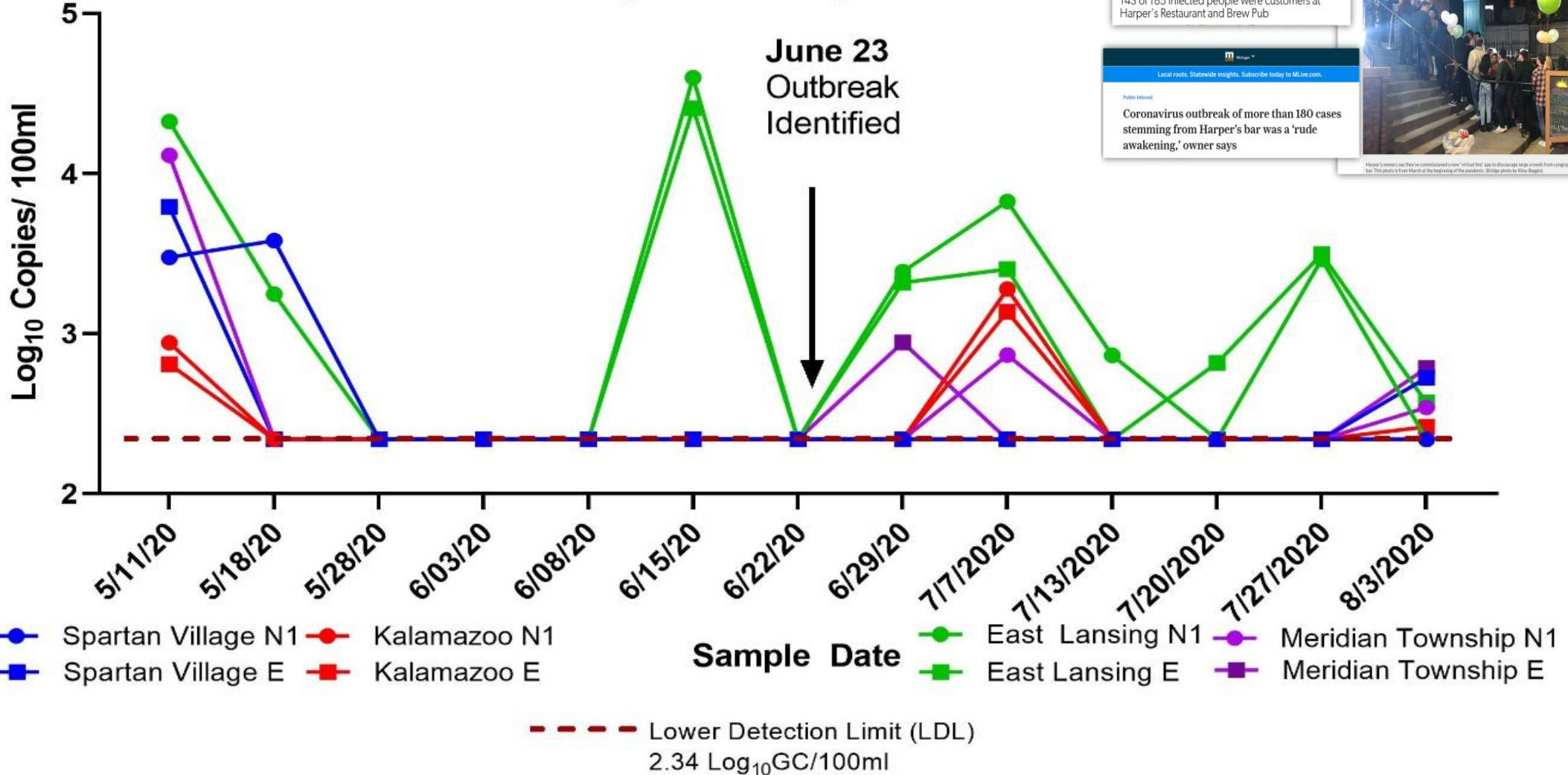**Bridge** Michigan's nonpartisan, nonprofit news source

185 coronavirus (COVID-19) cases now linked to outbreak at East Lansing bar
143 of 185 infected people were customers at Harper's Restaurant and Brew Pub

Michigan Government
Anatomy of a super spreader: Harper's outbreak a caution for college bars

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Public Interest
Coronavirus outbreak of more than 180 cases stemming from Harper's bar was a 'rude awakening,' owner says

Log$_{10}$ Copies/ 100ml

Sample Date

5/11/20 · 5/18/20 · 5/28/20 · 6/03/20 · 6/08/20 · 6/15/20 · 6/22/20 · 6/29/20 · 7/7/2020 · 7/13/2020 · 7/20/2020 · 7/27/2020 · 8/3/2020

- Spartan Village N1
- Spartan Village E
- Kalamazoo N1
- Kalamazoo E
- East Lansing N1
- East Lansing E
- Meridian Township N1
- Meridian Township E

- - - Lower Detection Limit (LDL)
2.34 Log$_{10}$GC/100ml

State of Michigan Wastewater Program
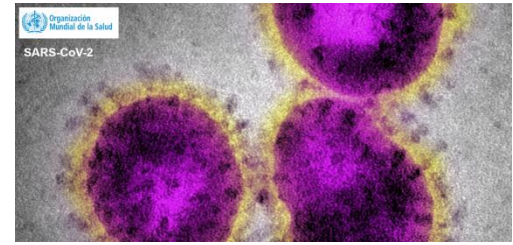
- Establishing 18 advanced laboratories across the State, instrumentation, supplies and training. Dr. Shannon Briggs EGLE and Dr. Erin Dreelin MSU.

- Will begin analyzing the data on the study of the virus in the wastewater from 60 communities;   Calibrate the virus to cases.

- Explore how to use this for public health interventions

Thank You!