



**Aaron Bivins**

University of Notre Dame

*Talk title:*

**Wastewater surveillance for  
COVID-19 in a vaccinated world**



**Anna Székely**

Swedish University of  
Agricultural Sciences (SLU)

*Talk title:*

**Experiences and challenges of  
Swedish wastewater measurements:  
from research project to national  
monitoring**

**Wednesday, October 27, 2021  
At 15:15-16:45, Online via Zoom**

**Aaron Bivins** is a public health engineer leading research at the intersection of microbiology, civil engineering systems, and human health. He seeks to characterize interactions between humans and pathogens mediated by water of all kinds – drinking, surface, ground, waste, and reuse. Aaron has led the development of robust and sensitive methods for detecting and quantifying SARS-CoV-2 RNA in wastewater and has contributed to WBE efforts throughout the world.

**Anna Székely** as an environmental microbiologist has spent almost two decades studying the diversity and ecology of viruses and microbes in diverse aquatic habitats ranging from pristine freshwater springs to wastewater. Throughout her career Anna has aimed to improve the molecular tool set used in aquatic microbiology. Her experience in aquatic virology and her passion for method development has allowed Anna to become a leading contributor to the wastewater-based pandemic surveillance in Sweden.

## Abstract Aaron Bivins

### *Wastewater surveillance for COVID-19 in a vaccinated world*

Wastewater surveillance of SARS-CoV-2 RNA has proven to be an effective means of monitoring COVID-19 trends in communities alongside traditional clinical testing. The rollout of vaccines against COVID-19 along with the concurrent emergence of variants of concern makes the future usefulness of wastewater surveillance for COVID-19 uncertain. Our ongoing application of wastewater surveillance at the University of Notre Dame during a mass vaccination campaign and following the requirement of vaccination for all students, faculty, and staff may shed light on the use case in such a scenario. Our results to date indicate even after populations are highly vaccinated, wastewater surveillance still demonstrates strong potential for managing COVID-19.

## Abstract Anna Székely

### *Experiences and challenges of Swedish wastewater measurements: from research project to national monitoring*

In Sweden the analysis of SARS-CoV-2 virus in wastewater was initiated by independent research groups. The virus content of the sewage measured by these groups showed good correlation with the development of cases and their regular monitoring work was able to predict both the second and third wave of the pandemic in various cities. Through the monitoring work diverse challenges were overcome such as handling the variance in wastewater quality due to the variable weather and large geographic distances of the country, optimization of long-term storage conditions and comparison of fresh and archived samples, and sensitivity improvements to provide optimal surveillance of even small outbreaks in the post-vaccination world. Their collaboration led to the establishment of a capability that today provides surveillance of more than quarter of the population of the country and has embarked on becoming a broad spectrum center of environmental epidemiology.