

## The role of Shared Resources in facilitating human and environmental surveillance for SARS-CoV-2

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The Sylvester Comprehensive Cancer Center Shared Resources, working closely with other shared resources at the University of Miami (UM), helped establish and provide coordinated support for a multi-institutional study on environmental monitoring of SARS-CoV-2, the virus that causes COVID-19 disease, including surface, air, and wastewater-based sampling. This project provides a case study of how a diverse array of shared resources can work together to facilitate human and environmental surveillance for SARS-CoV-2. The study is a collaborative effort between researchers at UM and Weill Cornell Medicine. The shared resources involved in this project include an array of Sylvester Shared Resources, including the Behavioral and Community Based Research Shared Resource (BCSR), Biospecimen Shared Resource (BSSR), and Onco-Genomics Shared Resource (OGSR), along with the Miami Clinical and Translational Science Institute (CTSI) Biostatistics Collaboration and Consulting Core (BCCC), and the Miami Center for AIDS Research (CFAR) Laboratory Sciences Core. UM deployed an extensive human surveillance testing, tracking and tracing system to monitor students, faculty, and staff. This study extended these efforts to encompass wastewater surveillance of SARS-CoV-2 from buildings on all the UM campuses, the city of Miami and surrounding county, public schools in the county, and UM-affiliated hospitals. The goals of this study are to generate, optimize, standardize, and compare SARS-CoV-2 human and wastewater surveillance with various sampling, processing, detection, and analysis techniques. The environmental viral surveillance data is integrated with community and hospital COVID-19 disease prevalence, with the aim of developing predictive models of local and regional level spread of the disease. The results from this effort are informing public health strategies on local and community levels and may serve as a model more broadly for existing and emerging pathogens. We present here lessons learned, current results, and future directions, with a focus on the role and impact of the shared resources.