

SE&T Colloquium Series

Fall 2022

From sewers to beaches: using molecular methods to measure pathogen levels in our community

For over a decade our lab, manned by SVSU undergraduate students, has been using rapid DNA testing to determine whether beaches in the Saginaw Bay Watershed should be closed due to fecal contamination. This method, which provides results in less than 4 hours after sampling, is a clear improvement over the historically used overnight culture test. Our studies eventually extended into microbial source tracking (MST), which allows us to determine when contamination is due to human, animal, or bird sources. Because of our expertise and capabilities, we were called upon by EGLE at the start of the pandemic to adapt the methods for quantification of SARS-CoV2 RNA in wastewater. Because the virus is shed in the feces of those infected prior to symptoms surfacing and even in asymptomatic individuals, the results provide an accurate representation of community virus levels. We can now even determine when variants have surfaced. This testing has been used for the past 2.5 years at many sites on SVSU's campus, on samples collected from wastewater treatment plants throughout the Great Lakes Bay Region, and at long-term care facilities, schools, and jails. All of our work on beach and sewage monitoring has been in close collaboration with a network consisting of Michigan universities, EGLE, MDHHS, and the USEPA as well as local health departments, with over \$3 million in funding provided by various government agencies.



Dr. Tami Sivy Department of Chemistry

Dr. Sivy is a Professor of Chemistry at Saginaw Valley State University. She earned a B.S. in biochemistry from Calvin College and a Ph.D. in chemistry from the University of Colorado-Boulder, before completing a postdoctoral appointment at Portland State University. At SVSU she has earned both the Landee Award for Teaching Excellence (2015) and the Warrick Award for Excellence in Research (2022). Among many other accomplishments, Dr. Sivy has been awarded the Michigan Distinguished Professor of the Year award from the Michigan Association of State Universities (2021).

WHEN

Tuesday, October 11
4:00 – 5:00 PM

WHERE

Pioneer 240

Refreshments will be served.

FOR MORE INFO
or to propose a presentation:

svsu.edu/set/setcolloquiumseries



SV
SU **SAGINAW VALLEY**
STATE UNIVERSITY

COLLEGE OF SCIENCE, ENGINEERING & TECHNOLOGY