OCEESA

Webinar for Overseas Chinese Environmental Engineers & Scientists Association

海外華人環境保護學會環境議題網上論壇(一)

Key Environmental Issue Webinar
Section 1
September 20th, 2020, 6:00-7:30 PM PDT
September 21st, 2020, 9:00-10:30 AM CST

SARS-CoV-2 in Sewage: A Marker for COVID-19 Epidemic and the Exposure Risk in Wastewater Treatment Plants

SARS-CoV-2, the virus causes COVID-19, has been frequently reported in COVID-19 patients' feces and recently found in human sewage from the epicenters of the COVID-19 outbreak. The detection and quantification of SARS-CoV-2 in human sewage could serve as a marker of the epidemic across municipalities and estimate population prevalence without individual testing. Genome sequences of SARS-CoV-2 recovered from sewage could also shed light on the origin and evolution of the virus in the community. A sewage sampling program was carried out in Southern California. To estimate the risk of exposure to SARS-CoV-2 through inhalation of aerosols generated from wastewater treatment processes, we carried out a quantitative microbial risk assessment (QMRA) to estimate the illness risk of wastewater treatment plant (WWTP) personnel. The daily and monthly illness probability of SARS-CoV-2 was then calculated. This presentation will share the research outcomes and offer recommendations for wastewater treatment industry.

Prof. Sunny JIANG

Professor and the Chair of the Department of Civil and Environmental Engineering at University of California, Irvine

Dr. Sunny Jiang is a professor and the Chair of the Department of Civil and Environmental Engineering at University of California, Irvine. Her research focuses on microbiological water quality, engineered and natural water treatment technologies. Her group is one of the pioneers in applying molecular biotechnology for rapid human pathogens detection in the environment. Dr. Jiang served on U.S. National Academies' Water Reuse committee to guide the nation on water reuse decision and contributed her expertise on WHO committee for Desalination. Locally she served as on advisory committee for the San Diego Indirect Water Reuse project. Current research projects in her group include low-energy water treatment technologies for pathogen removal, membrane technologies for reclamation of human wastewater and ocean desalination, quantitative microbial risk assessment, and sensing technologies for water quality assurance.

Minnesota (USA) Drinking Water Research and Related Issues (COVID 19)

MDH is actively working with Minnesota's public water systems to help them implement their contingency plans that keep their systems up and running during emergencies. The Drinking Water Protection Program protects public health by ensuring a safe and adequate supply of drinking water at all public water systems, which are those that serve water to the public. This includes municipalities manufactured housing developments, businesses, schools and other facilities that serve water to more than 25 people on a regular basis. This presentation will share the US Perspective of safe drinking water and the COVID 19 related issues.

Ms. Lih-in WANG Rezania

Project Manager, Principal Engineer, Administrative Unit, Drinking Water Protection, Minnesota Department of Health

Mrs. Lih-in Wang Rezania is a principal public health engineer with the Minnesota Department of Health, Drinking Water Protection Section, best known for her works in corrosion control treatment, innovated treatment technology evaluation, adaptation polices, and simultaneous compliance strategies. Her areas of specialties include rule implementation, water chemistry, water quality, processes optimization, alternative technology evaluation, simultaneous compliance, and recently, project management. She helps ensure that public water suppliers are meeting safe drinking water standards, with a previous focus on reducing lead in drinking water and Minnesota communities that use treated surface water as their primary source of drinking water. Her recent focus is on projects relating to data management and technological updates.