

NERI Public Lecture on The Ecology of Water Quality and Health by Professor Joan Rose || 8 Jan

3 Jan 2025 || TO NUS Community

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Grab the unique opportunity to join this public lecture by **Stockholm Water Prize Laureate** Professor Joan Rose at UHall Auditorium next Wednesday (8 Jan)! Professor Rose is in Singapore as a speaker of Global Young Scientists Summit (GYSS) which is presented by the National Research Foundation, Singapore.

Register [here](#) for the lecture!
For queries, email Joceleen from NERI at erijcjr@nus.edu.sg.

You can also catch other GYSS speakers who will be speaking at NUS-hosted events on 8 and 10 Jan. Visit [here](#) for more info!



Speaker: Professor Joan Rose
Homer Nowlin Chair in Water Research;
Director of the Water Alliance, Michigan State University



Scan here to register

Public Lecture: The Ecology of Water Quality and Health



8 Jan 2025, 3.00 p.m. – 4.00 p.m.
(Registration starts at 2.30 p.m.;
Light refreshment will be served)



National University of Singapore (NUS),
UHall Auditorium Level 2, University Hall Building,
21 Lower Kent Ridge Rd, Singapore 119077

Abstract:

In the last 60 years, there has been a great acceleration in population growth (both humans and animals), land use change, use of fertilisers, and water. This has led us into the Anthropocene where continued water quality degradation, as demonstrated by increased eutrophication and faecal contamination associated with microbial hazards and antibiotic resistance, is a global phenomenon. This is all exacerbated by climate change. Meeting drinking water, sanitation, and hygiene targets by 2030 will require a new and accelerated approach. Water security and food security are intricately linked, and global stresses on water have influenced the health of the planet. Major global land use changes include the dramatic decrease in wetlands and increase in both animal and human faeces and wastewater, which have led to unprecedented water pollution. Simultaneously, water use (from both surface waters and ground waters) has exponentially increased. This pollution has increased waterborne disease risks. New tools, including Polymerase Chain Reaction (PCR) technology and genetic faecal pollution diagnostics, have allowed for enhanced global freshwater and wastewater surveillance, including identifying COVID-19 and conducting pathogen risk assessment. In the recent decade, researchers studying water quality have been focused on using these new modern tools to address microbial source tracking targets, pathogens and water-borne diseases. The One Water framework includes all waterways, storm waters, ground water, surface waters, drinking waters and wastewaters and the linkages between them. To bridge the One Water and One Health concepts, there is a need to utilise advanced diagnostics and global pathogen mapping tools and to focus on financing and policies that will prioritise wastewater treatment, resource recovery, management, and reuse. The work to advance this concept in the Great Lakes Transboundary waters will be presented.

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