Seminar Series 2021 - 2022

Southern Ontario Centre for Atmospheric Aerosol Research

University of Toronto

Bridging the gap between microbiology and chemistry in built environments

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We spend the majority of our time indoors where the built environment has important implications for human health, particularly for those with asthma. Asthma disproportionately impacts low-socioeconomic communities due to poor quality housing associated with mold and moisture exposure. One of the main exposures to mold in housing is through the resuspension of floor dust. Microbes grow in carpet dust at elevated relative humidity conditions and release microbial volatile organic compounds (mVOCs). However, we do not know how the influence of moisture may drive species composition and chemical emissions from microbes in dust and on common building materials. Understanding these interactions in the indoor environment is the next frontier in environmental engineering and has the potential to lead to substantial improvements in public health. Utilizing cutting edge techniques, my work has ranged from collecting dust in carpet from homes in Ohio to analyzing dust particles from the International Space Station. Ultimately, results from my work have demonstrated that microbial growth can be quantitatively modeled in buildings, and for the first time demonstrated interactions between chemicals and microbes in house dust under elevated relative humidity conditions. My future work will link climate change, social justice, and viruses to contribute to healthy indoor environments.

Wednesday, March 2, 2022 3:00 - 4:00PM EST

Microsoft Teams Meeting - Click here to join the meeting

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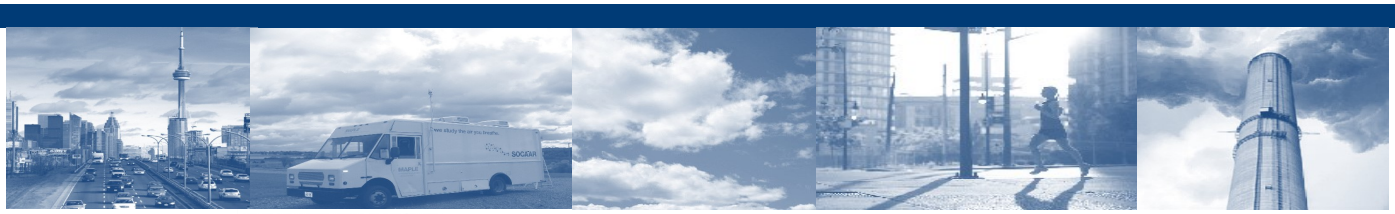
Phone Conference ID: 691 691 226#



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