

SEMINAR SERIES 2023 - 2024

SOUTHERN ONTARIO CENTRE FOR ATMOSPHERIC AEROSOL RESEARCH
UNIVERSITY OF TORONTO

From biological plausibility to predictive models: air pollution, stress, and determinants of toxicity



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When epidemiological studies first showed compelling evidence of associations between ambient levels of fine airborne particles and increased cardiopulmonary mortality, toxicologists were challenged to assess their biological plausibility. It is now generally accepted that air pollution is one of the top risk factors for mortality worldwide. However, associations between exposure to air pollutants and an ever-increasing range of adverse health outcomes – including dementia, depression, obesity, diabetes; all conditions with a substantial and growing population prevalence - continue to raise mechanistic questions. Moreover, the spatial and temporal variability of air pollution poses challenges in identifying key determinants of toxicity that would allow us to move beyond mass-based standards.

This seminar will describe work establishing how the body's stress response system – essential for survival but deleterious when chronically activated – acts as a key mechanism underlying systemic effects of air pollution on health. It will then describe how toxicological tools are being applied to link biological effects to pollutant composition, and hence source. Finally, it will provide examples of how use of more human-relevant toxicological tools, and translation of toxicological findings to the population, may help us to better understand factors underlying susceptibility and identify toxicity determinants.

Wednesday, Jan 17, 2024 3:00PM - 4:00PM EST

Join Us Online: **MS Teams Meeting** - Click [HERE](#) to join
Meeting ID: 233 093 576 326
Passcode: bx4p6H

