

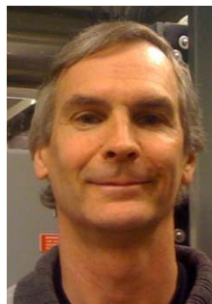
Seminar Series 2012-2013

Southern Ontario Centre for Atmospheric Aerosol Research
University of Toronto

Cardiovascular Health and Urban Air Pollution: The Temporal Evolution of Vascular Responses to Size Fractioned Particulate Matter



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The risk for heart attacks, strokes, and cardiovascular mortality is increased by exposure to gaseous and particulate air pollutants. Brief pollutant exposures at environmentally relevant concentrations can rapidly trigger arterial narrowing and increase blood pressure via changes in the autonomic nervous system. Pollutant induced oxidative stress/ inflammation has also been suggested to acutely impair blood vessel function. Although our understanding of the pollutant mediated mechanism for cardiovascular changes has improved, the specific physical and chemical characteristics of ambient pollutants driving responses remains unclear.

This seminar will examine the effect of human exposure to concentrated real-world urban air particulate in a controlled laboratory on blood flow and the autonomic nervous system. We will discuss the time course of response evolution from real-time physiologic changes during exposure to impairments which manifest post-exposure. These cardiac responses will be further discussed with respect to particle composition including organic carbon, metals, and black carbon. The effect of different urban particulate size fractions (ultrafine, fine, coarse) on the healthy human vasculature will also be presented.

January 9, 2013, 3 - 4 pm

Wallberg Building, 200 College Street, Room 407



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