

THE 22ND ANNUAL HAROLD I. SCHIFF LECTURE

FACULTY OF SCIENCE AND ENGINEERING

Presented by:

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Ozone Layer Depletion and Climate Change: Connections in Science and Policy

Friday, November 2nd, 2012

2:30 p.m.

103 Life Science Building
York University

Abstract: Ozone layer depletion due to man-made emissions, mostly chlorofluorocarbons (CFCs) and some bromine containing chemicals, have been recognized and addressed via the Montreal Protocol (MP). The successful phase out of ozone depleting substances, listed but not defined by the MP, led to the use of other chemicals that do not deplete the ozone layer. Hydrofluorocarbons (HFCs) were one such class of compounds that have found increasing use over the years. The Montreal protocol has been credited with helping the climate change issue by phasing out, CFCs, many of which are also powerful greenhouse gases. Many HFCs are also potent greenhouse gases and their increasing use can offset the benefits gained to date. Lastly, all chemicals that can deplete the ozone layer are not necessarily included in the MP and raise the question regarding inclusion of other chemicals in the protocol. A prime example is nitrous oxide, which we argue is the most important ozone depleting gas that is being emitted today. I will discuss the phase in of HFCs, in place of CFCs, and its impact on climate as well as the role of nitrous oxide as an ozone depleting gas. I will discuss the atmospheric science of these chemical as well as their implications to decision making.

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