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Harold I. Schiff Lecture will look at the 'temporal' trends of smog

What can the photochemical smog in Los Angeles, the subject of research and control efforts for five decades, tell scientists regarding the temporal trends of ozone and other pollutant concentrations? That is one of the questions David Parrish, a researcher at the National Oceanic & Atmospheric Administration (NOAA) in the United States, will discuss when he delivers the 19th annual Harold I. Schiff Lecture at York.

"When considering air quality we often limit our thoughts to a particular place at a particular time, usually the present," says Parrish, program lead of Tropospheric Chemical Observations in the Earth System Research Laboratory at the NOAA. "The goal of this talk is to provide a wider temporal and spatial context for our considerations."

This year's Harold I. Schiff Lecture, titled "Air Quality Across Large Temporal and Spatial Scales", will take place Friday, Dec. 4, at 2:30pm in the Senate Chamber, N940 Ross Building, Keele campus.

Right: David Parrish

The progress that Los Angeles has made will be reviewed, and the temporal trends of ozone and other pollutant concentrations there will be compared with those from other metropolitan areas of the world, says Parrish. This review may usefully inform air quality policy decisions in developing cities throughout the globe.

Looking at ozone pollutants on the broadest spatial scale, the data has indicated that background ozone at northern mid-latitudes has increased substantially over the past century, and continues to increase today. Current global chemical transport models, however, have not been able to accurately reproduce that observed trend, indicating scientists still need to get a better understanding of the tropospheric ozone.

In addition, significant amounts of particulate matter observed locally have found their way to other continents. Regionally, this transport of particulate matter between adjacent urban areas or air basins can be quite important. Consequently, as local air quality standards are tightened, long-range and regional transport of background concentrations contribute an increasing fraction of allowable pollutant concentrations for both ozone and particulate matter. And, the background concentration may be increasing, particularly for ozone.

"That means effective control strategies for local air quality must encompass local, regional and hemisphere-wide scales, and consider changing background concentrations as well as changing local emissions," says Parrish.

The focus of the Tropospheric Chemical Observations research group is to provide improved understanding of the atmospheric processes that underlie regional and continental air quality and the influence that these processes have on the radiative forcing of climate, regionally and globally. The goal of the research is to enhance the ability to predict and monitor future changes, leading to improved scientific input for decision-making.

The Harold I. Schiff Lecture series was established in honour of late Professor Emeritus Harold I. Schiff, who was York's founding dean of the Faculty of Science in 1968. Among his numerous achievements are his major contributions to the development of techniques for measuring trace constituents in the upper atmosphere and to the interpretation of the physics and chemistry of the stratosphere.

An educator and scientist in the field of chemistry, Schiff began at York in 1964 and was named a member of York's Founders Society in honour of his contributions to the early development of the University. While at York, Schiff was chair of the Department of Chemistry and director of the Natural Science Program in 1964, dean of the Faculty of Science from 1965 to 1972 and director of the Centre for Atmospheric Chemistry from 1985 to 1989.

The annual Harold I. Schiff Lecture is organized by the [Centre for Atmospheric Chemistry](#) at York. For more information, e-mail cac@yorku.ca.



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