

DEPARTMENT OF CHEMISTRY AND ENVIRONMENTAL SCIENCE
SEMINAR SERIES
FALL 2019

DATE: WEDNESDAY, NOVEMBER 6, 2019

LOCATION: TIERNAN HALL LECTURE 1

TIME: 1:00-2:20PM

GUEST SPEAKER

Dr. Ezra Wood
Department of Chemistry
Drexel University
Philadelphia, PA

TOPIC

“Ozone Photochemistry in San Antonio and Elsewhere”

ABSTRACT

The US air quality standard for the air pollutant ozone (O_3) was recently lowered to 70 parts per billion (ppb). Many cities now find themselves in violation of this AQS, including San Antonio. Since O_3 is photochemically formed and not emitted directly, efforts to reduce ambient O_3 concentrations require knowledge of the underlying non-linear formation chemistry involving volatile organic compounds (VOCs) and nitrogen oxides (NO_x). During May of 2017, our group made measurements of the relevant radical chemistry involving these precursors in San Antonio using our recently-developed “Ethane Chemical Amplifier” peroxy radical sensor. We show that at our measurement sites, ozone formation was limited by the availability of NO_x , suggesting that reductions of NO_x emissions would be the most effective method to reduce O_3 concentrations. We combine these measurements with photochemical air quality models and separate work on quantifying NO_x emissions to assess the future of photochemical smog in San Antonio and Philadelphia.

BIO

Ezra Wood received his BA in chemistry from Rutgers (New Brunswick) in 1997 and his PhD from the University of California at Berkeley in 2004 where his research focused on development of laser-induced fluorescence methods for quantifying nitrogen oxides. From 2005 to 2010 he was a research scientist at Aerodyne Research, from 2010 to 2016 he was a Research Assistant Professor and Lecturer at the University of Massachusetts - Amherst, and since 2016 he has been an associate professor in the department of chemistry at Drexel University in Philadelphia. His research has focused on quantification of pollutant emissions, development of new techniques for quantifying trace pollutants, and field studies of photochemistry

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