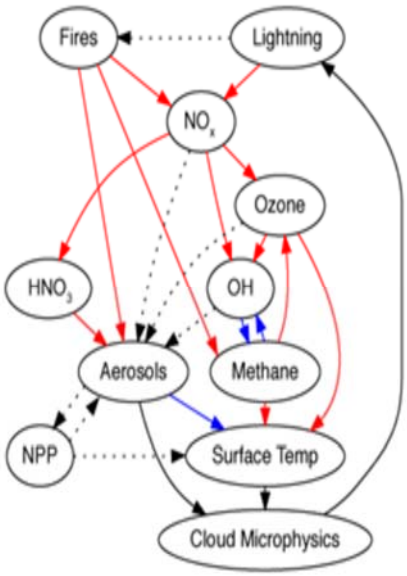
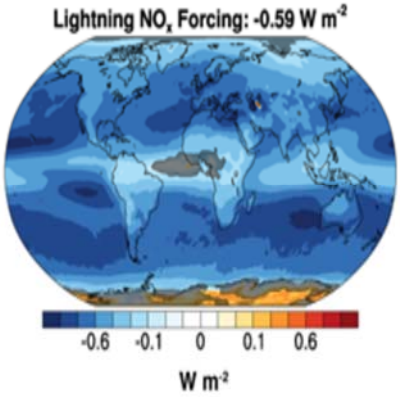
CHEMISTRY COLLOQUIUM

Guest Speaker:
Professor Lee T. Murray
University of Rochester
Department of Earth & Environmental Sciences

Wednesday, March 7th, 12:00pm
Hutchison Hall,
Room 140, Lander Auditorium
University of Rochester
Department of Chemistry





"The coupling of reactive chemistry in the atmosphere with global climate"

Abstract:: The reactive chemistry of the atmosphere has changed substantially since the preindustrial era resulting from human activity and climate change. In turn, climate change has influenced atmospheric composition through perturbations of natural processes, leading to complex feedbacks across a range of spatial and temporal scales. Here, I present some ongoing projects aimed at characterizing the interface between atmospheric chemistry and Earth's climate system in the past, present and future. First, I explore the coupling between the primary atmospheric oxidants OH and ozone with the production of reactive nitrogen oxides (NOx) from lightning, and the subsequent impacts on surface air quality and long-term climate. Second, I explore how uncertainty in reactive nitrogen chemistry and hydrocarbon oxidation mechanisms in the atmosphere contribute to uncertainties in chemistry-climate feedbacks, and ongoing efforts to evaluate these processes in global models through the ongoing NASA Atmospheric Tomography airborne mission. Lastly, I introduce a pilot monitoring network and inverse modeling framework for methane, the most abundant atmospheric hydrocarbon and potent greenhouse gas, that is presently being installed to aid New York State in assessing and meeting its greenhouse-gas reduction goals.

Host: Professor Mike Neidig, email: Michael.Neidig@rochester.edu