Lunch &   Learn

A new Bimonthly seminar series from the Department of Civil and Environmental Engineering (CEE), focusing on convergent research, bringing together Northeastern colleagues and collaborators to think big/bold, explore ideas that build cooperation and foster transformative innovation within CEE and across disciplines beyond CEE.

Steven J. Smith, PhD

Senior Scientist, Pacific Northwest National Laboratory, Joint Global Change Research Institute

Thursday

April 14, 2022

12pm—1pm

[Zoom Meeting]

History (and Future) of the Atmosphere: Emissions Data, Modeling, and Uncertainty

Abstract: Anthropogenic emissions of air pollutants have resulted in local to global-scale changes ranging from altered global radiative energy balances to regional and local impacts on human health and ecosystems. Emissions data for air pollutants and greenhouse gases are necessary inputs to atmospheric models from local to global scales. This talk will focus on the Community Emissions Data System (CEDS) project which aims to produce improved emissions data for global modeling efforts. We will present an overview of the project, methodology, and historical trends, as well as discuss ongoing work including uncertainty estimation and a multi-model sensitivity study (Emissions-MIP) that aims to to determine what aspects of emissions data are most important for global models.

Bio: Steven J Smith is a senior Earth scientist at the Joint Global Change Research Institute in College Park, MD (Pacific Northwest National Laboratory and University of Maryland). Smith's research has focused on long-term socioeconomic scenarios, the interface between socioeconomic systems and the climate system, and interactions between air pollution and climate. Smith is principal investigator of the Community Emissions Data System (CEDS) project that produces global historical air pollutant emissions over the industrial era (1750-present). Smith also works with the Global Change Analysis Model (GCAM), which he and collaborators are currently using to examine multi-sector interactions between the energy system, greenhouse gas, and air-pollutant emissions from global to regional scales.