



PROFESSOR TED RUSSELL



Prof. Armistead (Ted) Russell is the Howard T. Tellepsen Chair and Regents' Professor of Civil and Environmental Engineering at Georgia Tech, where his research is aimed at better understanding the dynamics of air pollutants at urban and regional scales and assessing their impacts on health and the environment to develop approaches to design strategies to effectively improve air quality. He earned his M.S. and Ph.D. degrees in Mechanical Engineering at the California Institute of Technology, conducting his research at Caltech's Environmental Quality Laboratory. His B.S. is from Washington State University. Dr. Russell was a member of EPA's Clean Air Science Advisory Committee (CASAC) and a member of the National Research Council's Board on Environmental Studies and Toxicology, and continues to serve on associated committees. He chaired the CASAC NO_x-SO_x, Secondary NAAQS review panel, the Ambient Air Monitoring Methods Subcommittee and the Council on Clean Air Compliance Analysis' Air Quality Modeling Subcommittee, and was on the Health Effects Institute's Report Review Committee. He was an Associate Editor of the journal Environmental Science and Technology. He currently co-directs the Southeastern Center for Air Pollution and Epidemiology and the NSF Sustainability Research Network "Environmentally Sustainable, Healthy and Livable Cities" project. Prof. Russell has recently received funding from the National Science Foundation, NASA, EPA, the state of Georgia, Phillips 66, Southern Company, the Electric Power Research Institute, CDC, and the Health Effects Institute.

AIR POLLUTION, THE TAJ MAHAL AND HEALTH: IDENTIFYING SOURCE IMPACTS

Exposure to ambient and indoor air pollution is one of the top five risk factors worldwide, and even with the relatively cleaner air in the US, ambient air pollution represents one of the top risks not a direct results of personal behavior. Of particular concern is particulate matter (PM). Health researchers are now trying to assess how this mixture of air pollutants links to various health outcomes and how to tie the mixture components and health outcomes back to sources. This process involves the use of air quality models. As part of an EPA Clean Air Research Center, the Southeastern Center for Air Pollution and Epidemiology (SCAPE), a variety of air quality models are being developed and applied to provide enhanced temporal and spatial resolution of pollutant concentrations for use in epidemiologic analysis. Air quality models that are being further developed and used as part of the center include Bayesian-based ensemble methods and hybrid chemical transport-chemical mass balance modeling. The hybrid method uses knowledge of the emissions, modeling and measurement uncertainties, and can provide spatially and temporally complete pollutant fields. An additional direction is to identify indicators of potential agents more directly impacting health. Using an assay for reactive oxygen species (ROS) activity in PM, and source apportionment methods, we conducted epidemiologic analyses that provide support for the hypothesis that oxidative stress is a potential mechanism for how PM impacts health.

Date: Thursday, November 5, 2015

Place: Goertzen Hall 21(Communication Addition)

Reception: 2:30 p.m.-3:00p.m.

Seminar: 3:00 p.m.-4:00 p.m.