

CAMEE TABLE TALK



WILDLAND FIRES SERIES: PART I

WITH DR. SHAWN URBANSKI



APRIL 16, 2021 @ 12PM

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**“WILDLAND FIRE SMOKE RESEARCH -
EMISSIONS, TRANSPORT, AND IMPACTS.”**

ABSTRACT:

The Missoula Fire Sciences Laboratory was established by the US Forest Service (as the Northern Forest Fire Laboratory) in 1960 to find scientific solutions for better managing the nation's wildland resources and to research ways to improve forest fire prevention and suppression. Today, the Missoula Fire Sciences Laboratory is home to the Forest Service's Fire, Fuel, and Smoke Science (FFS) Program which has a national charter to conduct fundamental and applied research relating to wildland fire processes, terrestrial and atmospheric effects of fire, and ecological adaptations to fire. The FFS Program has six focus areas: Physical fire processes, fuel dynamics, smoke emissions and dispersion, fire ecology, fire and fuel management strategies, and science synthesis and delivery. In this seminar we are pleased to present an overview of recent and current projects of the FFS smoke emissions and dispersion research team. The topics covered will include laboratory and field measurements characterizing the chemical composition of smoke, the evaluation of plume rise and smoke dispersion models, the development of emission inventory methods, and assessing the performance of air quality monitoring instruments in smoke impacted environments.

RESEARCH BIO

Dr. Shawn Urbanski has been a Research Physical Scientist for the Rocky Mountain Research Station, Missoula Fire Sciences Laboratory, since April 2004. Prior to joining the U.S. Forest Service, Shawn was a research associate and postdoctoral fellow at Harvard School of Engineering and Applied Sciences, where he researched ecosystem carbon and energy exchange and participated in the development of high precision, rapid response instruments for the measurement of atmospheric trace gases. Shawn received his Ph.D. degree in Atmospheric Sciences from Georgia Institute of Technology where his doctoral research was a laboratory investigation of the atmospheric oxidation of dimethyl sulfide, a reduced sulfur compound produced by phytoplankton in the ocean's surface waters and emitted to the atmosphere. As a scientist with the Rocky Mountain Research Station, his research tasks are focused on understanding the influence of open biomass burning on the chemistry and composition of the atmosphere. Several aspects of biomass burning are investigated in his research program, including smoke characterization, emission inventories, smoke plume dynamics, and the transport and air quality impact of emissions.

Ongoing studies in these areas include: 1) The evaluation and development of biomass burning emission inventory systems, 2) airborne and ground-based experiments for the validation of smoke dispersion models and atmospheric chemistry transport models, 3) laboratory and field experiments characterizing the gas and aerosol emissions from biomass burning, 4) the development of satellite-based wildfire emission inventories for North America, and 5) the impact of climate change on fire activity, emissions, and air quality in the continental United States.

