

# ES SEMINAR SERIES

12:30-1:30 pm

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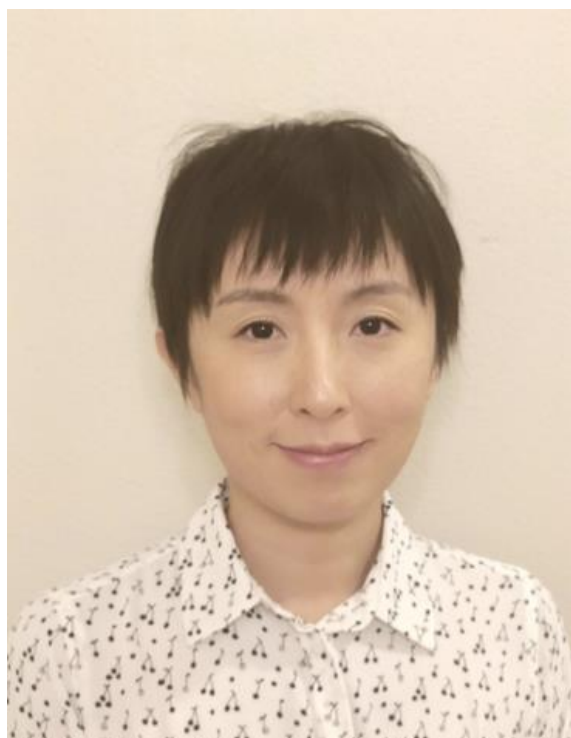
SSB 160 / [Zoom](#)

# Xuan Zhang

*Organic aerosols from biomass burning  
and their climate impact*



**Abstract:** Biomass burning, both prescribed and wildfires, influences air quality, global carbon cycling, ecosystem characteristics and distributions, and Earth's climate system. The extent of biomass burning has greatly expanded to all vegetated continents since the preindustrial period and the frequency and severity are predicted to continuously increase in the future as a result of global warming. To better forecast future wildfire activities and assess their impact on air quality, public health, and global climate, it is imperative to develop consistent parameterizations of biomass burning emissions with reliable uncertainties. Here I will talk about a collaborative project I led at the National Center for Atmospheric Chemistry . The project focused on understanding the processes involved in the daytime and nighttime atmospheric transformation of a suite of organic compounds and intermediates emitted from biomass burning by utilizing an Atmospheric Simulation Chamber equipped with a suite of analytical instruments. I will discuss some recent findings out of this project with respect to the chemical and optical properties, and the formation and evolution mechanisms of organic aerosols and brown carbons that affect the Earth's radiative budget and climate.



**Bio:** Dr. Xuan Zhang was born and raised in China. In 2010, she enrolled in graduate studies at California Institute of Technology and earned her Ph.D. in environmental sciences and engineering in 2015. Prior to UC Merced, she was a research scientist at the National Center for Atmospheric Research.

[Website](#)

**Paper:** [Palm, Brett B., et al. "Quantification of organic aerosol and brown carbon evolution in fresh wildfire plumes." \*Proceedings of the National Academy of Sciences\* 117.47 \(2020\): 29469-29477.](#)