

CPAESS Discovery Seminar



From Regional to Global: The Far-Reaching Impacts of Wildfires on the Atmosphere and Climate

DATE: Wednesday, May 20, 2026

TIME: 11:00 AM – 12:00 PM MT (VIRTUAL)

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Wildfires are becoming increasingly frequent and intense in a warming climate, reversing decades of air quality improvements, as seen in the 2025 Los Angeles Fires and many other record-breaking events worldwide. Crucially, what burns locally doesn't stay local—wildfire smoke often rises, travels, and affects the atmosphere and climate far beyond its source. I will share new insights into the far-reaching impacts of wildfire smoke based on aircraft measurements, satellite observations, and modeling. At the regional scale, I will present first-of-its-kind aircraft sampling of wildfire smoke at ~14.5 km altitude, revealing unexpectedly large aerosol particles that enhance outgoing radiation by ~35%, challenging conventional model assumptions. Next, I will show how high-altitude wildfire smoke perturbs Earth's energy balance and global temperatures, with the 2019/20 Australian wildfires leaving detectable climate fingerprints in the atmosphere comparable to major volcanic eruptions, and causing the strongest stratospheric warming of this century.

SPEAKER

Dr. Yaowei Li

NOAA Climate &
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Dr. Yaowei Li holds a Ph.D. in Environmental Science and Engineering from Harvard University and a B.S. in Environmental Science from Peking University.



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