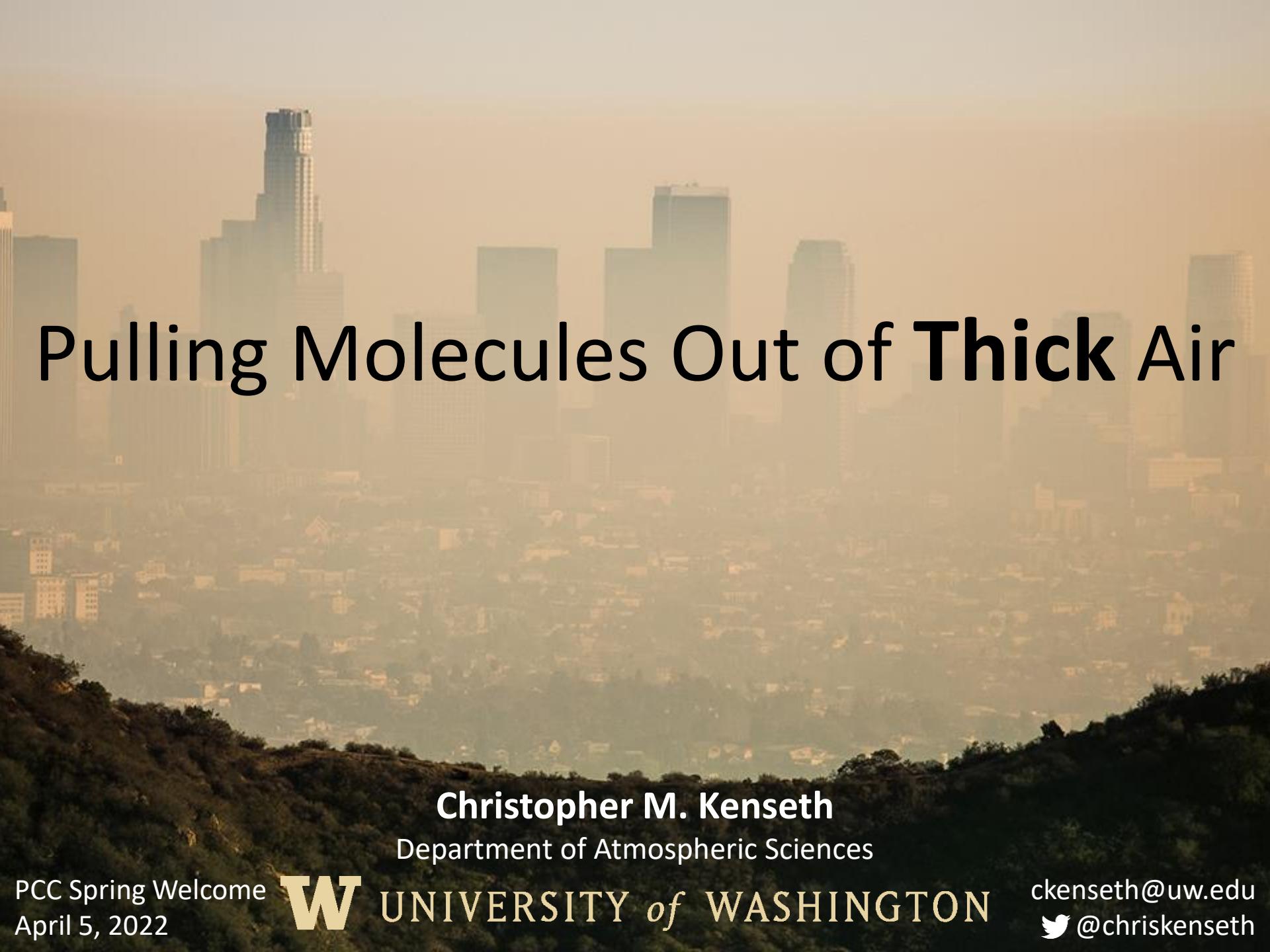


Pulling Molecules Out of Thick Air

A photograph of a city skyline, likely Los Angeles, shrouded in thick, orange-tinted fog or smog. The buildings are visible but lack sharp definition due to the haze. In the foreground, dark, silhouetted hills are visible against the lighter sky.

Christopher M. Kenseth

Department of Atmospheric Sciences

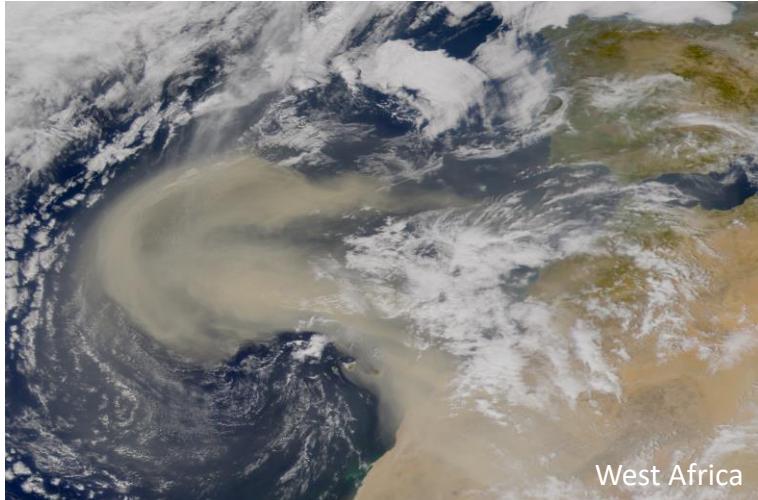
PCC Spring Welcome
April 5, 2022

W UNIVERSITY *of* WASHINGTON

ckenseth@uw.edu
 @chriskenseth

Atmospheric Aerosol

- Fine particulate matter (**PM_{2.5}**): $D_p < 2.5 \mu\text{m}$.



West Africa



Madhya, India



Beijing, China



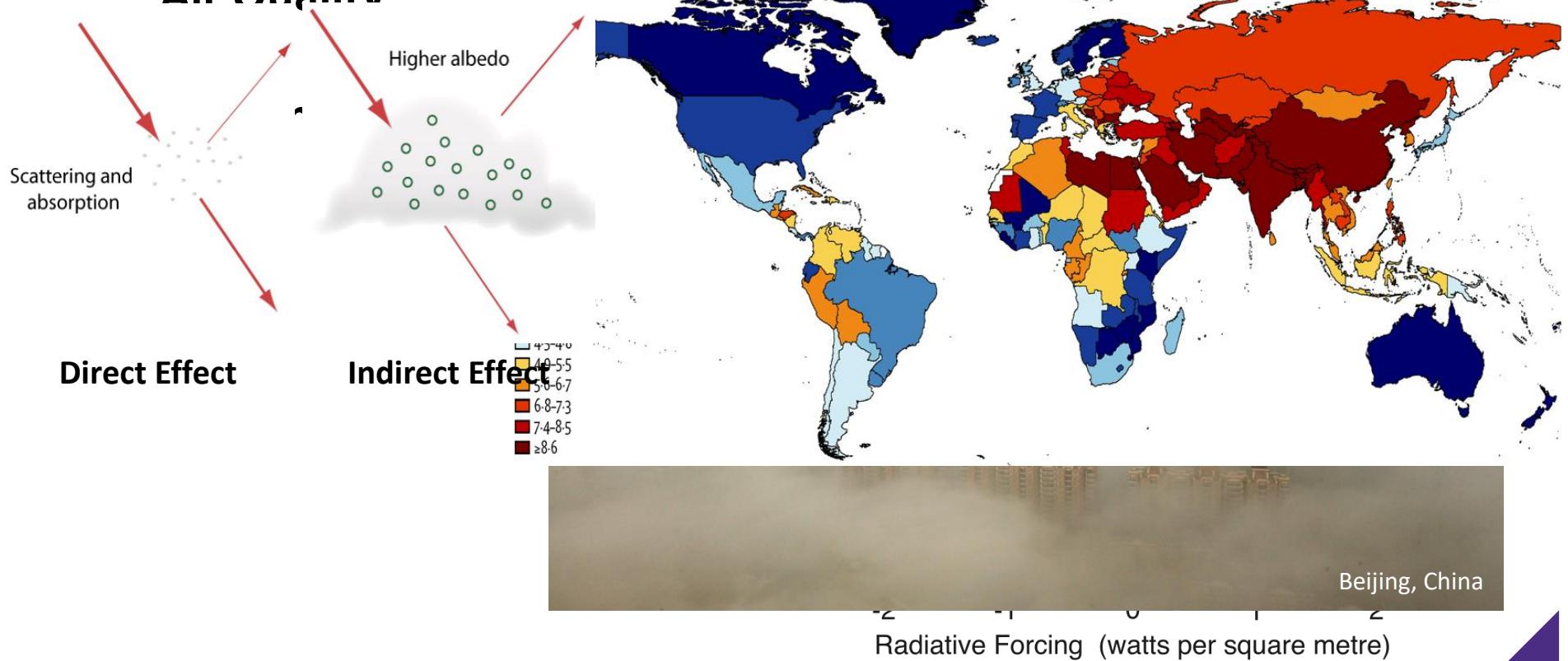
Great Smoky Mountains, NC



Impacts of Atmospheric Aerosol

- Climate

- Air Quality



Formation of Atmospheric Aerosol

- Majority of organic aerosol (OA) is **secondary organic aerosol (SOA)**.

Primary Particulate



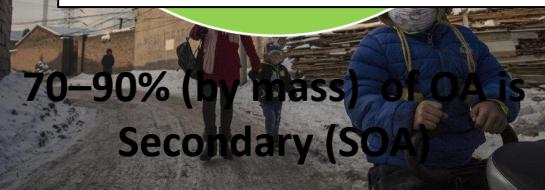
“80 percent of air pollution comes not from chimneys and auto exhaust pipes, but from plants and trees.”

- Ronald Reagan, 1979



“Trees cause more pollution than automobiles do.”

- Ronald Reagan, 1981



ANTHROPOGENIC



NC

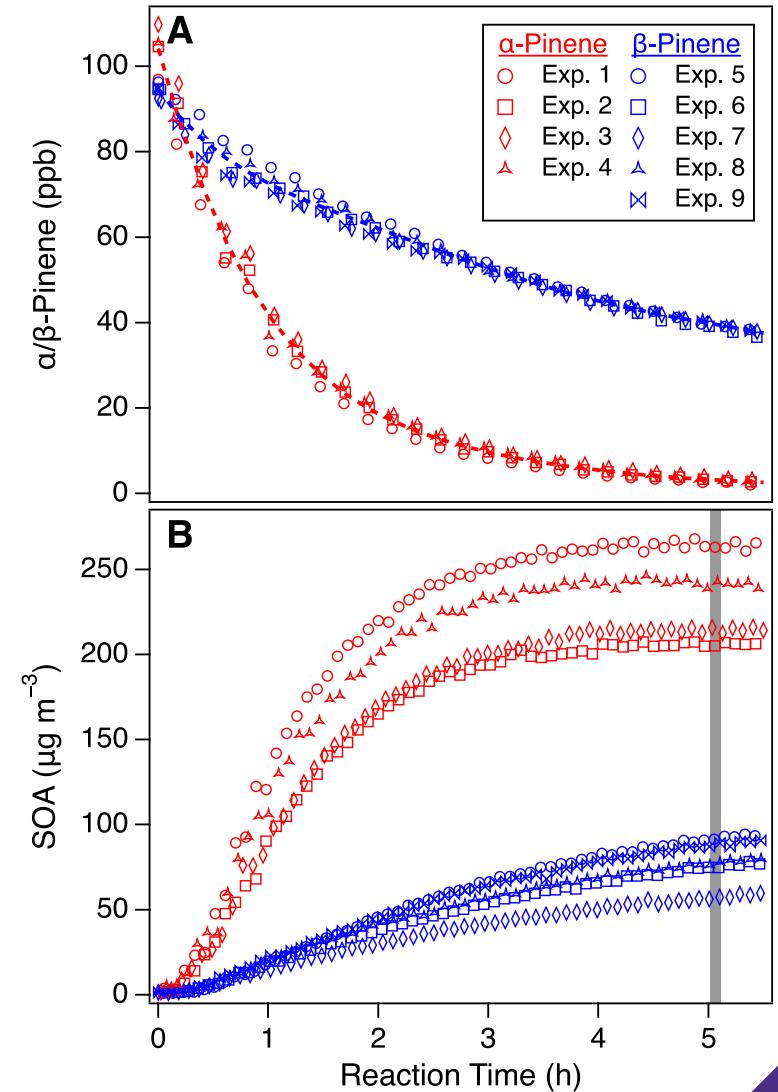
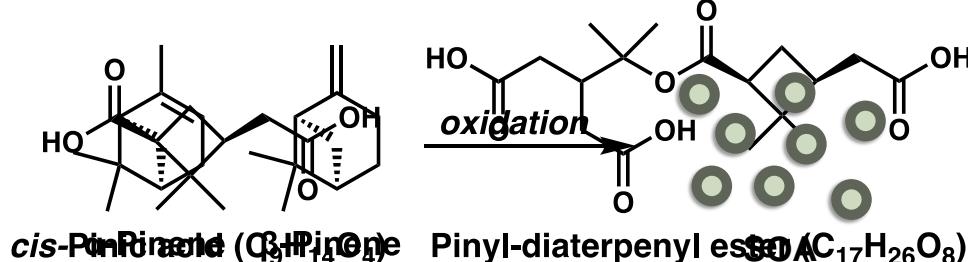
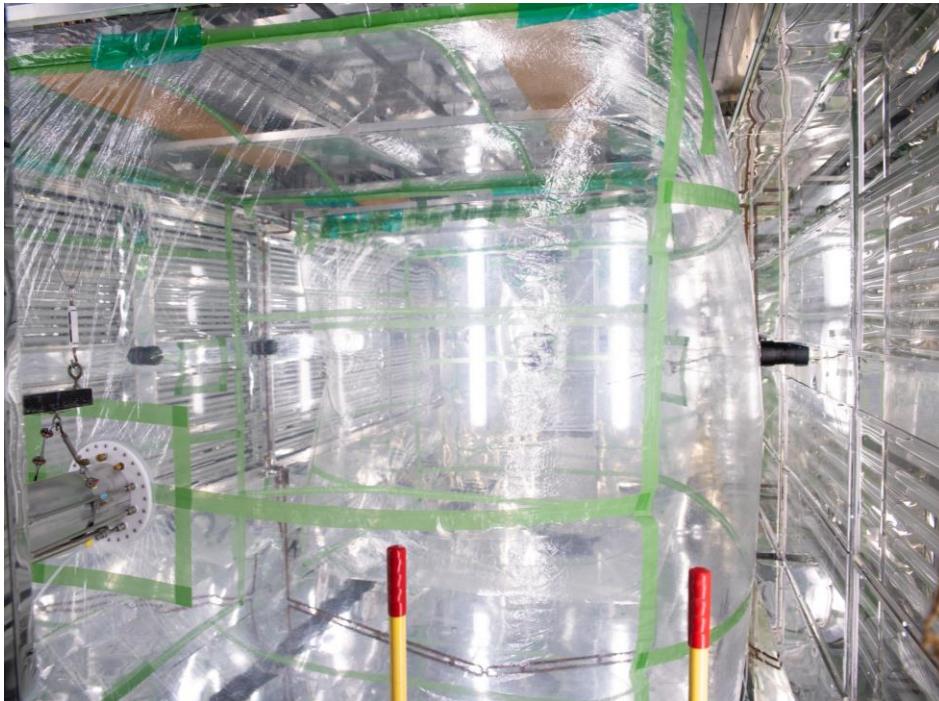


BIOGENIC

- Global nonmethane hydrocarbon **emissions** are ~90% biogenic.

Atmospheric Aerosol Experiments

Teflon Environmental Chambers





Atmospheric Field Campaigns

- UW HR-ToF-CIMS on C-130 aircraft for NSF GOTHAAM.

