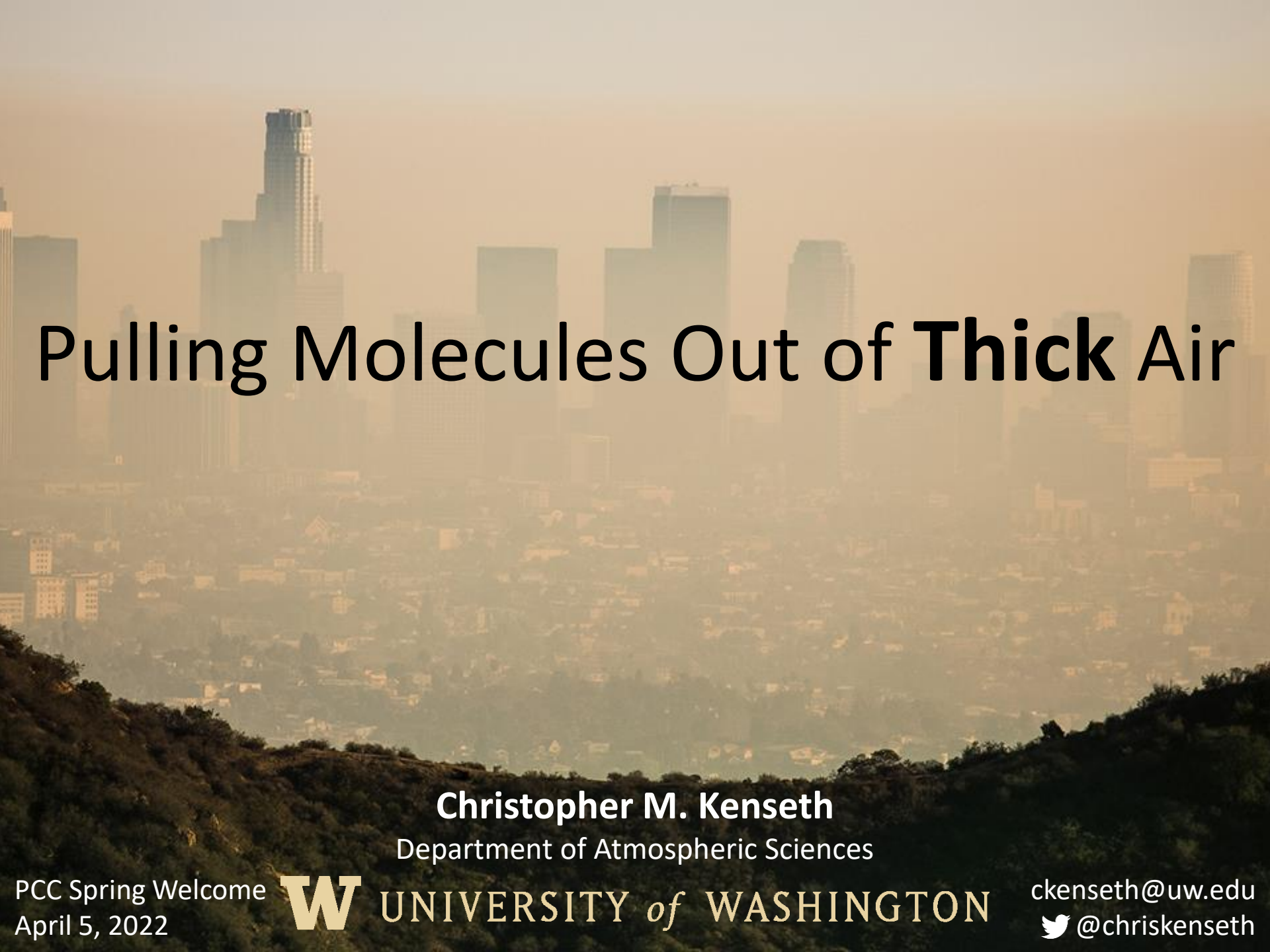




Pulling Molecules Out of **Thick** Air

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PCC Spring Welcome
April 5, 2022



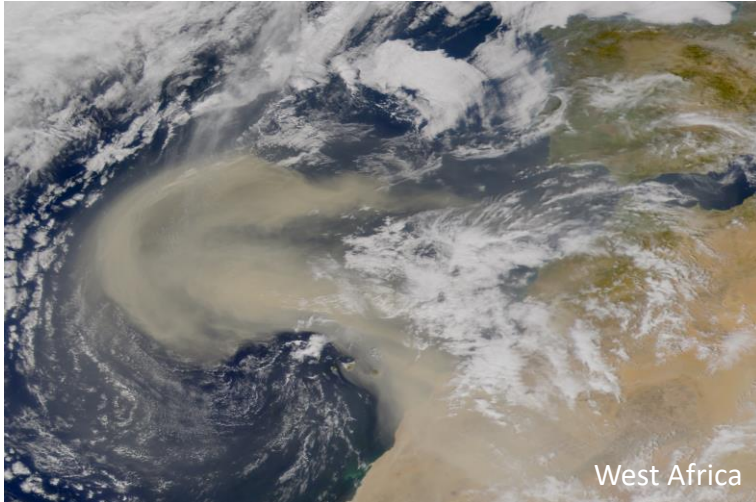
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ckenseth@uw.edu
 @chriskenseth



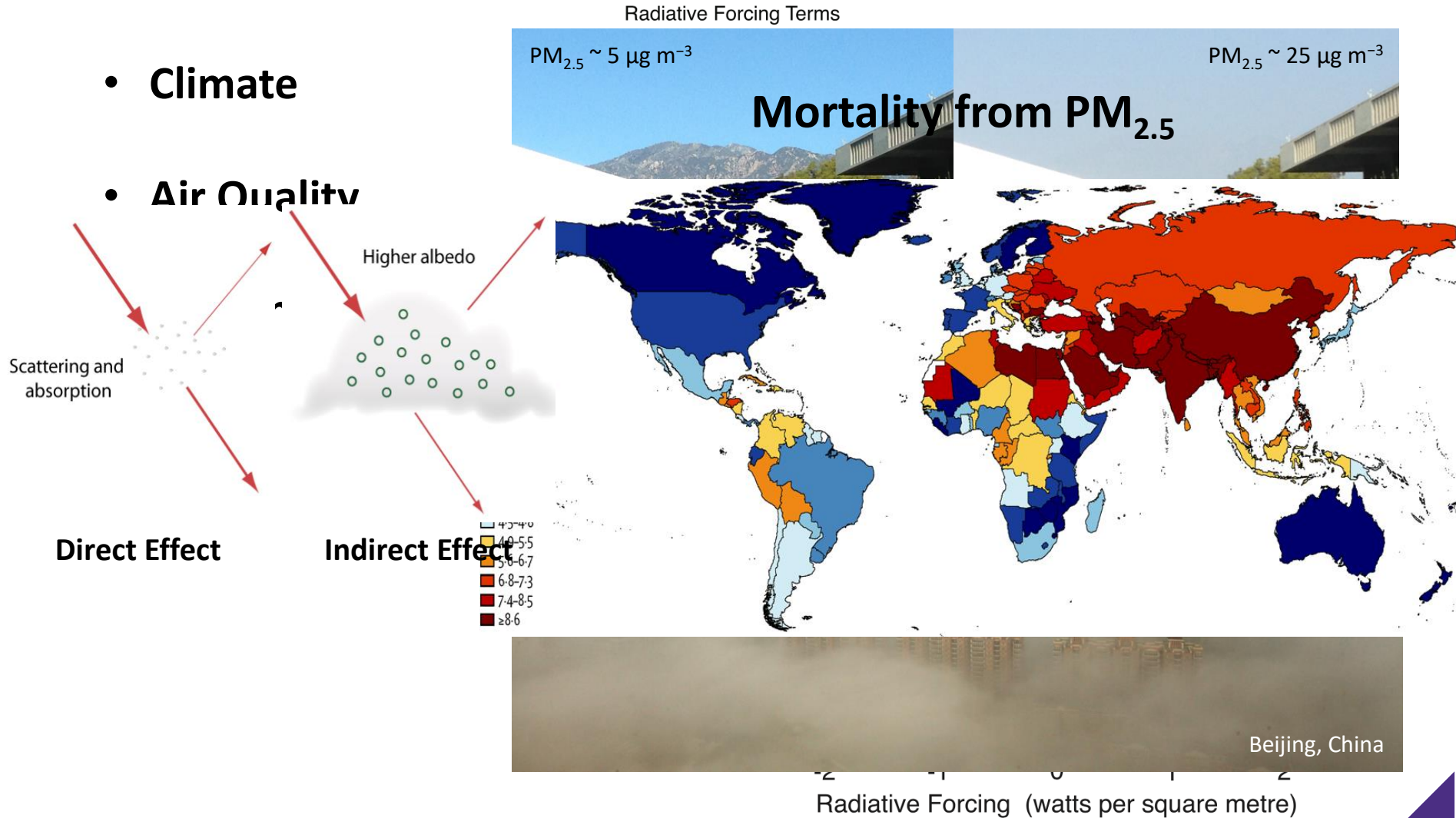
Atmospheric Aerosol

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



Impacts of Atmospheric Aerosol

- Climate
- Air Quality





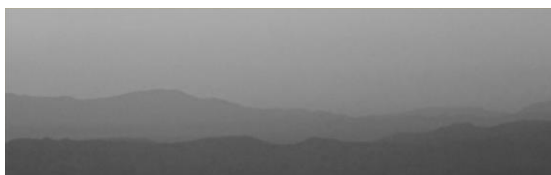
Formation of Atmospheric Aerosol

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

Primary Particulate



Secondary Formation



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

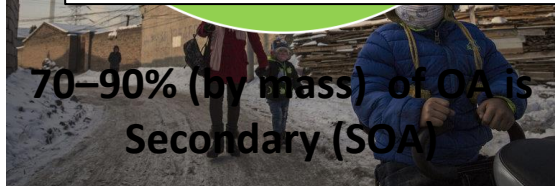
- *Ronald Reagan, 1979*

“Trees cause more pollution than automobiles do.”

- *Ronald Reagan, 1981*



70–90% (by mass) of OA is
Secondary (SOA)

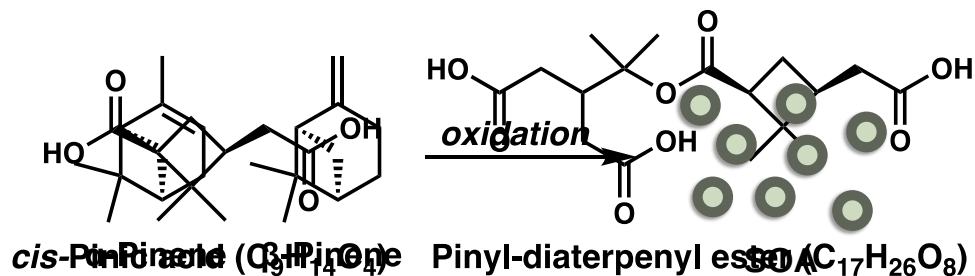


ANTHROPOGENIC



BIOGENIC

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





Atmospheric Field Campaigns

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

