



# “Characterization of PM<sub>2.5</sub> Episodes in the Wintertime San Joaquin Valley using Surface and Aircraft Observations”

Prof. Christopher Cappa  
CARB Research Seminar for Contract # 14-307

William Vance, Ph.D.

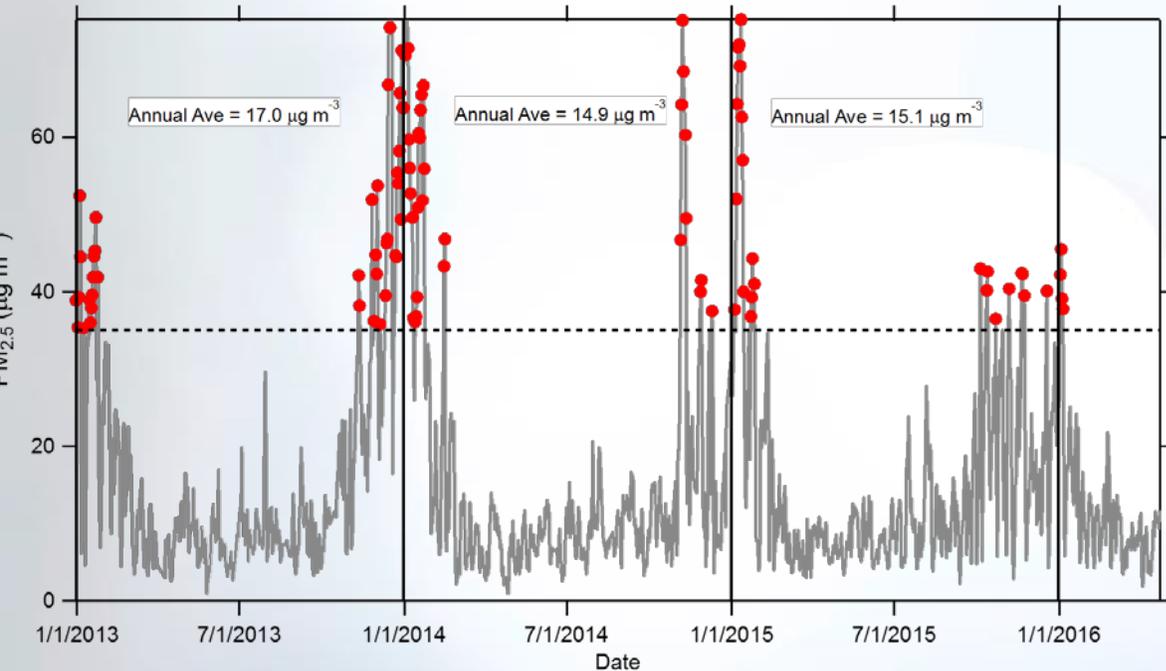
CARB Staff & Research Contract Manager November  
27, 2018

# Announcements

- Additional information about the speaker as well as slides and other materials can be found at this link:  
<https://www.arb.ca.gov/research/seminars/cappa2/cappa.htm>
- For those of you online, questions for the speaker can be sent to [sierrarm@calepa.ca.gov](mailto:sierrarm@calepa.ca.gov)
- For our in-person audience: “housekeeping” items.



# PM<sub>2.5</sub> trends



PM<sub>2.5</sub> concentration measurements from Fresno-Garland site. Dashed line is 24-Hour PM<sub>2.5</sub> Standard.

- ❑ Wintertime particulate matter (PM) air pollution in the SJV often exceeds the US Environmental Protection Agency (EPA) 24-hour standard for PM<sub>2.5</sub> ( $35 \mu\text{g m}^{-3}$ ).
- ❑ Submicron PM is primarily composed of organic aerosol (OA) and ammonium nitrate (AN), with each contributing about equally.
- ❑ This project elucidated the coupling of meteorology with chemistry that contributed to two high PM<sub>2.5</sub> events in the SJV during the winter 2013.
- ❑ Regulatory efforts to comply with particulate matter standards in the SJV require improvements in our knowledge of the factors controlling the ozone formation, transport (horizontally and vertically) and precursor sources.

# Today's Speaker — Dr. Christopher Cappa

- Dr. Cappa is a Professor and Vice Chair of the Civil and Environmental Engineering Department at the University of California, Davis, and is currently a Chancellor's Fellow.
- Dr. Cappa received his Ph.D. from the University of California, Berkeley in Physical Chemistry in 2005.
- The work in Dr. Cappa's group at UC Davis has entailed a mix of laboratory experiments, field measurements and conceptual model development. Research has focused on understanding the formation and properties of organic aerosol particles, interactions between particles and water, and the relationship between composition and the light absorption and extinction properties of atmospheric aerosols.