

# “Co-exposure to UFPM and O<sub>3</sub>: Pulmonary C fiber and platelet activation”

Presented by Fern Tablin, VMD, Ph.D. and Edward Schelegle Ph.D.

University of California, Davis

CARB Research Seminar for Contract 13-311

10:30 A.M., June 18, 2018 – Sierra Hearing Room

Contract managers:

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- Deborah Drechsler (retired)



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# Announcements

- For those of you online. Thank-you for joining us for today's seminar. Questions for the speakers can be sent to [sierrarm@calepa.ca.gov](mailto:sierrarm@calepa.ca.gov)
- Additional information about the speakers as well as slides and other materials can be found at this link: <https://www.arb.ca.gov/research/seminars/tablin/tablin.htm>
- Housekeeping announcement for attendees.

# Project Overview

- **Main question:** What are health effects of the combined exposure of PM and O<sub>3</sub>?
- **Methodology:**
  - Mature hypertensive rats were exposed O<sub>3</sub> and/or ultrafine PM for a six hour period.
  - Cardiophysiology was assessed during exposure and recovery.
  - Analysis of lung, heart, and blood samples.
- **Importance for CARB:**
  - Investigates the combined effects of a multipollutant exposure.
  - Establish biological plausibility for multipollutant health effects.
  - Impact future research directions and standards evaluations.

## Today's Speakers – Primary Investigator

### **Dr. Fern Tablin**

- Bachelor of Arts degree in History, VMD, and PhD in Anatomy from the University of Pennsylvania.
- Currently a Professor of Anatomy, Physiology, and Cell Biology in the School of Veterinary Medicine at UC Davis.
- Expertise in platelet physiology with multiple papers focusing on platelet physiology of domestic animals and animal models in health and disease.

### **Dr. Edward Schelegle**

- Bachelor of Science in Animal Physiology, Master of Arts in Physical Education, and a Ph.D. in Physiology from UC Davis.
- Currently Professor of Physiology and Chair of the Department of Anatomy, Physiology, and Cell Biology in the School of Veterinary Medicine.
- Expertise in how environmental factors affect human health and has multiple publications examining factors that contribute to the exposure-response of ozone in humans.

SUPPLEMENTAL SLIDE

	<b>Tablin #13-311 Co-exposure to UFPM and O<sub>3</sub> : Pulmonary C Fiber and Platelet Activation in Decreased HRV</b>	<b>Kleinman #13-309 Cardiovascular Effects of Multipollutant Exposure: Mechanisms and Interactions</b>
Particulate Matter size and concentration	Flame generated UFPM Approximately 250 µg/m <sup>3</sup>	Concentrated Ambient PM2.5 particles (CAPS) Approximately 125 µg/m <sup>3</sup>
Ozone levels	Approximately 1 ppm (1000 ppb)	Approximately 200 ppb
Exposure periods	Acute - Single 6 hour exposure period	Long-Term -5 hours/day, 4 days/week for 8 weeks
Animal Model	Hypertensive rat model	Atherosclerotic mouse model
Major endpoints investigated	Heart Rate Variability Platelet analysis Histopathology	Heart Rate Variability PM speciation Seasonal / Temperature effects