

# RESEARCH PROPOSALS

*January 26, 2006*

California Environmental Protection Agency



Air Resources Board

# Differences in Inflammatory Responses to Exposures of Concentrated Ambient Particles in Susceptible Volunteers

University of California, Los Angeles  
Professor David Diaz-Sanchez  
\$629,920 (36 months)

**Objective:** Determine how short-term exposure to ambient PM alters inflammation and airway and cardiovascular function in humans.

**Expected Results:** Measures of lung function, inflammatory respiratory responses, and heart rate variability as a result of controlled short-term ambient PM exposures.

# On-Road Measurement of Light-Duty Gasoline and Heavy-Duty Diesel Vehicle Emissions

University of California, Berkeley  
Professor Robert Harley  
\$288,463 (21 months)

**Objective:** Characterize fleet-averaged rates of pollutant emissions from light and heavy-duty vehicles.

**Expected Results:** Effects on real world emission rates from changes in fuel specs, vehicle technology, emission control, and fleet characteristics.

# Process-Based Farm Emission Model for Estimating Volatile Organic Compound Emissions from California Dairies

University of California, Davis  
Professor Ruihong Zhang  
\$299,351 (24 months)

**Objective:** Develop models to predict VOC emissions from individual biological processes and individual sources within dairies.

**Expected Results:** Improved estimates of baseline VOC emissions from dairies and individual processes, and the effects of inputs to the dairy system such as feed, waste handling, or environmental factors.

# Impact of Reactive Halogen Species on the Air Quality in California Coastal Areas

University of California, Los Angeles  
Professor Jochen Stutz  
\$300,000 (36 months)

**Objective:** Conduct field observations of reactive halogen species and their reaction products along the coast in southern California.

**Expected Results:** Improved understanding of coastal halogen chemistry.

# Evaluation of the Proposed European Methodology for Determination of Particle Number Emissions

University of California, Riverside  
Dr. Thomas Durbin and Prof. David Cocker  
\$250,000 (15 months)

**Objective:** Conduct a critical evaluation of the European method and determine its potential in California for PM emission measurement and in-use screening.

**Expected Results:** Data on robustness and representativeness of the European particle number measurement method.

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