

RESEARCH PROPOSALS

November 18, 2004

California Environmental Protection Agency



Air Resources Board

Spatial and Temporal Variability of PM2.5 Composition in California

University of California, San Diego

Dr. Kimberly Prather

\$678,671 (36 months)

Objective: Perform particle characterization as well as measure other criteria pollutants in a number of regions in California impacted by PM2.5 including major cities, agricultural areas, and transport sites.

Expected Results: Ambient particle and gas measurements, source apportionment from different sites, comprehensive database of ambient measurements and sources profiles.

Effects of Ozone Exposure on Cardiovascular Responses in Healthy and Susceptible Humans

University of California, San Francisco

Dr. Karron Power

\$399,032 (42 months)

Objective: Investigate the effect of ozone exposure on heart rate variability, inflammation and coagulability.

Expected Results: Provide a biological basis for epidemiological findings that these pollutants can induce adverse cardiovascular effects.

Effects of Woodsmoke on Cardiopulmonary Responses

University of California, San Francisco

Dr. Colin Solomon

\$399,939 (42 months)

Objective: Determine threshold levels for inducing airway inflammation and heart rate variability, the influence of asthma status caused by woodsmoke exposure, and the biological mechanisms controlling these exposures.

Expected Results: Biological basis for epidemiological findings that woodsmoke can induce cardiopulmonary effects.

Role of Inhaled Particles in the Pathophysiology of Cardiovascular Disease

University of California, Irvine

Dr. Michael Kleinman

\$446,358 (36 months)

Objective: Examine the effects of fine and ultrafine PM exposures on markers of vascular cell inflammation in atherosclerosis-prone mice.

Expected Results: Understanding the roles of oxidative stress and inflammation-associated tissue damage from PM exposures as mechanisms that lead to heart disease.

Particle Phase Peroxides: Concentrations, Sources, and Behavior

University of California, Los Angeles

Dr. Suzanne Paulson

\$109,975 (24 months)

Objective: Categorize PM types, and establish chemical components that contain, affect concentrations, or generate, hydrogen peroxide.

Expected Results: Determine which PM source types yield the greatest amounts of tissue-damaging hydrogen peroxide when placed in aqueous media like lung fluid.

RESEARCH PROPOSALS

November 18, 2004

California Environmental Protection Agency



Air Resources Board