



CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY



1001 I STREET, SACRAMENTO, CALIFORNIA 95814 • P.O. BOX 2815, SACRAMENTO, CALIFORNIA 95812-2815
(916) 323-2514 • (916) 324-0908 FAX • WWW.CALEPA.CA.GOV

LINDA S. ADAMS
SECRETARY FOR
ENVIRONMENTAL PROTECTION

ARNOLD SCHWARZENEGGER
GOVERNOR

November 4, 2008

S. Stanley Young, PhD
Assistant Director of Bioinformatics
National Institute of Statistical Sciences
Post Office Box 14006
Research Triangle Park, North Carolina 27709-4006

Dear Dr. Young:

Thank you for your letter to Governor Schwarzenegger regarding the May 22, 2008, draft report "Methodology for Estimating Premature Deaths Associated with Long-Term Exposures to Fine Airborne Particulate Matter in California" from the California Air Resources Board (CARB). Governor Schwarzenegger asked that I respond to your specific concerns and describe both the qualifications of the authors and the review process for the report.

Regarding the professional background of the authors, the lead author and project coordinator, Hien Tran, holds a doctorate degree in statistics from the University of California at Davis, and he has fourteen years of experience in advanced analysis of complex air quality data sets and methods for quantifying health impacts associated with exposure to air pollution. In 2006, his work on the health benefits of reducing tropospheric ozone levels in California was published in the Journal of Air and Waste Management Association (JAWMA 2006 56:1007-1021). In addition, the contributing authors hold advanced degrees in fields including toxicology, biology, atmospheric chemistry, physical chemistry, and mathematics.

As part of the review process, three scientific advisors have thoroughly reviewed and approved the CARB report. These individuals are well-known epidemiologists in the field of air pollution and public health: Professor Jonathan I. Levy of Harvard University, Professor Clive Arden Pope of Brigham Young University, and Dr. Bart Ostro of the Office of Environmental Health Hazard Assessment. These advisors are highly experienced in analyzing epidemiologic studies on the health effects of air pollution. They use advanced statistical techniques in conducting their own studies and make significant contributions to numerous peer-reviewed journals such as Environmental Health Perspectives, Epidemiology, the Journal of the American Medical Association, the Journal of the Air and Waste Management Association, Lancet, and Toxicology. Professor Levy has published

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more than 30 articles from 2002 to 2008, Professor Pope has published over 50 articles (1983-2007, with several more in review), and Dr. Ostro has published more than 20 articles from 1980 to 2008. In short, they are well-respected by their peers in the scientific community.

The draft report subsequently underwent an external peer review, utilizing California Environmental Protection Agency's (Cal/ EPA) process that ensures a completely independent review of proposed rules and other documents. First, reviewer candidates were independently identified by the University of California at Berkeley, Institute of the Environment, in consultation with University of California (UC) colleagues. Each candidate was required to complete a Conflict of Interest Disclosure form, which was reviewed by the Cal/EPA Project Director for the independent peer review. Candidates were accepted as reviewers only if the disclosure information showed they had no conflict of interest related to the report.

The six reviewers identified by UC Berkeley and selected by the Cal/EPA Project Director to review the proposed methodology in the report are: Dr. Jeff Brook from Environment Canada, Professor Mark D. Eisner of UC San Francisco, Professor Richard C. Flagan of the California Institute of Technology, Professor Alan Hubbard of UC Berkeley, Professor Joel Kaufman of the University of Washington, and Professor Joel Schwartz of Harvard University. Collectively, their expertise is based on research in the areas of chronic obstructive pulmonary disease related to air pollution, statistical analysis of epidemiological data, particle formation and measurements in air, air quality risk management, air pollution and daily mortality associations, and epidemiology. These reviewers evaluated whether CARB staff correctly interpreted the results published in the scientific literature, and whether staff has correctly developed methods for estimating premature deaths associated with public exposure to ambient particulate matter. The peer reviewers provided written comments, which staff addressed and incorporated into the draft report that was released on May 22, 2008, for public comment.

As you can see, this report has benefited from the outstanding qualifications and experience embodied in the authors, the advisors, and the independent peer reviewers. It should be without doubt that the report has made correct use of statistical tools and sound scientific judgment to arrive at the conclusions.

Should you have further questions on this regard, please feel free to contact Bart E. Croes, P.E., Chief, Research Division, California Air Resources Board, at bcroes@arb.ca.gov or (916) 323-4519.

Sincerely,



Linda S. Adams

Secretary for Environmental Protection

cc: Bart E. Croes, P.E.
Chief, Research Division
Air Resources Board

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bcc: Linda Smith, RD
Hien Tran, RD

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ReviewersPeople

CALEPA

Jeffrey Brook.
Environment Canada.
4905 Dufferin Street.
Downsview, Ontario M3H 5T4.
Canada. Phone:.
Email: jeff.brook@ec.gc.ca.

Mark D. Eisner, MD, MPH
Associate Professor of Medicine
School of Medicine
Division of Occupational and Environmental Medicine
University of California
San Francisco, CA 94117
Mark.eisner@ucsf.edu
415-476-7351

Richard C. Flagan
Executive Officer of Chemical Engineering
Irma and Ross McCollum-William H. Corcoran Professor of Chemical Engineering and
Professor of Environmental Science & Engineering
*B.S.E., Mechanical Engineering, University of Michigan, 1969; S.M. and Ph.D.,
Massachusetts Institute of Technology, 1971, 1973*
Office Location: 213 Spalding
Mail Code: 210-41
Phone: (626) 395-4383
flagan@cheme.caltech.edu

Alan Hubbard
Assistant Professor of Biostatistics

School of Public Health
University of California, Berkeley
101 Haviland Hall, MC 7358
Berkeley, CA 94720

PHONE: 510-643-6160
FAX: 510-643-5163
OFFICE: 113B Haviland
EMAIL: hubbard@stat.berkeley.edu