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January 6, 2010

President Mark G. Yudof
Office of the President
University of California
1111 Franklin Street, 12th Floor
Oakland, CA 94607
president@ucop.edu

RE: Urgent Request for Calculations of California-specific Relationship Between PM2.5 and Premature Deaths by Michael L. Jerrett, Ph.D.

Dear President Yudof:

On December 9, 2009 the California Air Resources Board (CARB) voted to redo the October 24, 2008 CARB Final Staff Report, "Methodology for Estimating Premature Deaths Associated with Long-term Exposure to Fine Airborne Particulate Matter in California" (Tran Report), because of concerns about its scientific integrity, including the confirmed dishonesty and fraud of its lead author Hien T. Tran.

This report found that diesel particulate matter (PM), the diesel portion of fine particulate matter (PM2.5), contributes to 3,500 annual premature deaths in California. This finding is the primary scientific justification for the Statewide On-road Truck and Bus Regulation (Truck Rule) that were approved by the CARB on December 12, 2008.

The Truck Rule is the most expensive regulation ever approved by CARB, by the agency's own admission (\$5 billion) and our industry estimates, based on our real-world experience in purchasing new trucks are at least four times as much (\$20 billion). This regulation will have a devastating impact on the California economy that relies upon diesel trucks and buses, including California's cash-strapped school districts, and could destroy thousands of California businesses that cannot afford to comply with these regulations. This will only add to California's unemployment and reduce tax revenue when California can least afford it.

The Truck Rule is the culmination of a process that began after diesel exhaust was identified as a Toxic Air Contaminant by the CARB Scientific Review Panel in 1998. The University of California (UC) is directly involved in this matter because four CARB members are senior UC professors, two peer reviewers of the Tran Report are UC professors, the Research Screening Committee includes six senior UC professors, and the Scientific Review Panel on Toxic Air Contaminants has included six senior UC professors since 1998. In addition, the UC President is obligated by state law to regularly nominate candidates to the SRP (California Health & Safety Code §39670), although the record indicates that very few nominations have been made during the past 20 years. Furthermore, UC Berkeley Professor Michael L. Jerrett has published extensively since 2000 on the relationship between PM2.5 and premature deaths and has been under contract with CARB for the last two years to produce California-specific results on this relationship.

There is serious disagreement among the scientific community regarding the relationship between PM2.5 and premature deaths. Evidence from six independent sources indicates that there is NO current relationship between PM2.5 and premature deaths in California. Three of these sources originate from the 2000 and 2009 Health Effects Institute (HEI) reports that Dr. Jerrett co-authored.

Clarification of the California-specific evidence from these sources would definitively resolve this issue. Dr. Jerrett is the California scientist in the best position to clarify these results. A detailed request for California-specific results was made to Dr. Jerrett as part of a July 11, 2008 CARB teleconference and this request was repeated and expanded upon in December 10, 2008 public comments to CARB. In addition, Dr. Jerrett was invited to present these results at the August 1, 2009 Forum on CARB Diesel Science in Ontario, California. Dr. Jerrett has failed to respond to these requests, in spite of the fact that the underlying data used in his research for HEI is subject minimally to the disclosure requirements of the Federal Data Access Act.

We are sending this letter to you, with a copy to Dr. Jerrett, in the hope that he will understand the urgent need for California-specific results and will voluntarily make them public as soon as possible. If these results do not already exist in the format previously requested, they can be produced within one week by simply rerunning the national analyses contained in the two HEI reports and restricting them to California subjects only. Thus, we request that Dr. Jerrett provide us with the California-specific results described above by January 15, 2010. This deadline is requested because Dr. Jerrett has had since July 11, 2008 to prepare a response and because sufficient time is needed to prepare formal comments for the January 28, 2010 CARB meeting.

In addition, given the scientific and economic importance of this issue, the underlying 1982 American Cancer Society Cancer Prevention Study (CPS II) data should be made publicly available as soon as possible. This data is needed for independent and transparent analysis and interpretation of the California-specific results. If Dr. Jerrett fails to respond by January 15, 2010, then we request that you compel him to comply in a manner that is consistent with the Federal Data Access Act, the California Public Records Act (California Government Code §§6250-6276.48), the California Health & Safety Code §39601.5 (AB 1085), and the UC Standards of Ethical Conduct.

Thank you very much for your consideration regarding this important request.

Sincerely yours,



Lee Brown, Executive Director
California Dump Truck Owners Association
(CDTOA)



Bill Davis, Executive Vice President
Southern California Contractors Association
(SCCA)



Skip Brown, Owner
Delta Construction

Of interest signatories,



Bryan Bloom, Owner
Priority Moving, Inc.



Steve Weitekamp, President
The California Moving & Storage Association
(CMSA)



Jay McKeeman, VP Government Relations
California Independent Oil Marketers Association
(CIOMA)



Mike Lewis, Senior Vice President,
Construction Industry Air Quality Coalition
(CIAQC)

cc: Michael L. Jerrett, Ph.D.
School of Public Health
University of California
Berkeley, CA 94720
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January 26, 2010

Mr. Lee Brown
Mr. Bill Davis
Mr. Skip Brown
Mr. Bryan Bloom
Mr. Steve Weitekamp
Mr. Jay McKeeman
Mr. Mike Lewis
Delta Construction
c/o California Dump Truck Owners Association
334 N. Euclid Avenue
Upland, California 91786

Gentlemen:

I am responding to your letter of January 6 requesting California-specific results from research undertaken by Michael Jerrett, Associate Professor in the University of California, Berkeley School of Public Health's Division of Environmental Health Sciences. You noted your belief that Professor Jerrett is a scientist in a good position to clarify what you believe is a disagreement in the scientific community regarding the relationship between fine particulate matter (PM2.5) and premature deaths, and that you, therefore, would like him to make public California-specific results of his research on this matter.

In response to your letter, my staff has been in touch with Professor Jerrett, who will be responding to you directly. My understanding is that Professor Jerrett is, in fact, in the midst of conducting research to establish definitive estimates of mortality risks associated with particulate matter in California, and plans to publish the results of that research after it has been completed, in the next 6 – 12 months. Professor Jerrett reported that the work he is conducting under an award from the California Air Resources Board in this area was delayed in part to the State's suspension of contracts due to the budget crisis, but that it is now under way. He indicated that he will happy to speak to you and others about the findings after the results become available and have been vetted through the normal peer review process.

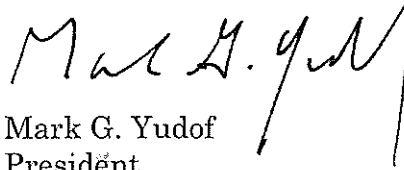
Mr. Lee Brown, et al.
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I appreciate your interest in the research being conducted at the University in the area of environmental science, and support the publication and dissemination of results to increase knowledge and inform public policy in this area. As I mentioned, Professor Jerrett will be responding to you directly, and can provide more specific information about the status and nature of his research.

Thank you for taking the time to write to share your concerns.

With best wishes, I am,

Sincerely yours,

A handwritten signature in black ink, appearing to read "Mark G. Yudof". The signature is fluid and cursive, with a long, sweeping tail on the final letter.

Mark G. Yudof
President

cc: Chancellor Birgeneau
Interim Provost Pitts
Vice President Beckwith
Associate Professor Jerrett



California Dump Truck Owners Association

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January 27, 2010

Richard F. Celeste, Chair
Daniel Greenbaum, President
The Health Effects Institute
101 Federal Street, Suite 500
Boston, MA 02110-1817
dgreenbaum@healtheffects.org

VIA REGULAR MAIL AND EMAIL

RE: Request for Underlying Data Used in Two HEI Reports:

- 1) Research Report Number 140: Extended Follow-Up and Spatial Analysis of the American Cancer Society Study Linking Particulate Air Pollution and Mortality (May 2009)**
- 2) Special Report: Reanalysis of the Harvard Six Cities Study and the American Cancer Society Study of Particulate Air Pollution and Mortality (July 2000)**

Dear Mr. Celeste and Mr. Greenbaum:

On behalf of the California Dump Truck Owners Association (CDTOA), I am requesting access to all underlying data utilized in the two Health Effects Institute (HEI) reports cited above, pursuant to HEI's "Policy on the Provision of Access to Data Underlying HEI-funded Studies" (Appendix D).

Our Association represents 1,000 members of the construction trucking industry who are being directly impacted by the California Air Resources Board (CARB) Statewide On-road Truck and Bus Regulation ("Truck Rule"). On December 9, 2009 CARB members voted to redo the October 24, 2008 CARB Final Staff Report, "Methodology for Estimating Premature Deaths Associated with Long-term Exposure to Fine Airborne Particulate Matter in California" ("Tran Report"), because of concerns about its scientific integrity, including the confirmed dishonesty and fraud of its lead author Hien T. Tran. This report found that diesel particulate matter (PM), the diesel portion of fine particulate matter (PM_{2.5}), contributes to 3,500 annual premature deaths in California. This finding is the primary scientific justification for the Truck Rule that was approved by the CARB on December 12, 2008.

As you can imagine, this act of scientific fraud has only further inflamed the disagreement among the scientific community regarding the relationship between PM_{2.5} and premature deaths. It is

our understanding that evidence from six independent sources indicates that there is no current relationship between PM2.5 and premature deaths in California.

The two HEI reports identified above play a predominant role in this debate, and it is our belief that clarification of the California-specific evidence from these sources would definitively resolve this issue. Therefore, I am requesting the underlying data used in those two reports. As you are well aware, the open and free exchange of data is an essential part of the scientific process. This data would be utilized for an independent and transparent analysis and interpretation of the California-specific results. This request is consistent with the HEI policy to facilitate the open exchange of data. Specifically, the policy reads, in pertinent part:

“The open and free exchange of data is also an essential part of the scientific process. Therefore, it is the policy of the Health Effects Institute to provide access expeditiously to data for studies that it has funded and to provide that data in a manner that facilitates review and validation of the work but also protects the confidentiality of any subjects who may have participated in the study and respects the intellectual interests of the investigator in the work.”

It is certainly worthy to note that the Truck Rule is the most expensive regulation ever approved by CARB. By the agency’s own admission it will cost the industry \$5 billion. Our industry estimates, based on our real-world experience in purchasing new trucks, that the cost could be at least four times as much (\$20 billion). This regulation will have a devastating impact on the California economy that relies upon diesel trucks and buses, including California’s cash-strapped school districts, and could destroy thousands of California businesses that cannot afford to comply with these regulations. This will only add to California’s unemployment and reduce tax revenue when California can least afford it.

Thank you very much for your consideration regarding this important request. Please contact me at your earliest convenience to confirm receipt of this request. Also please let me know if you need additional information to comply with this request or have any follow-up questions or comments.

Sincerely,

A handwritten signature in cursive script, appearing to read "Lee Brown". The signature is written in black ink and is positioned above the typed name and title.

Lee Brown, Executive Director
California Dump Truck Owners Association (CDTOA)

Of interest signatories,

Handwritten signature of Mike Lewis in black ink.

Mike Lewis, Senior Vice President,
Construction Industry Air Quality
Coalition (CIAQC)

Handwritten signature of William E. Davis in black ink.

Bill Davis, Executive Vice President
Southern California Contractors Association

CC: Board of Directors, Health Effects Institute
Mark Utell, Chair, Health Research Committee, Health Effects Institute
Board Members, California Air Resources Board
James Goldstene, Executive Officer, California Air Resources Board
Daniel Krewski, Lead Author of Requested HEI Reports
Michael L. Jerrett, University of California, Berkeley
C. Arden Pope, III, Brigham Young University

Ad Hoc Industry Working Group
CARB On-Road Diesel Truck Regulations

March 11, 2010

Members of the Air Resources Board:

Ms. Mary D. Nichols, Chair

Dr. John Balmes

Ms. Sandra Berg

Ms. Dede D'Adamo

Ms. Lydia H. Kennard

Mr. Ron Loveridge

Executive Officer James Goldstene

California Air Resources Board

P.O. Box 2815

1001 "I" Street

Sacramento, CA 95812

Mrs. Barbara Riordan

Mr. Ron Roberts

Dr. Dan Sperling

Dr. John Telles

Dr. Ken Yeager

Subject: CARB On-Road Diesel Truck Regulation; Follow-up to CARB Science Symposium.

Members of the Board and Executive Officer Goldstene:

This letter, co-authored by a number of affected trucking firms and trade associations, is provided to continue dialogue with the Board on the important issues regarding the evolution of options to be considered by the Board to the On-Road Diesel Truck regulations.

First we wish to thank Chair Mary Nichols and CARB staff for organizing and hosting the Symposium. We believe this was one of the few opportunities for Board members to understand, first-hand, legitimate debate and concerns regarding science being used to motivate/bolster the recent diesel emission regulation packages. We hope that this is but a first of several such discussions – openness and transparency of the science being used as a basis for huge public policy decisions are more important than they have ever been.

It is our conclusion that the Symposium generated significant questions regarding the estimates of premature deaths, and health effects, stemming from diesel emissions. We noted the following areas of controversy and debated outcomes:

- When using California-only data, some diesel health effects estimates show no significant adverse health problems arising from diesel emissions.
- The observation of Professor Jerrett that high levels of PM_{2.5} in California were associated with low levels of human cancer should be followed up. He should make his data set public.
- Many, if not most, of the studies evaluated health effects from PM_{2.5}, a much larger pollutant category than narrowly defined diesel exhaust components.
- The science is very thin on identifying “bad actor” diesel exhaust components, and their relationship to many other components that may be part of fine-particle air contamination.

- The research used/funded by CARB has never evaluated the health risk of their regulations on the regulated community, including loss of jobs, benefits and elevated stress.
- Relative contribution of PM 2.5 from natural or unregulated sources has not been evaluated/disclosed in the CARB-utilized research.
- A number of the PM 2.5 studies showed a strong relationship between sulfur content and more serious health effect problems. California motor fuel is nearly sulfur free and this state does not use coal or heating oil, likely sources of increased sulfur in eastern areas of the country.

As such we contend that the Board, in good faith, needs to set aside the On-Road regulations until a better harmony is reached regarding the causes and effects diesel emissions have on public health. Basing the most expensive CARB regulatory proposal ever on information that is under active debate in the scientific community is not a wise direction, especially when economic conditions create convincing further doubt about the rules' ultimate efficacy.

We suggest additional discussions be organized in the near future to fine tune the dialogue/debate on the following issues, which will assist in determining design and funding of appropriate studies to better garner reliable and statistically defensible conclusions.

- Review of studies using California-only data sets to determine if there is a more consistent finding on fine PM health effects using state-specific data. Make these data sets public.
- Review of the science on PM 2.5 and its constituents with further discussion on identification of diesel emission components and their relative risk related to other PM 2.5 constituents – this may be an area of need for further research.
- Evaluation of an “East Coast” bias on PM 2.5 health effects, and the role sulfur plays on elevated health risks.
- Development of CARB research proposals regarding the off-setting health effects of regulatory proposals on regulated parties including loss of jobs, benefits and elevated stress.

Again, we thank you for helping organize the Symposium and we eagerly await further announcements of such activities.

Sincerely, Members of the Ad Hoc Working Group:



Jay McKeeman, VP of Government Relations & Communications
California Independent Oil Marketers Association



Julie Sauls, Vice President Legislative Affairs
California Trucking Association



Becky Stolberg, Vice President
California Beer and Beverage Distributors



Bryan Bloom, President
Priority Moving, Inc.



Sean Edgar, Executive Director
Clean Fleets Coalition



Steve Weitekamp, President
The California Moving & Storage Association



Mike Lewis, Senior Vice President,
Construction Industry Air Quality Coalition
(CIAQC)



Lee Brown, President
Calif. Dump Truck Owners Association
(CDTOA)



Skip Brown, Owner
Delta Construction



Bill Davis, Executive Vice President
Southern California Contractors Association

Cc: Linda Adams, Secretary Cal/EPA
Fred Aguirre, Governor's Office
Ad Hoc Working Group
LaRonda Bowen, CARB Ombudsperson

To respond to this letter, please address correspondence to:
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CONSTRUCTION CO., INC.

March 24, 2010

President Mark G. Yudof
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University of California
1111 Franklin Street, 12th Floor
Oakland, CA 94607
president@ucop.edu

Re: Alleged Research Misconduct (Falsification) by UC Berkeley Professor Michael L. Jerrett

Dear President Yudof:

Thank you for your January 26, 2010 response to our January 6, 2010 letter regarding UC Berkeley Professor Michael L. Jerrett. In addition, we received the February 5, 2010 email response from Dr. Jerrett shown below. We are writing you again because we believe that Dr. Jerrett has seriously misled both your staff and us regarding his knowledge about the relationship between fine particulate air pollution (PM_{2.5}) and mortality in California. At the February 26, 2010 CARB Symposium on PM_{2.5} and Premature Deaths, Dr. Jerrett revealed that his research using the ACS CPS II cohort shows NO relationship between PM_{2.5} and all cause mortality in California, consistent with the findings discussed in our January 6, 2010 letter. Based on this revelation and other evidence that we have gathered, we allege that since 2006, when he became a UC Berkeley faculty member, Dr. Jerrett has engaged in clearly documented falsification related to the relationship between PM_{2.5} and total mortality in California.

In particular, we allege that Dr. Jerrett has violated the *UC Standards of Ethical Conduct*, which states "Members of the University community engaged in research are not to . . . knowingly omit data or results to misrepresent results in the research record All those engaged in research are expected to pursue the advancement of knowledge while meeting the highest standards of honesty, accuracy, and objectivity." Also, we allege that Dr. Jerrett has violated the *UC Berkeley Updated Summary Statement of University Policy Related to Conduct of Research*, which "applies to all individuals engaged in University research whatever the funding source." This policy states "*Research misconduct* means fabrication, falsification, or plagiarism, in proposing, performing, or reviewing research, or in reporting research results" and "*Falsification* is manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record."

To document our allegation of research misconduct (falsification) by Dr. Jerrett, we provide the essential details below, which we believe are sufficient to initiate a formal investigation. During

your formal investigation, we can provide you with any or all of the underlying documents discussed below, most of which can also be obtained from the Internet or from Dr. Jerrett.

The evidence begins when Dr. Jerrett co-authored the 2000 HEI Reanalysis Report (Krewski 2000) that confirmed a national relationship between PM_{2.5} and total mortality based on the ACS CPS II cohort. Included in this report is Figure 21, a U.S. map of “Fine Particulates and Mortality Risk” that indicates no excess mortality risk in California, as best as can be interpreted from the information on the map and from a slide presented at the July 23, 2001 US EPA CASAC meeting. Then Dr. Jerrett co-authored a November 2005 *Epidemiology* paper “Spatial Analysis of Air Pollution and Mortality in Los Angeles,” which found an unusually large relationship between PM_{2.5} and mortality in the Los Angeles basin during 1982-2000 (Jerrett 2005). Then Dr. James E. Enstrom authored a December 15, 2005 *Inhalation Toxicology* paper “Fine Particulate Air Pollution and Total Mortality Among Elderly Californians, 1973–2002” (Enstrom 2005), which found no relationship between PM_{2.5} and mortality in California during 1983-2002. Dr. Enstrom’s paper is the first, largest, and most detailed peer reviewed publication that focuses on the relationship between PM_{2.5} and total mortality in California.

At the March 23, 2006 CARB meeting a staff Power Point (PPT) presentation gave extensive details on Jerrett 2005 and cited numerous other studies, including Krewski 2000, Pope 2002, and Laden 2006. In addition, Abbey 1999 and Chen 2005 were cited as key papers from the Adventist Health Study of Smog (AHSMOG), which has been conducted at Loma Linda University and has been largely funded by CARB. AHSMOG is the first study of air pollution and mortality in California, dating back to Abbey 1991, but it is a small study that has published no findings on PM_{2.5} and total mortality. The CARB PPT presentation made no mention of Enstrom 2005, in spite of the fact that it was published the same month as Chen 2005 and one month before Laden 2006 appeared online. Because Enstrom 2005 was submitted directly to CARB scientist Linda Smith on January 9, 2006, we believe that the CARB staff members who prepared the PPT presentation knew about the highly relevant statewide results in this paper and knowingly omitted them from the PPT presentation.

Our view is supported by Joel M. Schwartz in his May 2006 AEI paper “*Air Pollution and Health: Do Popular Portrayals Reflect the Scientific Evidence?*” Schwartz stated “At the March meeting of the California Air Resources Board, staff members gave a detailed presentation on Jerrett et al. (2005)—a new epidemiological study of the Los Angeles region that reported a stronger link between PM_{2.5} and mortality than suggested in previous research regulators have used to support tougher PM_{2.5} standards.⁴⁶ What CARB’s staff did not tell its board is that right around the same time that Jerrett et al. was published, another study of PM_{2.5} risks in California by Enstrom (2005) concluded that PM_{2.5} was having no effect on mortality.⁴⁷ Several California papers, including the *Los Angeles Times*, covered the alarming findings of Jerrett et al. but none covered the benign results reported by Enstrom.”

The 1041-word March 25, 2006 Los Angeles Times article “Study Doubles Estimates of Smog Deaths” described Jerrett 2005 in detail, quoted Dr. Jerrett extensively, and discussed Chen 2005 and Laden 2006. However, there was no mention of Enstrom 2005 or its null results. The March 30, 2006 Health & Clean Air Newsletter No 8 “An Inconvenient Reality” presented seven pages on Jerrett 2005 and strongly praised the paper and its results. However, the Newsletter

completely ignored the null California results in Enstrom 2005 and used ad hominem comments to impugn the null results in a major national study (Lipfert 2000). In spite of substantial evidence to the contrary, the Newsletter concluded “In short, any remaining doubt that fine particles cause death and illness—and are not merely associated with these outcomes—is a scintilla.” We allege that Dr. Jerrett was aware of the CARB PPT presentation, the Los Angeles Times article, and the Newsletter and the fact that all three of these items about Jerrett 2005 omitted any mention of Enstrom 2005.

The June 1, 2006 *Inhalation Toxicology* contains criticism by Drs. Brunekreef and Hoek of Enstrom 2005 (Brunekreef 2006), as well as Dr. Enstrom’s response to this criticism (Enstrom 2006). Enstrom 2006 included Figure 21 from Krewski 2000 and permission to reproduce Figure 21 was obtained from Dr. Krewski via a January 22, 2006 email message to Dr. Enstrom. In addition, Dr. Krewski sent a January 30, 2006 email message to Dr. Enstrom, with cc’s to Drs. Burnett and Jerrett, regarding Dr. Enstrom’s January 29, 2006 email query requesting clarification of the California-specific results contained in Figure 21. Dr. Enstrom’s direct contact with Dr. Jerrett goes back to December 2003 when they exchanged email messages and had a telephone conversation about their respective ongoing epidemiologic studies on PM2.5 and mortality in California. These email messages are shown below and they clearly document that Dr. Jerrett has been aware of Dr. Enstrom’s research on PM2.5 and mortality for over six years.

On August 21, 2006 CARB scientists Richard Bode, Linda Smith, and Hien T. Tran conducted a “Public Workshop on Updating the Methodology for Estimating Premature Death Associated with PM2.5 Exposures.” The PPT presentation for this Workshop specifically shows Jerrett 2005 and Laden 2006, but not Enstrom 2005, as “New studies emerged since 2002.” In addition, Dr. Arden Pope is shown as a CARB advisor and Drs. Pope, Krewski, and Thurston are shown as members of the EPA expert elicitation panel assessing the relationship between PM2.5 and all-cause mortality. Joel M. Schwartz testified at the Workshop and then on August 29, 2006 submitted to CARB ten pages of formal comments and three of his AEI papers, including his May 2006 paper cited above. His formal comments stated “The discussions and handouts at the August 21 workshop indicate that CARB’s approach to evaluating the association of PM2.5 and mortality tends to omit contrary evidence and to uncritically accept supportive evidence. This would cause CARB to overstate the magnitude and certainty of the association of air pollution and premature mortality.” This statement also describes the approach used in the three March 2006 items about Jerrett 2005 discussed earlier.

During 2006 Dr. Jerrett prepared and submitted to CARB, as a Principal Investigator from UC Berkeley, Proposal No. 2624-254 “Spatiotemporal Analysis of Air Pollution and Mortality in California Based on the American Cancer Society Cohort.” The proposal listed eight co-investigators, including Drs. Pope, Krewski, Burnett, and Thurston. This three-year project for \$749,706 was approved at the January 25, 2007 CARB meeting, where Board Members were told “California currently has no statewide studies assessing mortality resulting from air pollution in the general population.” This approved project, which became “ARB/UCB Agreement No. 06-332,” contains the following statements relevant to our allegation of falsification: “California currently has no statewide studies assessing mortality resulting from air pollution in the general population.” (page 3); “California has no state-wide estimates of mortality to support policymaking and regulatory activities. Extension of the ACS study to

address scientific uncertainties and to derive estimates specific to California will assist the Air Resources Board and others to assess the benefits of policy interventions.” (page 4); “*This study will derive the first California wide estimates of mortality associated with PM2.5 exposure and other criteria co-pollutants, thus supplying policymakers with a valuable resource for deriving benefit estimates.*” (page 5); “We recognize the urgent need for statewide estimates of mortality effects. We will therefore put as our highest priority delivery of California-wide estimates” (page 27); and “We will also submit an interim progress report after the first 18 months of the contract documenting the results of our statewide analysis” (page 31).

The Agreement does not mention AHSMOG or its publications on air pollution and mortality in California, dating from August 1991 (Abbey 1991) to December 2005 (Chen 2005), and does not mention Dr. Enstrom’s California study (Enstrom 2005) or its related publications (Moolgavkar 2006 and Enstrom 2006). However, the Agreement contains reference 4 on page 35: “Pope CA III, Dockery DW. 2006. Critical Review—Health effects of fine particulate air pollution: Lines that connect. *Journal of the Air & Waste Management Association* 56:709-742.” In this June 2006 review article Drs. Pope and Dockery list and discuss Enstrom 2005 and Moolgavkar 2006 among a total of 502 references. Given the fact that the Agreement contains a detailed and up-to-date citation of the relevant scientific literature, including 20 references from 2006, one of which is the review by co-investigator Pope, we allege that Dr. Jerrett engaged in falsification by omitting Enstrom 2005. If Enstrom 2005 had been cited, the Agreement would have had to acknowledge that a very large and detailed study of PM2.5 and mortality in California had already been conducted and published. Enstrom 2005 and its null findings should have been revealed to the CARB Research Screening Committee during the development of the proposal in 2006 and to CARB members at the January 25, 2007 CARB meeting, because this information could have influenced the specific aims and approval of the Jerrett proposal.

On May 25, 2007 the CARB members discussed the public health justification for the “in-use off-road diesel vehicle regulation.” CARB staff members made statements about the dangers of diesel that included “Diesel PM is responsible for 70 percent of the known risk from air toxics and causes thousands of deaths each year in California. . . . In 2005, emissions from the off-road diesel vehicles covered by this proposed regulation caused 1100 premature deaths as well as tens of thousands of cases of asthma and other effects.” The estimate for premature deaths was based on a March 21, 2006 CARB report by Hien T. Tran that relied primarily on the nationwide results in the Pope 2002 paper and the Krewski 2000 report. On July 26, 2007 CARB members voted unanimously to approve the “in-use off-road diesel vehicle regulation.”

The May 22, 2008 Draft CARB Staff Report by Hien T. Tran states that PM2.5 contributes to as many as 24,000 annual premature deaths in California, with 3,900 of these deaths due to diesel PM. The most important studies used to calculate these numbers of premature deaths were Pope 2002 and Jerrett 2005, with no consideration given to Enstrom 2005. These estimates of premature deaths provided the primary public health justification for new on-road diesel vehicle regulations being proposed by CARB. However, because of public concerns that had been raised about the relationship of PM2.5 and mortality in California, CARB hosted a July 11, 2008 teleconference that included Drs. Enstrom, Jerrett, and Pope, as well as CARB scientists Hien T. Tran and Linda Smith (see December 10, 2008 CARB public comments). Dr. Enstrom repeatedly requested California-specific results from the Krewski 2000 report, the Pope 2002

paper, and the above Jerrett research project. However, Drs. Jerrett and Pope refused to provide any California-specific results, although these results should have been available for Dr. Jerrett's interim progress report due in July 2008. Given that Dr. Jerrett and the project co-investigators recognized "the urgent need for statewide estimates of mortality effect," we allege that Dr. Jerrett had findings available in July 2008 and may have included them in his interim progress report.

On October 24, 2008 the final CARB Staff Report by Hien T. Tran (Tran Report) was released with no changes in the studies used to calculate the number of premature deaths and with the slightly revised conclusion that diesel PM contributes to 3,500 premature deaths in California annually. The Tran Report did not properly address the extensive criticism contained in 148 pages of July 11, 2008 public comments submitted to CARB, particularly the criticism regarding California-specific results. On December 12, 2008 CARB members unanimously approved the on-road diesel vehicle regulations, with the primary public health justification being the premature deaths claimed to be due to diesel PM. CARB members were not properly informed of the ongoing scientific controversy regarding relationship between PM_{2.5} and mortality in California and other issues regarding the scientific integrity of Hien T. Tran and the Tran Report.

On June 3, 2009 the HEI Research Report No.140 "Extended Follow-Up and Spatial Analysis of the American Cancer Society Study Linking Particulate Air Pollution and Mortality," with Drs. Krewski and Jerrett as the first two authors, was released but it did not cite Enstrom 2005, did not include a U.S. map of "Fine Particulates and Mortality Risk" (the equivalent of Figure 21 in Krewski 2000), and did not present any California-specific results. The report did present the Los Angeles basin results contained in Jerrett 2005. Because of his ongoing ARB/UCB project and the July 11, 2008 request from Dr. Enstrom, Dr. Jerrett was well aware of importance of California-specific results but he did not include any such results in the 2009 HEI report. Thus, we allege that Dr. Jerrett engaged in falsification by omitting from this report California-specific results and mention of Enstrom 2005.

On November 19, 2009 CARB Member John G. Telles read his November 16, 2009 letter requesting that the Tran Report be redone and the diesel regulations be suspended because of the fraud committed by lead author Hien T. Tran. CARB Chair Mary D. Nichols agreed to host an open symposium on the Tran Report science. In addition, she acknowledged that four Board members, including herself, knew of the fraud perpetrated by Tran about his Ph.D. degree and knew that this information was withheld from other Board members before the December 12, 2008 vote to approve the on-road diesel truck regulations.

The resulting February 26, 2010 CARB Symposium on "Estimating Premature Deaths from Long-term Exposures to PM_{2.5}" included talks by Drs. Enstrom, Jerrett, Pope, Krewski, and many other experts on PM_{2.5}. The Jerrett PPT presentation on "California-specific Studies on the PM_{2.5} Mortality Association" (28 slides), particularly slide 26 "Summary of California cohort studies associated with long-term particulate matter exposure" makes no mention of Enstrom 2005. However, Jerrett slides 12 and 26 present relative risk (RR) results for the CA CPS II cohort showing RR = 1.00 (0.97-1.03) for all causes of death during 1982-2000. Note that RR = 1.00 means no increased risk due to PM_{2.5} and that 95% confidence limits including 1.00 mean no statistically significant effect. The Jerrett result is in exact agreement with the Enstrom 2005 result for the CA CPS I cohort RR = 1.00 (0.98-1.02) for all causes of death during 1983-2002. Based on the CA CPS I and CA CPS II results, by far the two largest California-specific

studies, the number of "premature deaths" associated with PM2.5 exposure is zero, not the thousands of deaths presented to the Board when it voted to approve the off-road and on-road diesel regulations. Since the computations to produce the RRs in slides 12 and 26 are relatively simple, we allege Dr. Jerrett has known these results since July 2008 or earlier. Furthermore, since specific RRs were presented in slides 12 and 26 on February 26, 2010 we believe that there is substantial obfuscation contained in Dr. Jerrett's February 5, 2010 email message below.

It is clear to the undersigned that Dr. Jerrett has engaged in a sustained pattern of falsification ("knowingly omit data or results to misrepresent results in the research record") regarding evidence on the relationship of PM2.5 and mortality in California dating from his 2006 CARB proposal and up to his February 26, 2010 CARB PPT presentation. He has repeatedly failed to cite the Enstrom 2005 study and has repeatedly failed to clarify the various forms of California-specific evidence from the CPS II cohort that he has possessed for the past ten years, dating back to Figure 21 in the 2000 HEI Report. Because of this falsification, CARB members and the general public did not know that overwhelming epidemiologic evidence from CA CPS I and CA CPS II shows no relationship between PM2.5 and mortality in California since 1983. CARB members should have been informed of these California-specific results before they voted on major California diesel vehicle regulations in 2007 and 2008.

Because of the serious nature of the alleged research misconduct (falsification) and because of the serious economic consequences to California businessmen resulting from the CARB diesel regulations that have been approved, at least in part, because of this falsification, we request that you assess our allegations as soon as possible. If Dr. Jerrett disputes the accuracy of any of the statements above, we will provide you with our evidence supporting their accuracy. Most of this evidence is either contained in the letter itself or is freely posted on the Internet. Once you have assessed our allegations, we request that you prepare a detailed account of your findings that can be released to the public. Also, if you confirm that our allegations are valid, we request that you take appropriate action against Dr. Jerrett.

While only the undersigned are responsible for this letter, all the signers of January 6, 2010 letter to you are interested in knowing your findings and conclusions regarding the above allegations. For your reference, we have attached a copy of the January 6, 2010 letter.

Thank you very much for your assistance regarding this important matter.

Sincerely yours,



Norman R. "Skip" Brown
President and Owner
Delta Construction Company



Lee Brown

I have carefully examined the letter of particulars concerning Professor Jerrett. I am familiar with literature in this area and statistical technologies used to evaluate observational data. The particulars should be thoroughly and expeditiously evaluated as important decisions have been made and will be made based on Professor Jerrett's work.

A handwritten signature in cursive script, appearing to read "S. Stanley Young", is displayed on a light gray, textured background.

S. Stanley Young, PhD, FASA, FAAAS

Attachments:

Email dated February 05, 2010 from Michael Jerrett to Lee Brown

Email dated 30 January 2006 from Daniel Krewski to James E. Enstrom (with others leading to this email). 4 pages total

Email dated 22 Dec 2003 from Michael Jerrett to James E. Enstrom

From: Michael Jerrett [mailto:jerrett@berkeley.edu]
Sent: Friday, February 05, 2010 3:44 PM
To: Lee Brown
Cc: 'Ellison Wilson Advocacy, LLC'; john.balmes@ucsf.edu; 'Ellen Auriti'
Subject: response to your request for California-specific results

Dear Mr. Brown:

I apologize for this delayed reply, but I had to coordinate with President Yudof and his staff. I understand that President Yudof has now replied, and I would like to elaborate on where we are with the research you are interested in having published.

My colleagues and I are continuing to work on the Air Resources Board contract to establish definitive estimates of the mortality risks associated with particulate matter and other criteria air pollutants in California. Last year, however, the State of California suspended hundreds of contracts due to budgetary problems. Our contract was suspended for some 4 months and as a result key personnel could not be hired or had to be laid off the project, which has put us behind schedule. After this considerable delay and disruption it took some time to get the project back on track. We have now just developed the personal exposure measures at the home addresses of the subjects in our study and are now just starting the "formal" analyses of them, which will take another 6-12 months to complete.

As I explained in my earlier communications, I was out of the country when you invited me to speak on August 1, 2009. As the results become available and are properly vetted through rigorous peer review, I would be happy to speak to you and others about our findings.

I should also point out that none of the subject-specific health data needed to conduct the health analyses is resident on the University of California campus. These data are housed and analyzed at the University of Ottawa, Canada. In any event, the data contain sensitive health information on hundreds of thousands of people, and there are means within the data to identify some individuals. On entering the American Cancer Society Cancer Prevention II study, all individuals signed informed consent forms and were guaranteed that their identities would remain confidential. Thus any request to access the data would have to through ethics review to protect the subjects' identities and ensure these identities would remain confidential. There are also provisions from all involved institutions regarding the protection of human subjects, to which any of the researchers accessing the data would have to adhere. The data I use for the study component here at UC Berkeley is publicly available air pollution monitoring data that is downloadable through the ARB website.

We will endeavor to supply the results as quickly as possible, but we cannot rush these analyses. They are technically intricate, extremely complex, and we need to take appropriate care to ensure the results are valid. Your recommendation to replicate the national analysis here in California is not feasible or scientifically defensible because there are so few metropolitan areas with central monitors from our other national studies that the exposure assignment would be so crude that we could not trust the results. Results produced from such analyses would likely not be publishable in the scientific literature and even if they were published, they would have little or no

credibility in the scientific community given the limitations of the exposure assessment.

One of the reasons our research is so widely cited relates to the great care we take in applying the most sophisticated and scientifically valid methods to understand this complex relationship between air pollution and mortality. We cannot rush such analyses without jeopardizing our extensive quality control and peer review process, which is essential for ensuring the scientific findings are valid and accepted by scientific and policy communities. We will not rush these analyses for any given external concern because the integrity and quality of the findings is of utmost importance to my colleagues and I, who are conducting the research and are ultimately responsible for the scientific results that we publish.

I understand how your organization and many others would like to see our results published. It is unfortunate that the budgetary problem in California has led to delays in finalizing science that may help to inform decisions affecting your industry and more generally public health. But these matters were beyond my control or the control of anyone at the University of California. We are working hard to supply those results through publication in journals of the highest standing in the fields of Medicine and Environmental Health.

Thank you for your interest in our research.

With best regards,

Michael Jerrett

Michael Jerrett, PhD

Director, Doctor of Public Health Program

Associate Professor

University of California, Berkeley

School of Public Health

Division of Environmental Health Sciences

710 University Hall (Office and GIS Lab)

Berkeley, CA 94720-7360

jerrett@berkeley.edu

Tel: 510-642-3960

Fax: 510-642-5815

X-Sieve: CMU Sieve 2.2
Reply-To: <dkrewski@uottawa.ca>
From: "Daniel Krewski" <dkrewski@uottawa.ca>
To: "James E. Enstrom" <jenstrom@ucla.edu>
Cc: "Rick Burnett" <Rick_Burnett@hc-sc.gc.ca>,
"Michael Jerrett" <jerrett@usc.edu>
Subject: RE: Request Regarding HEI Special Report
Date: Mon, 30 Jan 2006 18:51:17 -0500
X-Mailer: Microsoft Office Outlook, Build 11.0.6353
Thread-Index: AcYIBPeNuCLIfNbARKG1QslpyUN8GAA8ikMg
X-Probable-Spam: no
X-Spam-Report: none
X-Scanned-By: smtp.ucla.edu on 169.232.47.138

Without having the report at hand here in Lyon, France, my recollection was that we used only urban centres such as Los Angeles (and all counties therein). There may be other California cities as well, but I would have to check.

Rick Burnett or Mike Jerrett may be able to comment in advance of my return next week.

With best regards.

Daniel Krewski, PhD, MHA
Professor and Director
McLaughlin Centre for Population Health Risk Assessment
University of Ottawa
Room 320, One Stewart Street
Ottawa, Ontario CANADA K1N 6N5

Assistant: Suzanne Therien
Tel: 613-562-5381
Fax: 613-562-5380
Email: stherien@uottawa.ca

-----Original Message-----

From: James E. Enstrom [<mailto:jenstrom@ucla.edu>]
Sent: Sunday, January 29, 2006 1:49 PM
To: Daniel Krewski
Subject: Request Regarding HEI Special Report

Dear Dr. Krewski:

I have a question regarding Figure 21, "Fine Particles and Mortality Risk," and the related text, "Spatial Patterns in the Data," in your 2000 HEI

Special Report. Did you determine the relative risk of mortality from all causes for specific counties in California and/or the relative risk of mortality from all causes associated with an increase in fine particles for California as a whole? If you did, are your results available in one of the HEI Special Report Appendices or elsewhere? If you did not, can you calculate them now using the underlying ACS CPS II data described in Figure 14?

Thank you very much for any information you can give me. If you wish, I can explain why this information would be valuable to me.

Best regards,

James E. Enstrom, Ph.D., M.P.H.

At 09:03 PM 1/22/2006, you wrote:

>Thanks for keeping me informed.

>

>With best regards.

>

>Daniel Krewski, PhD, MHA

>Professor and Director

>McLaughlin Centre for Population Health Risk Assessment

>University of Ottawa

>Room 320, One Stewart Street

>Ottawa, Ontario CANADA K1N 6N5

>

>Assistant: Suzanne Therien

>Tel: 613-562-5381

>Fax: 613-562-5380

>Email: stherien@uottawa.ca

>

>

>-----Original Message-----

>From: James E. Enstrom [<mailto:jenstrom@ucla.edu>]

>Sent: Wednesday, January 18, 2006 2:12 PM

>To: Daniel Krewski

>Subject: Fwd: RE: Permission to Reprint HEI Material

>

>Dear Dr. Krewski,

>

>As per the request below from Virgi Hepner, I am writing to notify you

>about the reprinting of material from your HEI Special Report, as described

>below.

>

>Best regards,

>
>James E. Enstrom, Ph.D., M.P.H.
>
>
>
>>Subject: RE: Permission to Reprint HEI Material
>>Date: Wed, 18 Jan 2006 13:23:47 -0500
>>From: "Virgi Hepner" <VHepner@healtheffects.org>
>>To: "James E. Enstrom" <jenstrom@ucla.edu>
>>
>>To: James E. Enstrom
>>
>>The Health Effects Institute hereby gives permission to reprint Figure
>>21 from the HEI Special Report "Reanalysis of the Harvard Six Cities
>>Study and the American Cancer Society Study of Particulate Air Pollution
>>and Mortality" published in 2000.
>>
>>We understand that the figure will appear in an article you are
>>submitting to Inhalation Toxicology and that credit will be given to HEI
>>as the source.
>>
>>We would appreciate it if you would also notify Dr Daniel Krewski (the
>>Principal Investigator for this project) at
>>
>>University of Ottawa
>>Institute of Population Health
>>McLaughlin Centre for Population Health Risk Assessment
>>One Stewart St.
>>Room 320
>>Ottawa Ontario K1N 6N5 Canada
>>613-562 5379
>>dkrewski@uottawa.ca
>>
>>Thanks for your interest in the research sponsored by HEI.
>>Virgi Hepner
>>Senior Science Editor
>>
>>
>>
>>-----Original Message-----
>>From: James E. Enstrom [mailto:jenstrom@ucla.edu]
>>Sent: Thursday, January 05, 2006 1:09 PM
>>To: Carol Moyer
>>Cc: Virgi Hepner
>>Subject: Permission to Reprint HEI Material
>>

>>Dear Carol Moyer and Virgi Hepner:
>>
>>I am writing to request permission to reprint one page from a Health
>>Effects Institute publication. Specifically, I would like permission to
>>reprint Figure 21 (page 197) from the following HEI Special
>>Report: <http://www.healtheffects.org/Pubs/Rean-part2.pdf> . Figure 21
>>(printed page 197) is on page 70 of the .pdf file. I would like to use
>>this figure in a commentary on fine particles and mortality that I have
>>written for publication in a peer-reviewed journal. I would properly
>>cite HEI as the source of this figure.
>>
>>Please let me know if you need any additional information regarding this
>>request.
>>
>>Thank you very much for your consideration.
>>
>>Best regards,
>>
>>James E. Enstrom, Ph.D., M.P.H.
>>UCLA School of Public Health and
>>Jonsson Comprehensive Cancer Center
>>jenstrom@ucla.edu
>>(310) 825-2048

X-Sieve: CMU Sieve 2.2
Date: Mon, 22 Dec 2003 18:09:31 -0800
From: michael jerrett <jerrett@usc.edu>
Subject: Re: Potential Air Pollution Study
To: "James E. Enstrom" <jenstrom@ucla.edu>
X-Mailer: iPlanet Messenger Express 5.2 HotFix 1.21 (built Sep 8 2003)
X-Accept-Language: en
Priority: normal
X-Probable-Spam: no
X-Spam-Hits: -1.6
X-Scanned-By: vscan.smtp.ucla.edu

Dear Dr. Enstrom:

I apologize for my delayed reply. I've just now gotten access to USC's email. I will call you tomorrow regarding your study.

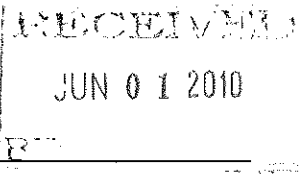
With best regards,

Mike Jerrett

----- Original Message -----

From: "James E. Enstrom" <jenstrom@ucla.edu>
Date: Wednesday, December 10, 2003 2:23 pm
Subject: Potential Air Pollution Study

> Dear Dr. Jerrett,
>
> I am an epidemiologist at UCLA and Dr. Rob McConnell suggested that I
> contact you. This regards a potential air pollution epidemiologic study
> which would combine my prospective cohort data with your GIS data. I
> would
> appreciate it if you can call me and I will describe in more detail what I
> have in mind.
>
> Thank you very much.
>
> Best regards,
>
> Jim Enstrom, Ph.D.
> (310) 825-2048
>
>



OFFICE OF THE VICE CHANCELLOR FOR RESEARCH
119 CALIFORNIA HALL #1500

BERKELEY, CALIFORNIA 94720-1500

May 25, 2010

PERSONAL & CONFIDENTIAL

Norman Brown
Lee Brown
President and Owner
Delta Construction Company
P.O. Box 277517
Sacramento, CA 95827

Gentlemen:

President Yudof has forwarded to me your letter of March 24, 2010, in which you allege that Professor Michael Jerrett has violated the UC Standards of Ethical Conduct and has committed research misconduct. I am the campus official responsible for managing the process of investigating allegations of research misconduct. The procedures followed when these kinds of allegations are made can be found at the following URL: http://vcresearch.berkeley.edu/research_policies/compliance/misconduct. As you can see from the above website, UC Berkeley has an extensive policy and set of procedures to deal with allegations of research misconduct. These conform to Federal Regulation 42CFR93. Our process has three phases: Assessment, Inquiry, and Investigation. The purpose of the initial Assessment phase is to determine if the complaint received constitutes a bona fide allegation of research misconduct within the definition contained in Federal regulation and campus policy.

Your specific claim with regard to your allegation of research misconduct is that Professor Jerrett engaged in the falsification of research results. As you note in your letter, campus policy and federal regulations define falsification as “manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record.” What this definition refers to is the record of the investigator’s own research activity, i.e., the data and findings resulting from experimentation or other data gathering techniques conducted by the investigator and reported in scholarly journals, grant applications, presentations, and the like. In the material you provided to us there is no instance in which Professor Jerrett can be said to have altered or misrepresented the data and findings of his studies. You point to a number of instances in which Professor Jerrett did not refer to studies conducted by other researchers that may or may not have been consistent with his findings. But Professor Jerrett is not obligated to do so, and such omissions do not fall within the definition of research falsification under University policy and/or Federal regulations.

Your allegation that Professor Jerrett has violated the UC Standards of Ethical Conduct is apparently based on a claim that he did not reference a variety of publications in his own work. In particular, you object to statements made by Professor Jerrett to the California Air Resources Board (CARB) in support of a project for which he sought funding; statements which you contend he knew or should have known

to be false. Specifically you take exception to the following claim by Professor Jerrett: *“This study will derive the first California wide estimates of mortality associated with PM2.5 exposure and other criteria co-pollutants, thus supplying policymakers with a valuable resource for deriving benefit estimates.”* You contend that Professor Jerrett was aware of “a very large and detailed study of PM2.5 and mortality in California” published in 2005 by Dr. Enstrom, and thus the claim Jerrett makes for his own study is false and intended to mislead the CARB.

I note two things with respect to these allegations of an ethical breach by Professor Jerrett. First, a researcher is under no obligation, ethical or otherwise, to reference or acknowledge every study conducted on a topic similar to theirs. Researchers make judgments about the value and relevance of the work done in their field and on that basis choose what to include as part of their own published material. Scholars may well value things differently and on that basis engage in debate about their results and findings. The existence of such differences and the debate they engender does not indicate the existence of ethical issues. Second, the evidence available indicates that Professor Jerrett’s study is much more comprehensive than the earlier study of Dr. Enstrom. The Enstrom study has subjects residing in 25 of 58 counties across California, but only 11 of 58 had air pollution estimates. The Jerrett study includes 54 of the 58 counties (all 54 have health data and pollution estimates). While the Enstrom study covered 19% percent of California’s counties, the Jerrett study includes more than 93% of the counties. Hence, your assertion that Jerrett misled CARB by claiming his study offered comprehensive coverage of California is not sustained by the available evidence.

Accordingly, I have concluded that the information you have provided is not evidence of conduct that would violate any University policy covering research or other ethical misconduct or would warrant any further inquiry under University policy.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert Price". The signature is fluid and cursive, with a large initial "R" and "P".

Robert Price
Associate Vice Chancellor for Research

June 16, 2010

VIA CERTIFIED MAIL and E-MAIL

California Air Resources Board Members:

Ms. Mary D. Nichols, Chair
Dr. John R. Balmes, Ph.D. M.D.
Ms. Sandra Berg
Ms. Dorene D'Adamo
Hon. Ken Yeager, Santa Clara County Supervisor
Ms. Lydia H. Kennard

Hon. Ronald O. Loveridge, Mayor, City of Riverside
Ms. Barbara Riordan
Hon. Ron Roberts, San Diego County Supervisor
Dr. Daniel Sperling, Ph.D.
Dr. John G. Telles, M.D.

1001 I Street, P.O. Box 2815
Sacramento, CA 95812-2815
arbboard@arb.ca.gov

Re: "Replacement Tran Report" on Premature Deaths in California Associated with PM2.5 Exposure

Dear Chairman Nichols and Board Members:

The purpose of this letter is to demand that all generally-accepted scientific standards are fully complied with prior to finalizing the "Replacement Tran Report."

The October 24, 2008 CARB Staff Report "Methodology for Estimating Premature Deaths Associated with Long-term Exposure to Fine Airborne Particulate Matter in California" (original "Tran Report") was admittedly flawed and unreliable. However, it still provided the primary public health justification for the Statewide Truck and Bus Regulation approved December 12, 2008. As you know, when fully implemented this regulation will cost all affected industries, by your own estimate, more than ten billion dollars in compliance actions. Given that the process used to produce the original Tran Report was severely flawed (both ethically and scientifically), it is imperative that the "Replacement Tran Report" be thoroughly vetted in an open, transparent manner by the unbiased scientists and the general public prior to Board acceptance.

As members of the impacted industries, we request that the final "Replacement Tran Report" meet the following minimum conditions:

1. Since this is a California regulation, the data used to support the report should be California-only data. It is unacceptable that U.S. EPA Integrated Science Assessment for Particulate Matter be "moved to become the basis for" the "Replacement Tran Report" because, in California, PM2.5 (a measurement of mass, not a substance) is not associated with increased mortality or any other significant public health issue.
2. The report should be initially issued in draft form, similar to the May 22, 2008 draft version of the Tran Report.
3. A Curriculum Vitae (CV) should be included for every person who contributes to the authorship of the "Replacement Tran Report."
4. There should be at least three months for public comment and CARB responses to those comments on the draft report.
5. The "Replacement Tran Report" should be based on all research studies published in peer reviewed journals and it should make reference to other major studies that are in progress and

should be reviewed by independent, impartial external experts with no ties, financial or otherwise, to either the Air Resources Board or affected industries.

6. These expert reviewers should be selected by an impartial authority, outside of CARB, such as the President of the University of California.
7. External experts should not review and evaluate the importance or validity of their own work or work of their coworkers on research or coauthors on publications.
8. Certain experts should be disqualified as expert reviewers, including those who were aware that PM2.5 was not associated with increased mortality in California but failed to say so, e.g., Drs. Michael Jerrett, C. Arden Pope, and Daniel Krewski.
9. All correspondence and commentary (including internal emails) between CARB and review panel members writing and reviewing the new report should be part of the public record, in compliance with the California Public Records Act.
10. Appropriate data sets for the accepted and approved studies used to create a new report and justify a regulatory regime should be available for review by the public.

Satisfaction of these conditions would go a long way toward restoring confidence in CARB and the CARB policy-making process, addressing and repairing CARB's currently perceived lack of trustworthiness in research and policy making and CARB's past unwillingness to seek and promote constructive input from the citizens of California and independent scientists regarding air pollution human health effects and implications for policy making and regulatory regimes. At this point any action that fails to incorporate the requested procedures above, or any CARB action to rush the final "Replacement Tran Report" in a closed-to-the-public process, will further diminish CARB's compromised reputation in the eyes of California citizens, the California Legislature, and the national scientific community. The following information serves as background on this critical issue.

BACKGROUND

Lead Technical Report Author Committed Credential Fraud

The scientific and public health basis for CARB's Statewide Truck and Bus Regulation (on-road in-use diesel regulation or "Truck Rule") is the October 24, 2008 CARB Staff Report on "Methodology for Estimating Premature Deaths Associated with Long term Exposure to Fine Airborne Particulate Matter in California" by lead author Hien T. Tran. However, Tran admittedly misrepresented his scientific qualifications and education. He did not in fact have a Ph.D. from U.C. Davis as he had originally claimed. Rather, Tran purchased a mail-order Ph.D. degree in June 2007 from "Thornhill University," which operates out of a New York City UPS Store. As documented in CARB's April 2009 Notice of Adverse Action, CARB found Tran guilty of "fraud, dishonesty and other failure of good behavior." Further, page 4 of the Notice states "Since you were the lead author and project coordinator of this report which was used to support the Regulation, your lack of credibility has called into question the credibility of the entire Regulation." However, despite fundamentally misrepresenting his credentials, Hien Tran still remains employed by the California Air Resources Board. We find it unacceptable that a 11-year employee who is very familiar with CARB's employment guidelines, was in fact only demoted and his salary was cut by only \$1,066 per month, down to \$7,899 per month (\$94,788/yr.). We remain curious as to why CARB continues to protect this employee.

Key CARB Personnel Knew About Fraud, Yet Failed to Disclose Crucial Information to the Full CARB Board and Public Prior to Important Vote, and Subsequently Perpetrated a Cover-up

Prior to approving the extremely costly Truck Rule on December 12, 2008, which affects nearly a million trucks and buses in the state, key CARB officials including Chair Mary Nichols, Executive Director James Goldstene, Chief Legal Counsel Ellen Peter and at least one Board Member, Dr. John Balmes, had actual knowledge that the project leader Hien Tran had falsified his Ph.D. credentials. In addition, on

December 3, 2008, Board Members Ronald Loveridge and Barbara Riordan were directly informed by four California scientists that Tran had misrepresented his Ph.D. However, the staff and Board Members chose to conceal this crucial information from the full 11-member Board, as well as the public, until after the Board adopted the controversial Truck Rule. Essentially, CARB purposefully withheld fundamental misrepresentations from the public in order to pass this contentious and costly rule.

In a November 10, 2009 email message to Board Member Dr. John Telles, CARB Chair Mary Nichols admitted she knew of the falsified credentials prior to the Board's vote on December 12, 2008. She also acknowledged that Tran's conduct was illegal and unethical, and admitted that it was a "mistake" to have concealed the information from the other Board Members. Ms. Nichols justified her cover-up by claiming to know that Tran's report was true despite his lies, and therefore decided that the vote should go forward without revealing the "distraction" of his misrepresentations. Dr. Telles filed a formal, November 16, 2009 complaint with CARB Chief Legal Counsel Ellen Peter claiming that key CARB officials had actual knowledge that Tran lied about his qualifications on or before December 10, 2008.

Extreme Negative Economic Impact of the Rule

It is imperative to state the severe economic consequences this rule will have on California's already struggling businesses and taxpayers. By CARB's own admission, the on-road rule alone will result in a \$5.5 billion cost to California's businesses, and tens of millions of dollars to public school districts. Based on CARB's past documented regulatory underestimates, industry now calculates the costs of this rule alone to be over \$20 billion, four times CARB's original estimate. Given the current economic collapse in this state, this regulation is likely to become the premiere "job-killer" government regulation of all time that will cause businesses that are already operating under thin profit margins to either shut down or avoid business in California altogether. Certainly a rule with such huge financial consequences deserves a fair, unprejudiced reevaluation and substantiated scientific justification.

CARB Agreed to Withdraw and "Redo" the Tran Report at its December 9, 2009 Board Meeting

In light of the fraudulent nature of the original Tran Report, the Board directed staff to withdraw and redo the report, with Chair Nichols stating "With today's set of actions, we confidently set out to revalidate the science supporting our rules..." (CARB Press Release, 12/9/09) In fact, Governor Schwarzenegger publicly stated in regards to the scandal, "It is clear...clear responsible action is needed." (*Capitol Weekly*, 12/17/09) Furthermore, CARB spokeswoman Mary Salas Fricke specified that the "Replacement Tran Report" would be completed by April, "There is going to be a series of workshops and an update to the board in April with some new provisions and a new health report." (*Capitol Weekly*, 12/17/09) To date, the above statements appear to be no more than mere hot air. The April date came and went without any mention of the "Replacement Tran Report." Compliance with our above-mentioned conditions will certainly be necessary to "revalidate the science supporting our rules" as Chair Nichols desires.

The February 26, 2010 CARB Science Symposium Showed that the Substantive Contents of Tran's Report Likely Cannot be Recreated Without Fraud

While Tran's lack of adequate credentials should in itself call into question the validity of his report, independent scientists continue to dispute the validity of his original report based on a number of reasons, including:

1. Substantial epidemiologic evidence from six different sources indicates that there is no current relationship between PM2.5 (specifically diesel PM) and premature deaths in California. The EPA's own (most recent 2005) California source data of PM2.5 indicates that on- and off-road diesel powered vehicles (this includes on-road diesel trucks and cars) account for just over 10% of the total PM2.5 in California. Consequently fully regulating the existing fleet of on-road diesel

powered vehicles will have virtually no quantifiable impact on reducing total PM2.5 levels in CA, but will cost in excess of \$20-billion to implement or \$896,740/ton.

2. The key epidemiologists relied upon by CARB in the October 24, 2008 CARB Staff Report (Drs. C. Arden Pope, Michael Jerrett, Daniel Krewski, and Michael J. Thun) have clear conflicts of interest because they are recipients of CARB and EPA funding, and/or were also involved in review of report. Furthermore, they have repeatedly refused to allow reanalysis of the key American Cancer Society Cancer Prevention Study (CPS II) database, which is in violation of Federal Data Access Act.
3. CARB has not considered several factors relevant to the justification of their diesel emission regulations. California has the fourth lowest total age-adjusted death rate of all 50 states; California is currently experiencing 13% unemployment and 25% underemployment, the highest levels since the Great Depression; none of the epidemiologic evidence used by CARB satisfies the Federal Judiciary Center standards for establishing a causal relationship between PM2.5 and premature deaths.
4. On May 22, 2008 a Draft CARB Report on PM2.5 & Premature Deaths by Hien T. Tran was published. On July 11, 2008 Tran conducted a detailed teleconference with Drs. Enstrom, Pope, Jerrett, and other key scientists who explained their data which was extremely relevant to the rule.
5. On July 11, 2008, 148 pages of mostly critical scientific comments were submitted to CARB in response to the May 22, 2008 Draft CARB Report. The October 24, 2008 Final CARB Report (Tran Report) does not properly include or address the critical comments by Drs. Enstrom, Moolgavkar, North, Dunn and Lipfert, and others.
6. CARB's February 26, 2010 Symposium on "Estimating Premature Deaths from Long-term Exposures to PM2.5" included comments by Dr. Jerrett of UC Berkeley, Dr. Enstrom of UCLA, and many other experts on PM2.5 health effects. Among other Symposium findings, based on the CA CPS I and CA CPS II results, by far the two largest California-specific studies, the number of "premature deaths" associated with PM2.5 exposure is zero, not the thousands of deaths presented to the CARB members when it voted to approve the off-road and on-road diesel regulations. Furthermore, Dr. Jerrett stated in regards to PM2.5 "...we are getting a null result for all causes now and it's because we do see this negative association with all cancer." Dr. Enstrom agreed, "In terms of total deaths, which are what are used to calculate premature deaths by the Air Resources Board, if I didn't misinterpret what he [Dr. Jerrett] said, there was no effect – very consistent with my findings."

CARB Staff Continues to Make Scientific and Data Mistakes on the Diesel Rules

In April 2010, more evidence was unveiled to further damage CARB's already shaky reputation. A computer model that CARB used to justify their off-road diesel regulations mistakenly attributed at least twice as much pollution to the off-road equipment as they actually produce and, in the case of the off-road rule, the error was up to 379 percent. CARB is still attempting to discern the full impacts of this "mistake," but clearly it means that the construction industry is producing only a fraction of the pollutants that CARB believed was the case when it adopted the off-road regulations in 2007. This display of incompetence could not have come at a worse time for CARB's credibility with the public.

Furthermore, it must be noted that Hien Tran's work was also fundamental to the justification of this off-road regulation. Tran was the "Primary Author" of the 2006 report "Quantification of the Health Impacts and Economic Valuation of Air Pollution from Ports and Goods Movement in California." This Tran report provided the methodology for the 2006 CARB report "Emission Reduction Plan for Ports and Goods Movement in California." (Appendix A). Per CARB's own admission in the Final Statement of Reasons for the off-road rule, "The methodology used to quantify health impacts was the same as that used in the Emission Reduction Plan for Ports and Goods Movement in California." (FSOR, page 44). Additionally, the off-road rule's technical supporting document "Assessment of Health Impacts from Off-

Road Diesel Vehicles” relied solely on this same Tran methodology (Appendix C, footnote 1). As you can see, Tran’s “work” is inextricably intertwined within the diesel regulations. To further withhold from the public a legitimate, full-vetted analysis is completely inexcusable.

REQUEST

Given CARB’s recent reputation for creating scientifically-unsupportable regulations, we once again must demand that the “Replacement Tran Report” be completed in an open and above-board manner so that California’s citizens can rest assured that all costly regulations are 100% necessary and justified. We call for you, as Board Members, to insist that CARB staff meet each and every one of the ten conditions detailed on page one of this letter prior to placing the “Replacement Tran Report” before you for adoption.

Respectfully,

From all signatories of interest below,



Lee Brown, Executive Director
CA Dump Truck Owners Association (CDTOA)



Bill Davis, Executive Vice President
Southern California Contractors Association (SCCA)



Skip Brown, Owner
Delta Construction



Jay McKeeman, Vice President, Government Relations
California Independent Oil Marketers Association (CIOMA)



Bryan Bloom, Owner
Priority Moving, Inc.



Mike Lewis, Senior Vice President,
Construction Industry Air Quality Coalition (CIAQC)



Steve Weitekamp, President
California Moving & Storage Association (CMSA)

CC: The Honorable Arnold Schwarzenegger, Governor of California
Jerry Brown, Attorney General
Ms. Linda Adams, Secretary, California Environmental Protection Agency
Members, California State Legislature



Sheffield Hale
Chief Counsel

~~April 4~~
July 30, 2010

VIA U.S. MAIL AND/OR EMAIL

Lee Brown, CDTOA/AADT Executive Director
334 N. Euclid Ave
Upland CA 91786

Re: "Replacement Tran Report" letter

Dear Mr. Brown:

The American Cancer Society, Inc. (ACS) has reviewed your letter to the California Air Resources Board (CARB) dated June 16, 2010, which makes several inaccurate allegations about the Society and our Vice President Emeritus of Epidemiology and Surveillance Research, Dr. Michael Thun.

Four statements in particular are incorrect. First, neither ACS nor Dr. Thun has received CARB or EPA funding. Second, neither ACS nor Dr. Thun have been involved in the development or review process of the CARB report. Third, ACS has joined efforts with the Health Effects Institute in Boston to create a mechanism for legitimate scientific recalculation of the data in question. And finally, the CPS-II database is owned privately by ACS and therefore is not subject to the Federal Database Access Act.

In the future, I hope that any communications regarding ACS and Dr. Thun will contain factually accurate information.

Sincerely,

Sheffield Hale

cc: Michael J Thun, M.D., ACS, Inc.
Mrs. Mary D. Nichols, Chair
Dr. John R. Balmes, Ph.D. M.D.
Ms. Sandra Berg
Ms. Dorene D'Adamo
Hon. Ken Yeager, Santa Clara Co. Supervisor
Ms. Lydia H. Kennard
Hon. Ronald O. Loveridge, Riverside Mayor
Ms. Barbara Riordan
Hon. Ron Roberts, San Diego Co. Supervisor
Dr. Daniel Sperling, Ph.D.
Dr. John G. Telles, M.D.
Hon. Arnold Schwarzenegger, Governor

Hon. Jerry Brown, Attorney General
Ms. Linda Adams, Secretary, Calif. EPA
Members, California State Legislature
Michael Jerrett, Ph. D., UC Berkeley
Daniel Krewiski, Ph.D., U Ottawa
C. Arden Pope III, Ph.D., BYU
Bill Davis, SCCA
Skip Brown, Delta Construction
Jay McKeeman, CIOMA
Bryan Bloom, Priority Moving
Mike Lewis, CIAQC
Steve Weitekamp, CMSA

National Home Office
250 Williams Street Atlanta, GA 30305
404.327.6423 fax) 404.929.6980
Cancer Information 1.800.ACS.2345 www.cancer.org

Hope.Progress.Answers.®

September 7, 2010

Mr. Lee Brown
Lee Brown
CDTOA/AADT Executive Director
334 N. Euclid Ave.
Upland CA 91786

Dear Lee,

I am pleased to forward the results of analyses prepared by Dr. Daniel Krewski of a California-specific analysis of American Cancer Society (ACS CPS II) data for the California Metro Statistical Areas. As you know, this was follow-up to the work presented in HEI Research Report 140 using the same methods and approaches, and performed in response to your request to HEI. I had hoped that these could be made available sooner, but am glad to be able to provide them now.

The data underlying these analyses is owned by the American Cancer Society which has provided access by specific investigators for researching particular research questions. The ACS was willing to provide permission for data access to Dr. Krewski for these additional analyses and he agreed to perform them. I am attaching a letter from Dr. Krewski which explains how the analyses were performed and limitations in their interpretation. Given potential broader interest in any such results, HEI is forwarding these supplementary analyses to CARB as well, with a request to post them on their website so that they are available to the larger community.

Dr. Krewski describes the limitations of conducting such an analysis with very limited statistical power; I might note that HEI's Research Committee would likely not have funded this analysis given its limited power and utility. I should also note that these specific supplementary results were not subjected to HEI's detailed and careful process by which we select research and investigators, engage outside data auditors to provide quality assurance, monitor progress of the research, independently review and evaluate every completed study, and prepare a commentary pointing to strengths and weaknesses of the study. In as much as this work was a direct extension of the research presented in Report 140 (which did go through our detailed research and review processes), and also based on our experience of working with Dr. Krewski in the past, we have no reason to believe anything but that the analyses were performed using all the appropriate methods and safeguards. Nevertheless, these results have not been subjected to the detailed scrutiny to which HEI would normally put any research that it sponsors.

Please let us know if you have any questions and thank you for your patience in awaiting these results.

Sincerely,



Daniel S. Greenbaum, President

Cc: Dr. Krewski, University of Ottawa
Dr. Thun, American Cancer Society



uOttawa

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Canada's university

Université d'Ottawa
Institut de recherche
Sur la santé des populations

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August 31, 2010

Dan Greenbaum
President
Health Effects Institute
101 Federal Street
Suite 500
Boston, MA 02110
USA

Dear Dan,

In response to your request of April 30, and subsequent telephone discussions with senior staff at both the Health Effects Institute (HEI) and the American Cancer Society (ACS), I have prepared a number of supplementary analyses pursuant to the presentation that I made at the workshop sponsored by the California Air Resources Board (CARB) on February 26, 2010 in Sacramento.

These supplementary analyses are being provided to you with the approval of ACS in the interests of being responsive to requests received by HEI for additional California specific results. The supplementary analyses included Tables 1 and 2 attached are identical to national analyses given in Tables 33 and 34 in HEI Report No. 140, *Extended Follow-up and Spatial Analyses of the American Cancer Society Cohort Linking Particulate Air Pollution and Mortality*, published in May, 2009, but are specific to the State of California. The supplementary analyses for California were prepared using the same analytical methods used for the national analyses that are described in HEI Report No. 140, but are restricted to ACS participants residing in metropolitan statistical areas within California.

These analyses have been conducted by the McLaughlin Centre for Population Health Risk Assessment at the University of Ottawa, and have not been reviewed by other members of the research team that prepared the national analyses summarized in our HEI Report. There will be no charges to HEI for preparing these results.

It is important to note that although these analyses show results for cardiopulmonary mortality that are similar to those in the national analysis, these analyses are subject to a number of limitations, the most important of which is the very small number of metropolitan statistical areas for which fixed site ambient monitoring data are available in California. A more fulsome analysis of the ACS data specific to California is currently being conducted under an agreement between CARB and the University of

California at Berkeley, for which Dr. Michael Jerrett is Principal Investigator. This analysis will involve a much more sophisticated assessment of exposure to ambient air pollution throughout California, thereby providing a firmer basis for the assessment of the impact of air pollution on population health in that state. The final report will include a detailed evaluation of the study results, which is necessary for a proper interpretation of the findings.

With the ongoing CARB sponsored study nearing completion, further ad hoc analysis of the ACS data of the type included in the attached two tables would appear to be counterproductive, and of limited utility for assessing the population health risks of ambient air pollution. As such, the McLaughlin Centre would prefer not to receive requests for additional ad hoc analyses of this type from HEI.

Having worked with the ACS data since 1998, we are aware of the challenges involved in analyzing, evaluating, and interpreting complex data of this type. If there remains interest in exploring regional variation in mortality associated with ambient air pollution within the United States, it might be preferable to address such variation on a national scale. However, this would be a nontrivial undertaking, which would require time and resources to complete.

I understand that HEI has made arrangements with CARB to have these supplementary analyses posted on their website.

With best regards,



Daniel Krewski, PhD, MHA
Professor and Director
MacLaughlin Centre for Population Health
Risk Assessment
University of Ottawa

Cc Dr. Michael Thun, American Cancer Society

Table 1

HRs by Cause of Death for a 10-ug/m³ Change in PM_{2.5} Covering Three Follow-Up Time Periods, Using the Same Number of MSAs and Study Participants Within PM_{2.5} Exposure Categories, and With and Without Adjustment for the Seven Ecologic Covariates (State of California)^{a,b}

Covariates in Model ^c	Follow-Up Through 1989		Follow-Up Through 1998		Follow-Up Through 2000	
	1979-1983	1979-1983	1979-1983	1999-2000	1979-1983	1999-2000
PM _{2.5}						
MSAs (n)	4	4	4	7	4	7
Participants (n)	40,408	40,408	40,408	50,930	40,408	50,930
All Causes						
44 Individual	0.872 (0.805, 0.944)	0.958 (0.914, 1.003)	0.975 (0.918, 1.034)	0.960 (0.920, 1.002)	0.968 (0.916, 1.022)	0.960 (0.902, 1.022)
+ 7 Ecologic	0.927 (0.830, 1.035)	0.950 (0.890, 1.014)	0.976 (0.912, 1.045)	0.949 (0.894, 1.008)	0.949 (0.894, 1.008)	0.960 (0.902, 1.022)
CPD						
44 Individual	0.985 (0.877, 1.106)	1.056 (0.988, 1.128)	1.101 (1.012, 1.197)	1.053 (0.991, 1.119)	1.084 (1.003, 1.171)	1.075 (0.984, 1.174)
+ 7 Ecologic	1.119 (0.955, 1.311)	1.089 (0.995, 1.193)	1.104 (1.003, 1.216)	1.081 (0.995, 1.175)	1.081 (0.995, 1.175)	1.075 (0.984, 1.174)
IHD						
44 Individual	1.034 (0.876, 1.220)	1.126 (1.021, 1.242)	1.306 (1.153, 1.480)	1.126 (1.028, 1.233)	1.258 (1.121, 1.410)	1.250 (1.097, 1.425)
+ 7 Ecologic	1.131 (0.899, 1.422)	1.150 (1.005, 1.316)	1.332 (1.155, 1.537)	1.144 (1.010, 1.296)	1.250 (1.097, 1.425)	1.250 (1.097, 1.425)
Lung Cancer						
44 Individual	0.630 (0.485, 0.818)	0.887 (0.751, 1.046)	0.889 (0.720, 1.099)	0.902 (0.772, 1.054)	0.900 (0.738, 1.097)	0.877 (0.700, 1.099)
+ 7 Ecologic	0.746 (0.518, 1.074)	0.944 (0.750, 1.188)	0.891 (0.699, 1.134)	0.941 (0.759, 1.168)	0.941 (0.759, 1.168)	0.877 (0.700, 1.099)
All Other Causes						
44 Individual	0.797 (0.704, 0.901)	0.849 (0.789, 0.914)	0.841 (0.765, 0.924)	0.856 (0.800, 0.916)	0.843 (0.773, 0.920)	0.843 (0.773, 0.920)
+ 7 Ecologic	0.757 (0.635, 0.901)	0.780 (0.702, 0.866)	0.849 (0.762, 0.947)	0.788 (0.715, 0.867)	0.847 (0.767, 0.936)	0.847 (0.767, 0.936)

^a The analyses included in the above table are identical to national analyses given in Table 33 in HEI Report No. 140, *Extended Follow-up and Spatial Analyses of the American Cancer Society Cohort Linking Particulate Air Pollution and Mortality*, published in May, 2009 by the Health Effects Institute, but are specific to the State of California.

^b Based on a standard Cox model with the 44 individual-level covariates with and without adjustment for the seven ecologic covariates at MSA & DIFF levels. The baseline hazard function was stratified by age (1-year groupings), gender, and race. All analyses were conducted using the same 4 MSAs (40,408 participants) (Los Angeles, San Diego, San Francisco, San Jose) or 7 MSAs (50,930 participants) (Los Angeles, San Diego, San Francisco, San Jose, Fresno, Riverside, Sacramento) from the state of California. HRs are followed by 95% confidence intervals.

^c Data for the 44 individual-level covariates are from the ACS enrollment questionnaire. Data for the seven ecologic covariates were extracted from the 1980 U.S. Census Bureau database for the Nationwide Analysis of the current study.

Table 2

HRs by Cause of Death for a 10-ug/m³ Change in PM_{2.5} Based on Either a Standard Cox or a Random Effects Cox Model Covering Three Follow-Up Time Periods and Using the Same or Different Numbers of MSAs and Participants (State of California)^{a,b}

Model and Number of MSAs	Follow-Up Through 1989 ^c		Follow-Up Through 1998 ^d		Follow-Up Through 2000 ^e	
	1979-83	1979-83	1979-83	1979-83	1979-83	1999-2000
PM _{2.5} data						
Same ^f						
MSAs	4	4	7	4	7	
Participants	40,408	40,408	50,930	40,408	50,930	
Different ^f						
MSAs	4	4	7	4	7	
Participants	38,925	42,720	53,827	40,408	50,930	
All Causes						
Standard Cox						
Same	0.872 (0.805, 0.944)	0.958 (0.914, 1.003)	0.975 (0.918, 1.034)	0.960 (0.920, 1.002)	0.968 (0.916, 1.022)	
Different	0.893 (0.823, 0.969)	0.864 (0.798, 0.934)	0.861 (0.778, 0.952)			
RE Model						
Same	0.872 (0.805, 0.944)	0.958 (0.914, 1.003)	0.981 (0.903, 1.066)	0.960 (0.920, 1.002)	0.973 (0.899, 1.054)	
Different	0.893 (0.823, 0.969)	0.864 (0.798, 0.934)	0.868 (0.767, 0.983)			
CPD						
Standard Cox						
Same	0.985 (0.877, 1.106)	1.056 (0.988, 1.128)	1.101 (1.012, 1.197)	1.053 (0.991, 1.119)	1.084 (1.003, 1.171)	
Different	0.985 (0.874, 1.109)	0.970 (0.865, 1.088)	0.960 (0.830, 1.111)			
RE Model						
Same	0.985 (0.877, 1.106)	1.056 (0.988, 1.128)	1.101 (1.012, 1.197)	1.053 (0.991, 1.119)	1.084 (1.003, 1.171)	
Different	0.985 (0.874, 1.109)	0.970 (0.865, 1.088)	0.960 (0.830, 1.111)			
IHD						
Standard Cox						
Same	1.034 (0.876, 1.220)	1.126 (1.021, 1.242)	1.306 (1.153, 1.480)	1.126 (1.028, 1.233)	1.258 (1.121, 1.410)	
Different	1.034 (0.874, 1.223)	1.016 (0.864, 1.195)	1.151 (0.939, 1.411)			
RE Model						
Same	1.034 (0.876, 1.220)	1.126 (1.021, 1.242)	1.364 (1.132, 1.644)	1.126 (1.028, 1.233)	1.299 (1.086, 1.554)	
Different	1.034 (0.874, 1.223)	1.016 (0.864, 1.195)	1.246 (0.946, 1.642)			
Lung Cancer						
Standard Cox						
Same	0.630 (0.485, 0.818)	0.887 (0.751, 1.046)	0.889 (0.720, 1.099)	0.902 (0.772, 1.054)	0.900 (0.738, 1.097)	
Different	0.598 (0.460, 0.777)	0.620 (0.478, 0.805)	0.554 (0.398, 0.771)			

RE Model									
Same	0.630 (0.485, 0.818)	0.887 (0.751, 1.046)	0.889 (0.720, 1.099)	0.902 (0.772, 1.054)	0.900 (0.738, 1.097)				
Different	0.598 (0.460, 0.777)	0.620 (0.478, 0.805)	0.554 (0.398, 0.771)						
All Other Causes									
Standard Cox									
Same	0.797 (0.704, 0.901)	0.849 (0.789, 0.914)	0.841 (0.765, 0.924)	0.856 (0.800, 0.916)	0.843 (0.773, 0.920)				
Different	0.849 (0.747, 0.964)	0.789 (0.699, 0.891)	0.808 (0.690, 0.947)						
RE Model									
Same	0.797 (0.704, 0.901)	0.849 (0.789, 0.914)	0.848 (0.746, 0.965)	0.856 (0.800, 0.916)	0.847 (0.766, 0.937)				
Different	0.849 (0.747, 0.964)	0.789 (0.699, 0.891)	0.816 (0.595, 1.121)						

^a The analyses included in the above table are identical to national analyses given in Table 34 in HEI Report No. 140, *Extended Follow-up and Spatial Analyses of the American Cancer Society Cohort Linking Particulate Air Pollution and Mortality*, published in May, 2009 by the Health Effects Institute, but are specific to the State of California.

^b Models included the 44 individual-level covariates. The baseline hazard function was stratified by age (1-year groupings), gender, and race. HRs are followed by 95% confidence intervals.

^c Follow-up period used for the Reanalysis Project (Krewski et al. 2000).

^d Follow-up period used for the Updated Analysis (Pope et al. 2002, 2004).

^e Follow-up period used for this Extended Analysis.

^f Rows marked "Same" use the MSAs and participants from the current Nationwide Analysis (state of California Only). Rows marked "Different" use the MSAs and participants included in the earlier analyses (as outlined in Table 32).



334 N. Euclid Ave.
Upland CA 91786
(909) 982-9898

January 20, 2011

Michael L. Jerrett, Ph.D.
Division of Environmental Health Sciences
School of Public Health
University of California
50 University Hall
Berkeley, CA 94720-7360
jerrett@berkeley.edu
(510) 642-3960

RE: Urgent Request Regarding Relationship Between PM2.5 and Premature Deaths in California

Dear Dr. Jerrett:

This letter is a follow-up to the January 6, 2010 and March 23, 2010 letters to UC President Mark G. Yudof, regarding your research on the relationship between PM2.5 and premature deaths in California. These letters are attached for your reference. We are particularly concerned that the California Air Resources Board (CARB) did not accurately estimate the number of premature deaths in their August 31, 2010 Report ““Estimate of Premature Deaths Associated with Fine Particle Pollution in California Using the United States Environmental Protection Agency Methodology.” This report relies primarily the May 2009 Health Effects Institute Research Report 140 “Extended Analysis of the American Cancer Society Study of Particulate Air Pollution and Mortality,” that you co-authored with Daniel Krewski, Ph.D., and others. The 2010 CARB Report has been used as the public health justification for revised CARB diesel regulations that were approved by CARB on December 17, 2010. These regulations have a direct and adverse impact on our businesses and our ability to survive in the California economy.

Consequently, we request a copy of your paper or report that describes in detail your February 26, 2010 CARB Symposium findings on PM2.5 and total mortality in California. Since your three-year \$750,000 CARB-funded project "Spatiotemporal Analysis of Air Pollution and Mortality in California Based on the American Cancer Society Cohort" was initiated in January 2007, we assume that you have now prepared a paper based on your 2010 CARB Symposium findings. For your reference, we have summarized your findings in the attached PDF file.

If you have not written this paper and/or cannot share it with us, we request an unredacted copy of pages 1 and 16-19 from your June 25, 2008 CARB Quarterly Progress Report describing Task #10 for this project. A redacted copy of these pages is attached so you know exactly what is being requested.

Finally, we request that you notify CARB that the findings in your February 26, 2010 CARB Symposium presentation and in the attached August 31, 2010 letter from Dr. Krewski do not support the conclusion that PM2.5 is responsible for 9,200 premature deaths per year in California

All the concerns that are stated in our 2010 letters still stand. As California taxpayers who are directly impacted by your California taxpayer funded research at a California taxpayer funded university, we hope you will respond appropriately and promptly.

Thank you very much for your consideration regarding this important request.

Sincerely yours,



Lee Brown, President
California Dump Truck Owners Association
CDTOA



Skip Brown, Owner
Delta Construction Company

cc: Patrick Whalen, CDTOA Counsel
Ellison Wilson Advocacy, LLC

S. Katharine Hammond, Ph.D., Chair
Division of Environmental Health Sciences
School of Public Health
University of California
Berkeley, CA 94720-7360

President Mark G. Yudof
Office of the President
University of California
1111 Franklin Street, 12th Floor
Oakland, CA 94607-5200

Attachments:

June 25, 2008 CARB Jerrett Quarterly Progress Report (5 pages)

January 6, 2010 Ad Hoc Group letter to Yudof re Jerrett (3 pages)
([http://www.cdtoa.org/CARBdocs/Jerrett letter final 1-6-09.pdf](http://www.cdtoa.org/CARBdocs/Jerrett%20letter%20final%201-6-09.pdf))

February 26, 2010 CARB Symposium Jerrett Summary PDF (3 pages)
(http://www.cdtoa.org/CARBdocs/Jerrett%20CARB_Final060310.pdf)

March 24, 2010 Ad Hoc Group letter to Yudof re Jerrett (14 pages)
(<http://www.cdtoa.org/CARBdocs/letters/AdHocGroupLettertoYudofReJerrettMisconduct032410.pdf>)

August 31, 2010 Krewski letter to Greenbaum then to Brown (6 pages)
(<http://www.cdtoa.org/CARBdocs/letters/HEI%20Supplemental%20Data%20Analysis%20Results%20CDTOA%20090710.pdf>)



OFFICE OF THE CHANCELLOR
200 CALIFORNIA HALL #1500
BERKELEY, CALIFORNIA 94720-1500

January 31, 2011

Lee Brown, President
California Dump Truck Owners Ass'n.
Skip Brown, Owner
Delta Construction Co.
334 Euclid Avenue
Upland, CA 91786

Dear Messrs. Brown:

This will acknowledge and respond to your January 20, 2011, letter to Professor Michael Jerrett, requesting "a copy of your paper or report that describes in detail your February 26, 2010 CARB Symposium findings on PM2.5 and total mortality in California."

As your letter correctly anticipated, such a document is not available for release because the work has not been completed and the report has yet to be written. Your letter goes on to say that, if this paper has not been written, you are requesting an "unredacted copy of pages 1 and 16-19 from your June 25, 2008 CARB Quarterly Progress Report describing Task #10 for this project." The records in question were redacted at the specific request of one of the funding agencies, the South Coast Air Quality Management District. We are reviewing the request for redaction of the record, and will get back to you shortly on this aspect of your records request.

Please let me know if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "Alan T. Kolling".

Alan T. Kolling
Public Records Coordinator

Cc: Chief Campus Counsel Chris Patti
Professor Michael Jerrett

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 JOINT LEGISLATIVE AUDIT
 RULES

Michael Jerrett Ph.D
 School of Public Health
 University of California
 50 University Hall #7360
 Berkeley, CA 94720-7360

April 26, 2011

Dear Dr. Jerrett,

It has come to my attention that there have been conflicting reports upon which the Air Resources Board based the truck and bus regulation regarding PM2.5 and the mortality rate. I would like the chance to personally examine this data myself.

Therefore, I am writing to request a copy of the report entitled "Spatiotemporal Analysis of Air Pollution and Mortality in California Based on the American Cancer Society Cohort." The work was supposed to have been completed on February 28th, 2010 (which was paid for at the expense for the California taxpayer). If the report is still not completed, please send unredacted copies of pages 1 and 16-19 from the June 25th, 2008 CARB Quarterly Progress Report detailing Task #10 for the project.

Thank you in advance for your assistance in getting me this information.

Godspeed,

Tim Donnelly
 Assemblyman, 59th District

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MAY 24 2011

OFFICE OF THE CHANCELLOR
200 CALIFORNIA HALL #1500

BERKELEY, CALIFORNIA 94720-1500

May 17, 2011

Tim Donnelly
Assemblyman, 59th District
15900 Smoketree Street, Room 100
Hesperia, CA 92345

Dear Assemblyman Donnelly:

This will acknowledge and respond to your records request to Professor Michael Jerrett at the School of Public Health here on the Berkeley Campus.

The report you request is still in draft form and remains unavailable at this time. However, we understand that the Draft Final Report is scheduled to be presented to the Research Screening Committee on June 9, and we can update you about its status after that date. Please find enclosed the unredacted pages of the June 25, 2008 CARB Quaterly Progress Report that you also requested.

Please let me know if you have any questions.

Sincerely,

Alan T. Kolling
Public Records Coordinator

Enclosure

cc: Professor Michael Jerrett



**California Air Resources Board
Research Division
Contract Quarterly Progress Report**

Contract Information

Title: Spatiotemporal Analysis of Air Pollution and Mortality in California Based on the American Cancer Society Cohort
Date Submitted: June 25, 2008
Agreement Number: 06-332
CARB Contract Manager: Cynthia Garcia
Prepared by: Bernard Beckerman

Principal Investigator:	Dr. Michael Jerrett	
Organization:	University of California Berkeley	
Reporting Period:	Quarter No: 4	April 1, 2008 - June 30, 2008
Project Description:		
#		

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Task# 10	Task Descripti on:	Replication of LA analysis for all California Zipcodes	
% Task Completed this Quarter:	75%	% Task Remaining:	25%
Funds Spent on Task (this quarter):		Remaining Task Funds:	
Sub-contractor Assigned:	UCB Faculty and subcontr actors		
Work Accomplished in this Quarter			

revised

<p>During this period we ran health analysis for the entire state (N=93,000-97,000 depending on the specific exposure and geocoding exposures). Analyses were run using Cox proportional hazards models for ozone and PM2.5. Exposures were assigned to the zip codes of the participants. For PM2.5 we used the inverse distance weighting (IDW) interpolations supplied to us by Cynthia Garcia, and two kriging models (one universal fit in GS-Plus and ArcGIS, and one ordinary fit in R software). For summertime ozone (i.e. April-September months) we used the IDW interpolations from ARB and the new Bayesian Maximum Entropy Interpolators developed by Dr. Christakos and his team. We did not attempt to fit an ordinary or universal kriging model to the ozone data because of the presence of spatiotemporal anisotropy.</p> <p>We tested all cause, cardiopulmonary, cardiovascular, ischemic heart disease (IHD), respiratory, lung cancer and "other" causes (the final as a negative control). Both PM2.5 and ozone had significant associations with cardiopulmonary, cardiovascular, and IHD deaths, and these effects were generally insensitive to the exposure modeling</p>			
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<p>technique. Although these results appear promising, we would propose to wait until all the individual geocodes and the land use regression models are prepared to publish the results.</p> <p>Most of the kriging models appeared to over smooth the pollution surfaces compared to what we had observed in single-city models. It appears ancillary information is needed to obtain fine-grained exposure assessment. In addition, it seems assignment to the zip code centroid, while probably reasonable for PM2.5, may produce significant error for the ozone models, because this pollutant has considerable variation near roadways due to scavenging by NO of the O3. We will nonetheless compile all of our results for inclusion as appropriate in the final report.</p>			
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Work Ongoing			
Additional investigation into the relationships between exposure and disease			
Summary of Changes to the Work Plan, Schedule or Milestones.			
N/A.			
Describe Work Planned for the Upcoming Quarter			
See "Work Ongoing"			