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Addressed to the California Air Resources Board (CARB) and  
Interested Elected and Appointed Officials.

**Comments by John Dale Dunn MD JD on the CARB Revised and  
resubmitted research of Dr. Michael Jerrett on Small Particle Air  
Pollution Human Health Effects**

**With particular emphasis on the Data Torturing project of the past year  
that resulted in the use of data from the “Subornation” model.**

*Spatiotemporal Analysis of Air Pollution  
and Mortality in California Based on the  
American Cancer Society Cohort: Final Report*

Principal Investigator:

Michael Jerrett, PhD

Co-Investigators:

Richard T. Burnett, PhD, Arden Pope III, PhD, Daniel Krewski, PhD

George Thurston, ScD, George Christakos, PhD, ScD

Edward Hughes, PhD, Zev Ross, MS, Yuanli Shi, MD, Michael Thun, MD

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I am a 40 year physician and 32 year inactive attorney. I teach Emergency Medicine as a Contract Civilian Faculty at Carl R. Darnall Army Medical Center, Fort Hood, Texas, so I have general and specific knowledge of toxicological science. I was a 15 year public health authority, so I am familiar with public health science and policy making. I am a lecturer and writer on environmental law human health effects environmental science, epidemiology and toxicology and environmental regulation for the past 18 years.

I have expertise in public health epidemiological research and principles and public policy issues that pertain to air pollution and other environmental policy matters. My opinions should not be attributed to the Department of Defense or the US Army. I am a policy advisor for the Heartland Institute of Chicago, and the American Council on Science and Health of New York City.

My previous warnings to the CARB and its Scientific Review panels and officials, delivered more than once for the past 3 years, and with reminders about the criminal and civil legal consequences of fraud in research funded by government grants and funds continue to be unheeded. I revisit those warnings and I will focus on a few scientific criticisms of Dr. Jarrett and his prominent and no doubt expensive co authors.

I renew the warning. Dr. Jarrett is actively and energetically involved in a CARB and CA EPA sponsored scientific fraud—cobbling together data to support the CARB regulatory agenda, and doing it intentionally and with *pinache*. Mercy me, the conurbation play, the epidemiologist's *Hail Mary*?

The False Claims Act (Lincoln Act) and the Data Quality Act and common law and statutory remedies for fraud on the taxpayer will someday make Dr. Jarrett's and other's work a basis for recovery from him and his sponsoring agencies and academic institutions.

At the February Symposium that focused on CARB sponsored research on Human Health Effects of small particles, Dr. Jarrett admitted that he couldn't find a human health effect in California from small particles in his most recent, very expensive (\$750 thousand dollars) research. This redo is, no doubt an attempt to rehabilitate Dr. Jarrett from that admission and dress up a

study that can claim, yes, wonderful, there is an effect—go on with the new regulations.

Dr. Jarrett made that admission, under pressure to show a real human health effect from small particles in California at the symposium, but there is nothing like money and political influence to bring out the determination to prove up the claims of a powerful and well funded environmental funding and regulatory complex with CARB as the engine.

So now we have a modeling paper that looks a lot like the nonsense put out on global warming modeling, and it has the taint of data torturing in its presentation. At least Dr. Jarrett was candid in his admission of model dredging and showed the work of using the other models to no avail in his effort to find an effect. The project finally found the nugget—subornation--as the way to cut up the population to find an effect, into the big computer parsed and sliced subornation model data and *voilà!*, a result that supports the CARB regulatory agenda.

My goodness, the subornation gambit is just another form of the well known researcher trick of chopping the data under multiple methodologies until one finds the result desired with the computer, the mindless computer rigged to find that good result. Changing the geographic parameters to an urban and suburban mix to get a desired effect is bad science that produces outcome based junk.

The reviewers at CARB might ask, what about the other models? How can the results from such an exercise in dredging data be the basis for a claim of a substantial and credible assertion about small particle effects on humans when the other models showed no effect? What about the humans in the other models, did they live or die, or are they just confusing? Is this exercise just an example of confirmation (outcome) bias and tunnel vision by a well paid agent of the agency who would like to continue that relationship?

### ***The Reference Manual on Scientific Evidence***

The new 3<sup>rd</sup> edition of the Federal Judicial Center's *Reference Manual on Scientific Evidence* (West Publishing), has an even better Chapter on Epidemiology than the 2<sup>nd</sup> edition, written by the same authors—Gordis, Freedman and Green. The authors revisit the assertions I explained in my June letter and many letters before to CARB and interested officials and

engaged reviewers and researchers.

For the Judicial Center's homepage on the Web, and free web digital copies of the 2<sup>nd</sup> and 3<sup>rd</sup> edition of the *Reference Manual on Scientific Evidence*, go to <http://www.fjc.gov>

From the 2<sup>nd</sup> Edition (2000) Chapter on Epidemiology

The threshold for concluding that an agent was more likely than not the cause of an individual's disease is a relative risk greater than 2.0. Recall that a relative risk of 1.0 means that the agent has no effect on the incidence of disease. When the relative risk reaches 2.0, the agent is responsible for an equal number of cases of disease as all other background causes. Thus, a relative risk of 2.0 (with certain qualifications noted below) implies a 50% likelihood that an exposed individual's disease was caused by the agent.

A relative risk greater than 2.0 would permit an inference that an individual plaintiff's disease was more likely than not caused by the implicated agent. (p. 384)

From the 3<sup>rd</sup> edition, Chapter on Epidemiology

An association exhibits **specificity** if the exposure is associated only with a single disease or type of disease. The majority of agents do not have a wide variety of effects. (p. 605)

When **biological plausibility** exists, it lends credence to an inference of causality. . . . When an observation is inconsistent with the current biological knowledge, it should not be discarded, but the observation should be confirmed before significance is attached to it. (p. 604)

Some courts have reasoned that when epidemiologic studies find that exposure to the agent causes an incidence in the exposed group that is more than **twice the incidence** in the unexposed group (I.e., a relative risk greater than 2.0), the probability that exposure to the agent caused a similarly situated individual's disease is greater than 50%. . . . Courts, thus have permitted expert witnesses to testify to specific causation based on the logic of the effect of a doubling of the risk." (p. 612)

The rules haven't changed. Dr. Jarrett can't tell us why or how small particles cause disease, so he's short on plausibility; he's also short on specificity because he just uses crude deaths in excess of the predicted and calls them premature. He also, even with such loose methodology, can only show effects in the range under 1.2, so he doesn't have an adequate magnitude of effect to claim proof of causation.

Just because Dr. Jarrett is committed to eliminating pollution of any kind, doesn't mean he can claim he is eliminating a toxin, particularly when one considers the following.

1. The researchers have not even bothered to define the nature of the toxin satisfactorily—small particles is a size, 2.5 microns, but it could be weaponized anthrax or agricultural dust—would anyone claim the two are equally toxic?
2. The researchers do not have exposure information—they also use air pollution monitor information for outside air when people live indoors 90 % of the time and they just average it and use it as an exposure index—when will such nonsense be stopped?
3. The decision to use crude death rates and arbitrary short lag times for endpoint of “premature” deaths ignores the nature of chronic diseases. Low level air pollution does not acutely poison people. People die after long periods of illness or disease and failed medical treatment, not some acute exposure to a few microns in a cubic meter of air. What are the researchers studying, is it a real disease or toxic effect or just variable death rates in a population?
4. Premature deaths from what disease, what toxic effect? Specificity is a surrogate in toxicology for plausibility, but it is a separate, important consideration—how can Dr. Jarrett just use premature deaths as an endpoint when we have yet no biologically or toxicologically plausible mechanism for deaths from ambient levels of air pollution. Dr. Jarrett could be counting deaths from any one of a number of confounding causes.
5. If premature deaths are to be the endpoint rather than tissue proven or test proven disease, when will Dr. Jarrett and his colleagues admit to the problem that they torture crude death rate data for short term rate increases that might correlate with air pollution increases? What proof is that? If they are wrong, a pile of studies that result from such data torturing to find associations is just another extraordinary example of a pattern of research where the principles can't differentiate the noise

(death rate variability) from the signal (whatever deaths that might be attributable to air pollution). Monitor information in the range of the noise created by variability of the death rates, lack of real exposure and toxicity information, and arbitrary lag times provide great opportunities for trolling through the data for a correlation. Could it be that Dr. Jarrett was trolling with the good ship conurbation?

6. If death rates vary as much as 15 percent in populations from winter to summer and variability of death rates from day to day can easily be that much, is Dr. Jarrett, *sans* biological plausibility just reporting on the noise and claiming it is a signal. If the results are in the low range, how much noise, how much signal?
7. If the effect reported fails to meet the *Reference Manual recommendation* that effects be at least 100 percent to be adequate for proof of toxicity, is the Jarrett study just another hypothesis generating study under the rules or another supportive study for the needs of the agency and the air pollution regulatory agenda?
8. Is this conurbation model anything more than a sophisticated form of confirmation bias driven by intellectual passion and commitment with tunnel vision?
9. Is Dr. Jarrett falling for the well established problem in the air pollution human health effects science community of intellectual passion and commitment combined with confirmation bias and the faggot fallacy? (That faggot fallacy is discussed in *Judging Science* by Huber and Foster (MIT press 1997), and it is the fallacy based on the “belief that multiple pieces of evidence, each independently being suspect or weak, provide strong evidence when bundled together.”)
10. Given the source of funding and the CARB commitment to regulating small particles, does anyone on the review panel think Dr. Jarrett would ever, ever receive funding from US EPA or CARB if he repeated his candid admission of February 26, 2010 that would shut down the CARB particle control industry and shut down the CARB and US EPA juggernaut?

## **Conclusion**

I was stunned to see Dr. Jarrett’s desperate ruse of conurbation as the one model from 10 that gave him the desired result that he then claimed was proof of a significant small particle pollution health effect. I quote Dr. Jarrett “We conclude that combustion-source air pollution, especially from traffic, is significantly associated with premature death in this large cohort of

Californians.”

### **Cargo Cult Science in the Movie Capital State**

I would ask that the reader consider the old and amusing story of Cargo Cults—the mistaken notion of primitives that if they followed some of the appearances of old air fields in South East Asia after the war was over, the planes would return with the people who flew them. Cargo cult science is a fallacious conduct, the pretentious display of scientific customs and methodology that has no substance and is unreliable and unscientific.

The many PhDs arrayed in this very expensive study, even if they presented themselves solemnly and wore white coats, would be involved in a data dredging charade. Bad science cannot be hidden like a Potemkin Village, because in the end it's still about the reliability and the credibility of the evidence. Dr. Jerrett's evidence is the great example of the old Texas saying often wrong but never in doubt.

I won't belabor the history and the previous studies that will be brought to the reader's attention about California studies that show no effect. Use of the word significantly might be over the top.

1. A major study by the Health Effects Institute shows no excess mortality from fine particles.
2. The Enstrom Study of a robust cohort of Californians studied over a significant period of time shows no death effect from small particles.
3. The US EPA 2002 report of diesel exhaust health effects showed no effect.
4. The previously mentioned Pope second half data and the Krewski map of effects shows that California residents are not suffering any adverse effects from air pollution.

A good honest study that disproves a hypothesis is controlling—it is evidence that the premise is wrong. Consensus science, a vote of the paid researchers present, or a reliance on authority offends the rules of science—a process that must first of all hold skepticism rather than acquiescence in high regard. Unfortunately hundreds of thousands of dollars from agency coffers can influence research and eliminate self examination, skepticism and most of all humility and adherence to the rules of science even when it goes against one's personal interests.

Scientists must be committed to a careful and skeptical search for truth and reliable results and solutions; they can't become tools of political interests.

Hello—any scientists on watch at CARB or CA EPA?

Respectfully submitted,

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