This has been an extraordinary, difficult and complicated case. (Page 1, Line 1)

To the contrary, selenium toxicity is clearly the only competent cause of death.

There were no anatomical findings that explain Ms. Adanalian's death. Extensive toxicology testing was negative for over-the-counter and prescription drugs, and common poisons. However, the significantly elevated selenium levels discovered in Ms. Adanalian's specimens are consistent with previous known cases of fatal selenium poisoning.

Ms. Adanalian's clinical presentation and course was classic for selenium toxicity. Moreover, her considerable pulmonary edema and congestion at autopsy is consistent with selenium toxicity.

In short, the medical and scientific data demonstrates that selenium toxicity caused Ms. Adanalian's death.

Without any clear indicators of the cause of death, we pursued an inquiry into causes that would yield little to no anatomic findings. (Page 1, Lines 3 & 4)

Extensive forensic examination revealed that there was no anatomic explanation for Ms. Adanalian's death. As the Coroner's May 24, 2000 Court Declaration indicates, the purpose of the exhumation and second autopsy was to harvest specimens for expanded toxin testing.

One (cardiac pathologist) identified small, thickened vessels close to the atrioventricular node. This finding is seen in people who die sudden cardiac deaths; however, it is not diagnostic of that condition. (Page 1, Lines 9-11)

Neither the other two cardiac pathologists nor Dr. Siu or I saw this finding. Assuming it exists, it is completely immaterial. As Dr. Hadden recognizes, it is impossible to make any causal connection between this finding and Mrs. Adanalian's death. Moreover, Mrs. Adanalian's clinical course throughout that day and her presentation at the emergency room are not consistent with a primary cardiac death. The three cardiac pathology reports combined with Mrs. Adanalian's clinical presentation clearly exclude a cardiac cause of death.

In summary, this finding is a red herring that deserves no consideration.

The conclusion reached in the preliminary stages of the investigation by one cardiac pathologist was, "if there's nothing else in the autopsy's findings, it's probably cardiac disease." (Page 1, Lines 11-13)

This quote is not accurate and quite illogical. None of the three cardiac pathologists' reports support this quotation. Dr. Siu, the performing pathologist, as well as all three cardiac pathologists, ruled out

cardiac "disease." In addition, I thoroughly examined the heart grossly and microscopically and found no cardiac disease or abnormality whatsoever.

(How can you attribute death to something (disease) that didn't exist at autopsy?) illogical / preposterous

The emergency room physician who initially thought the condition was cardiac, now felt that it could be mercury poisoning. (P age 1, Lines 16-17)

When I discussed the case with the emergency room physician, he indicated that Mrs. Adanalian's presentation and course was most unusual and in-line with a nefarious agent.

In total the specimens were sent to 10 individuals, all of who had some apparently recognizable expertise in the area of selenium. (Page 2, Lines 2-4)

The *specimens* were not sent to any of the individuals but me. The other individuals evaluated the laboratory assay results.

One problem with selenium is its relatively recent emergence upon the medical scene. (Page 2, Lines 6-7)

Contrary to the assertion in this statement, there is sufficient scientific data to analyze Mrs. Adanalian's death.

Thus, it is not too surprising that among a group of experts, we also had diverse opinions. (Page 2, Line 17)

The Report references "diverse opinions" among the experts. The report itself makes it clear that the opinions were not nearly as diverse as the Coroner implies. The Coroner identifies no expert who believed that Ms. Adanalian died a cardiac death. The only discrepancy was between 3 The vaWho thought selenium was the cause? Who thought it was neither cardiac nor selenium? Were all opinions contained in your report? Why were some opinions not considered in your report? Do you distinguish between the stature of those individuals delivering opinions? If so, how do you do that?

The problem for all of us is that it is difficult to develop expertise concerning a condition that is extremely rare.(Page 2, Lines 17-18)

This statement reveals inadequate proficiency in the Forensic science field. Forensic science employs the use of a triad of factors that applied together lead to a cause of death determination within a reasonable degree of scientific certainty. As Forensic medical experts we are expected capable of making cause of death determinations even when the cause is one that is new to us.

In a combined experience of thousands of autopsies neither Dr.Siu, Dr. Gopal, nor Dr. Hadden have ever signed out a case as selenium toxicity. (Page 2, Lines 20-21)

It is my understanding that Dr. Siu concluded this was a case of selenium toxicity and signed it out as such.

Other questions are not clearly answered. For example, did all of the consultants use the same testing methodology? (Page 3, Lines 9-10)

A report written 20-months after the decedent's demise should not pose questions about the consultants' testing methods. The report should provide answers, not attempt to confuse the issues by asking questions that are quite easily answerable.

We can find no studies to tell us what this volatility might be. All of the tissues do not show the same percentage decrease after a constant interval. Nor are there any studies to document changes in selenium in exhumed material. (Page 3, Lines 12-15)

Volatility is the dissipation of selenium from the specimen. Regardless of the volatility rate, specimens from Mrs. Adanalian are in the range of previous cases of fatal selenium poisoning. At whatever rate the selenium was volatilized, we know that it was more elevated at the time of her death than when we discovered it. And despite volatilizing for several months prior to discovery, it was still in the range of previous cases of selenium poisoning.

The selenium toxicity issue becomes a case of conflicting experts using varying results from samples with variability. (Page 3, Lines 20-21)

Interpretation of the selenium test results is solely within the field of "Toxicology." All seven toxicologists listed in the Coroner's report independently concluded that acute selenium toxicity caused Mrs. Adanalian's death.

There are three individuals who opined that it was not selenium – one a gastroenterologist, one a chemist/nutritionist, and the third is a Laboratory Consultant. While they may have expertise about selenium from a nutritional perspective, they are not toxicologists.

Analysis of Ms. Adanalian's selenium levels in relation to her demise falls squarely into the toxicology field, especially that of the "Forensic Toxicologist." Three Forensic toxicologists analyzed this case - all three independently concluded that Selenium was a competent cause of death in this case. The United State's leading Forensic Toxicologist, Dr. Yale

Caplan, concluded that acute selenium toxicity caused Ms. Adanalian's death.

While the decedent is suspected of having taken over-the-counter dietary compounds, we do not know if she took the ones implicated in sudden death. (Page 3, Line 22-24)

This statement's relevance is unclear. First, after 20 months, this final report should not be "suspecting" whether the decedent did or did not take such dietary pills. Thorough field investigation should have been performed to confirm or deny this "suspicion." Second, since the Coroner's toxicology tests were negative for prescription and over-the-counter drugs, such speculation or suspicions are irrelevant to determining the cause of Ms. Adanalian's death.

The family has a reported history of health food supplements. No specifics as to selenium content or the amount taken by the decedent have been available to us. (Page 3, Line 23-24 and Page 4, Line 1)

Again the report speculates and questions issues that should have been resolved early on through field investigation. I would be most interested to examine the Coroner's file on this case to determine what, if any, field investigation was conducted. Proper field investigation is imperative to Forensic medical work.

In any event, Mrs. Adanalian's selenium levels were too high to have resulted from health food supplements.

We are left then with a sudden death that may be due to selenium toxicity, a cardiac condition, a combination of both or some other unknown condition. (Page 4, Lines 3-4)

A combination of selenium toxicity and a cardiac condition? It is preposterous to suggest that Ms. Adanalian's death may have resulted from a combination of selenium toxicity and a cardiac condition. Such illogical conjecture in an official report demonstrates a lack of medical proficiency.

All seven of the toxicologists listed in the Coroner's report agreed that selenium toxicity was the cause of Ms. Adanalian's death. The Coroner provides no expert who found that death was due to a cardiac condition.

It should be noted that heart failure is one of the chief consequences of selenium toxicity. This is a secondary effect upon the heart, not a primary cause from the heart.

Our current state of scientific knowledge does not give us an unequivocal cause of death. (Page 4, Lines 4-6)

This is the wrong standard. Coroner's and medical examiners do not make "unequivocal" cause of death determinations. Such a contention is completely erroneous. The proper standard is whether the cause of death can be stated with "a reasonable degree of scientific certainty." It can in this case.

As Dr. Siu said in his comment "Should new information be provided to dispute these conclusions, revision of the conclusions may be necessary." (Page 4, Lines 6-7)

This statement is misleading. In fact, it is intellectually dishonest. The Coroner's report does not provide the context within which Dr. Siu made this statement. The report suggests that Dr. Siu made this statement after concluding that the cause of death is unknown. Dr. Siu's final autopsy report clearly concludes that acute selenium toxicity caused Ms. Adanalian's death. This is far from apparent by this statement in the Coroner's report. In fact, Dr Siu's conclusion is conspicuously absent from the Coroner's entire report. This is highly unusual since Dr. Siu was the forensic pathologist who conducted the Adanalian death investigation.

Page 2, Line 18

The statement "it is difficult to develop experience concerning a condition that is extremely rare," is irrelevant because you are not required to develop expertise. Presumably, that is why experts were hired, because they are the ones who possess the experience. Isn't a coroner's job to marshal the most expertise available and present a cogent finding based on this expert opinion? Is that what was done?

Page 3, Line 22

Why is the decedent suspected of having taken "over-the-counter dietary compounds"? What is the evidence of this claim?

Page 3, Line 24

What is the family's "reported history of health food supplements?" Where was the information gleaned? Did anyone speak with the decedent's parents regarding the history of taking supplements?

Page 4, Line 4

********The coroner speaks of this death a being possibly cardiac, selenium or a combination of both. Isn't it impossible for this death to be a combination of both? Wouldn't a heart failure, in fact, follow from a toxic dose of selenium? How does the coroner rationally explain the possibility**

that this death may be a combination of both a cardiac cause and selenium toxicity?

Page 4, Line 10
In this line the coroner speaks of wanting a "greater degree of certainty of scientific testimony." What is the degree of certainty the coroner needs? Is this the same accepted standard used by the profession?

Page 4, Line 11
If in fact this death is Fresno's first case of selenium toxicity, does this not create a potential public hazard? What if the decedent was environmentally poisoned? What if it is possible to ingest selenium supplements to degree as to cause death? Aren't these public health concerns?

Page 4, Line 12
************In reference to the "root [sic] of administration," is this putting the cart before the horse. Isn't the normal course of investigation to determine cause of death and THEN method of administration? In fact, can't one describe several plausible routes of administration?**
***********Is it an acceptable standard of pathologic medicine to defer cause of death because the manner is not yet known?**