IN THE CIRCUIT COURT FOR CARROLL COUNTY, MARYLAND

STATE OF MARYLAND,	
v.	
CHARLES DAVID BRIGHTFUL,	Criminal No. K-10-040259
HARVEY ALEXANDER CARR,	Criminal No. K-10-040331
JENNIFER ADELINE FLANAGAN,	Criminal No. K-10-040167
RYAN THOMAS MAHON,	Criminal No. K-09-039370
CHRISTOPHER JAMES MOORE,	Criminal No. K-09-039569
VALERIE ANN MULLIKIN,	Criminal No. K-09-039636
RONALD DALE TEETER,	Criminal No. K-10-040300
Defendants.	Westminster, Maryland
	September 22, 2010

HEARING

WHEREUPON, proceedings in the above-entitled matter commenced.

BEFORE: THE HONORABLE MICHAEL M. GALLOWAY, Judge

APPEARANCES:

FOR THE STATE:

DAVID DAGGETT, Esq.
ADAM WELLS, Esq.
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FOR THE DEFENDANTS:

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I N D E X

WITNESS	DIRECT	CROSS	REDIRECT	RECROSS	VOIR DIRE
For the State:					
Michelle A. Spirk	--	6(BD)	152(DD)	162(AC)	--
		139(AC)	160(AW)	164(BD)	
Zenon Zuk	166(AW)	--	--	--	--

EXHIBITS	FOR IDENTIFICATION	IN EVIDENCE
For the State:		
15	187	--
For the Defendants:		
1	24	--
2	31	--
3	96	--
4	131	--

Keynote: "---" indicates inaudible in the transcript.

P R O C E E D I N G S

THE CLERK: Silence in court. All rise.

All manner of persons having any business before the Honorable, the Judges of the Circuit Court for Carroll County draw near and give your attendance. The Court is now sitting. The Honorable Michael M. Galloway presiding.

THE COURT: Good morning. Be seated, please.

THE CLERK: Good morning. I have a question for you. The exhibits, they are probably -- I asked them and they are probably not going pull them and look at them. Did you want them up there instead of down here?

THE COURT: Right there is good.

THE CLERK: Okay.

THE COURT: Thank you.

MR. DAGGETT: Do you have anything else to call, Your Honor? Is there anything else that you --

THE COURT: I don't think so. I think you are the only show in town.

MR. DAGGETT: I just saw one person I didn't know. I didn't know if you had another case. But that's fine.

Calling State of Maryland versus Charles Brightful, 40259; Harvey Carr, 40331; Jennifer Flanagan, 40167; Ryan Mahon, 39370; Christopher Moore, 39569; Valerie Mullikin, 393636; Ronald Teeter, 40300.

David Daggett, D-a-g-g-e-t-t, and Adam Wells, W-e-l-

l-s, present for the State on day three of the Frye-Reed hearing.

MR. CRUICKSHANK: And good morning, Your Honor. For the record, Alex Cruickshank, C-r-u-i-c-k-s-h-a-n-k, Office of the Public Defender on behalf of the Public Defender's clients in these cases.

MR. DeLEONARDO: And good morning, Your Honor. Brian DeLeonardo, D-e-L-e-o-n-a-r-d-o.

THE COURT: Good morning everyone.

MR. DAGGETT: I believe when we concluded yesterday afternoon we, the State, had just wrapped with Ms. Spirk.

THE COURT: And we are ready for cross.

MR. DAGGETT: Assuming there is some. If not --

MR. DeLEONARDO: Yes.

THE COURT: All right. Recalling Ms. Spirk.

THE CLERK: Please remain standing and raise your right hand.

Whereupon,

MICHELLE ANN SPIRK

was recalled as a witness by the State and, having been first duly sworn, was examined and testified as follows:

THE CLERK: Please have a seat. For the record, please state your full name, spelling your first and last, and give your business address, please.

THE WITNESS: Michelle Ann Spirk, M-i-c-h-e-l-l-e S-

p-i-r-k, Arizona Department of Public Safety, Central Regional Crime Laboratory, 2323 North 22nd Avenue, Phoenix, Arizona, 85023.

THE CLERK: Thank you.

CROSS-EXAMINATION

BY MR. DeLEONARDO:

Q Ms. Spirk, you testified yesterday about the level of your involvement in the drug recognition program. Is that correct?

A I'm sorry. I'm having a little trouble --

Q Yesterday you testified about the level of your involvement in the drug recognition program. Is that correct?

A Yes, it is.

Q And you were very involved in the steering committee for this program. True?

A At our statewide level, yes.

Q And you attend a great deal of conferences in this area. Is that correct?

A I do, yes.

Q You put on a lot of training in this area in this. Correct?

A Yes.

Q And in fact, you are sort of involved in the formation or at least the revision and the application of the program. Is that correct?

A I don't understand the question.

Q Well, does the DRE program look to you to provide guidance on how to apply the program?

A In the focus of toxicology, I've provided some guidelines and insights. I don't know that I would agree that they look to me to specifically direct them on the program. But I have given some insight, as far as the toxicology application goes.

Q Have they taken that advice?

A I think they've considered it and probably utilized it, yes.

Q But you don't know if they used your advice or not?

A My understanding is that I'm not the only individual that provides toxicological advice and guidance. There are a number of individuals that work with the program.

Q Well, these conferences, basically you have an opportunity to frankly travel all over the country for these things, don't you? I mean, looking at your CV, I see you go to Reno, Dallas, Las Vegas, California, New Orleans. Correct?

A I do. However, everything obviously that's on my CV isn't directly related to the drug recognition expert program.

Q Well, a lot of them that I named are. Isn't that correct?

A Many of them are, yes.

Q And you not only -- I mean, you get to travel, as

you do, about four or five a year. Is that correct?

A I've not looked at it recently to see how many per year, but that doesn't sound out of line.

Q And you know the individual who testified yesterday, Dr. Citek. Is that correct?

A I do.

Q And you have a lot of communication with him as part of this program. Is that correct?

A I guess it would depend upon your definition of a lot of communication. I usually see Dr. Citek at hearings, such as this, where they've called experts together.

Q The same with Dr. Zuk. Right?

A Correct.

Q The three of you basically travel around for the DRE program and testify on their behalf. Correct?

A In essence, it's correct, but I don't agree with the tenor of what you're saying when you say I travel around for the DRE program.

Q Well, how many times have you testified for it?

A I travel to give an expert opinion on how I feel about the program.

Q I asked you how many times you have done it for.

A I believe probably about five, six times.

Q And you have done it with Dr. Zuk and Dr. Citek. Correct?

A There's been other experts --

Q All right. Dr. Richman is the other one. Correct?

A Yes. And I'm not sure that Dr. Zuk has been at all of them either.

Q Well, he certainly has been with several of yours, has he not?

A Yes.

Q In fact, even most recently in Pennsylvania. Correct?

A Yes, he was.

Q You are certainly friendly with Dr. Zuk, who is coming next. Isn't that right?

A We are acquaintances. We've shared a couple of meals together.

Q Shared information about your family, talked about your families. Correct?

A In a limited respect, yes.

Q All right. So when I say that you are family, that is a fair statement, is it not?

A We are professional acquaintances.

Q You would agree with me, would you not, that you have a vested interest in this program maintaining respectability in the courts, do you not?

A No, I don't have a vested interest in it. Absolutely not.

Q You have absolutely no vested interest. Is that what you are telling us?

A I have an appropriate professional interest in something that I think serves the toxicological efforts. I don't have a -- the term vested implies that I have an inappropriate interest.

Q Well, that's exactly what I am implying.

A And I don't believe that I do.

Q All right.

A I disagree with you.

Q All right. Well, let me ask you this: You testified yesterday that you have this book coming out called "Interpretive Toxicology in Drug-Impaired Driving." Correct?

A Yes.

Q And the basis of you being able to do your interpretive toxicology is essentially relying on a drug recognition expert. Correct?

A No. It's -- if the DRE program didn't exist, we would still have drug-impaired drivers. There would still be litigation. There would still be forensic toxicology. I would still be asked to come to court and provide an expert opinion. I would professional miss the information and the evidence provided by the DRE program, but there's nothing untoward, vested, unethical, inappropriate about it.

Q All right. So this book is $189 book. Correct?

A (No response.)

Q Correct?

A The book isn't published yet, so I have no idea --

Q But you can buy in pre-sale. Correct? $189. Is that a fair -- is that correct?

A I have no idea what the list price of the book will be. And I, in all likelihood, will make absolutely no money on this book.

Q Oh, really. You are just doing it out of the goodness of your heart.

MR. DAGGETT: Your Honor, I am going to object. Sarcasm is not necessary. He has proved his point. I think we need to move on.

THE COURT: Overruled.

BY MR. DeLEONARDO:

Q Is it not true that you intend to sell this book at the conferences and to DREs and forensic toxicologists? Correct?

A The book will be marketed on the internet by Springer Humana Press. I have no idea if it will marketed at the conferences. I wouldn't be surprised if it was at the conferences.

Q And it has sections about the drug recognition expert program, does it not?

A Each chapter has case studies. And the case

studies, when possible, will include DRE evaluations.

Q So again, the validity of the drug recognition expert program would be important to the success of your book, would it not?

A I believe that the book will be of equal interest to the intended audience with or without the DRE component.

Q No impact. That's what you are telling me? You have no interest in the DRE program?

A Oh, that's absolutely untrue. Of course I have an interest in it.

Q But you are not biased is what you are saying.

A I'm absolutely not biased.

Q All right. Well, that's interesting, because yesterday you talked about studies. Right? And you -- one of the studies that you mentioned or were asked about was the Heishman study. Correct?

A Correct.

Q And you went out of your way, and I think it was on the Bigelow study, to point out that it was at an elite university called Johns Hopkins. Correct?

A Yes.

Q Who was involved in the Heishman study?

A Dr. Heishman, Dr. Dennis Crouch.

Q Where are they? Where was that from?

A That was also done at the Johns Hopkins University.

Q Oh, you mean at the same elite university that you pointed out in the first one.

A Yes.

Q But you left that fact out to the Court, did you not?

A I don't recall whether I stated it or didn't state it.

Q You also went in great detail as to the other studies, the Arizona study, the LA field study, as well as the Bigelow study. And you went out of your way to discuss the percentages in those cases. Correct?

A My recollection is that I made the three and four different conclusions from the studies, which were about the percentages, yes.

Q Did you ever mention the percentages in the Heishman study?

A I believe what I said was their conclusion that there was still accurate predictive value.

Q In fact, what you said was they were overly negative. Isn't that correct?

THE COURT: Over what?

MR. DeLEONARDO: Overly negative.

BY MR. DeLEONARDO:

Q You described it as being overly negative today. Isn't that true?

A I don't recall saying that, no.

Q I guess the Court can use its memory.

You also, did you not, not discuss -- you went to great length to point all of your perceived flaws with that study. Correct?

A I did provide a list of issues with the study design, yes.

Q Did you point out a single flaw in the other three studies yesterday?

A I don't recall having done so, but I don't have a specific memory of it.

Q And in fact, when you typically testify in these cases, you don't ever point out a flaw in those three studies, do you?

A Actually, if I were asked a question that called me to comment on something that elicited that type of response, I would not have a problem pointing out something that perhaps could have been done differently or better.

Q So only when someone knows enough to ask you, you will point it out. Is that what you are telling me?

A No. What we did yesterday was an exceptionally brief overview of the studies. I probably spent less than five minutes on each of those studies at the most. And --

Q Well, I will certainly give you more time today. Okay? I will certainly give you more time today.

Let me ask you, typically when you testify, as well, you never mention the Heishman study. Isn't that true?

A No, that's not true. The Heishman study does come up.

Q When you testified in Pennsylvania recently, did you even mention the Heishman study?

A The Heishman -- I don't recall whether I voluntarily mentioned it up front. It's certainly brought up. The questions I'm specifically asked --

Q I didn't ask you that. I asked you in Pennsylvania, when you testified, did you ever even discuss the Heishman study?

A Yes.

Q You are sure?

A I need clarification. Are you talking about in the direct, in --

Q I think it is a pretty clear question. Did you ever discuss the Heishman study?

A It -- my recollection is that it was discussed in cross-examination. Is that part of what you're asking me?

Q I am asking you if at any point in time was it discussed in Pennsylvania. I don't know how to make that clearer.

A I was trying to make sure that you weren't specifying in direct versus cross-examination.

Q I am asking at any time --

A At any time?

Q -- you came in and you rendered opinion that this program is a valid and well-accepted program in the medical, forensic, toxicology fields. I am asking you if you ever mentioned the only double-blind study that has been performed, that you have talked about so far.

A My recollection is that in all the hearings that I've testified at, that the Heishman study has been brought up in cross-examination. If it wasn't brought up in cross-examination, I apologize, but that's my recollection.

Q You -- in the field -- let me ask you this: In the field of science, the concept of peer review in publication is really a term of art, is it not?

A I don't understand the question.

Q Well, peer-review publication, as far as the science community, means that you have people outside of the person doing the study take a look at it and critically examine it for validity. Correct?

A I think that's a fair statement, yes.

Q And in fact, not only do they make criticisms and corrections, but then that information will then be collected. And the person who did the study will either address it or they won't publish the study. Correct?

A No, that's an oversimplification.

Q Oh, it is? So you are telling me -- well, the other option is that that person acknowledges those limitations in their studies. Correct?

A I'm -- I've actually been an individual who sat on a peer review function. And another option that you didn't mention is that you can levy a suggestion or a criticism to an author, and they also have the opportunity to explain their work, to disagree with you, to put it to the editor-in-chief. And that happens routinely. You left that out.

Q Absolutely. And I didn't mean to leave that out. You are -- that is the dialogue that goes on to ensure that what is being put out to the world has actually been examined by people that don't have an interest in the work. Correct?

A Again, I would disagree slightly. I think that it goes to people who oftentimes have an interest in the work. They're knowledgeable in the subject matter. But you were correctly earlier, when you said they're not part of the group that's put the paper together for publication. But typically, the best criticism that's levied is by somebody who's knowledgeable in that area, understands the work. They're in the best position to be able to levy criticism and suggestions.

So it's not as if it were somebody completely devoid of knowledge in that area.

Q Well, no. That's what I mean. I am not suggesting that a neurological study is being sent to ---. Obviously it

is going to be the experts in the field of neurology. Correct?

A Yes.

Q But the point is that the person is not vested in the study being published. Correct? They are doing their review to determine honest criticism and dialogue. Right?

A Yes.

Q And it is only then that it will be published in one of the respected or reputable journals. Correct?

A Yes.

Q And so that is what is meant by peer reviewed and published. Correct?

A Typically, yes.

Q Well, typically. In the science community, that is what is meant.

A There are other mechanisms to be published that involve peer review. There are proceedings from scientific meetings where there is an editorial board. And abstracts are published. Essentially, I agree with you. I'm just saying there are some subtle additional ways to be peer reviewed and published.

Q But you would also agree with me that that is very different than the concepts of a technical report. Correct?

A No.

Q So do you believe that a technical report is the same thing as being peer reviewed and published?

A Oh, I'm sorry. I didn't hear you correctly.

Q Technical report. Do you agree that a technical report is not the same thing as being peer reviewed and published?

A I think some of this is going to depend upon the journal that you're submitting to and what their own policies and procedures are. I think that there are journals that have letters to the editor, technical reports that do go through a peer-review process. There are journals where they don't go through. I think you'd have to look to each individual journal to figure that out.

Q In the field of science -- I will ask it again -- there is a distinct difference between being peer reviewed and published and releasing a technical report. Correct? Just releasing a report.

A I think it's a semantic area where we're differing. If you're talking about a report, let's say a large DOT NTSA report that comes out and it's printed and released. I understand your point of view on that. It hasn't gone through the "editorial process." But there are technical letters, technical reports, letters to the editor, that are submitted to a journal, say, in response to a prior publication, they do go through a technical review. And they're published in --

Q A technical review. Correct?

A They're published in the journal.

Q But not an outside peer review, which is what peer review and publish means. Correct?

A I can't speak for all the scientific journals. There are journals where they go through the technical review, the same, a similar review to what the articles go through. There are journals where they don't. I can't make a blanket statement about what's happening.

Q All right. Well, let me ask you this way: You would agree, would you not, that when at least you are saying peer review and publish, you are referring to it being published in a journal. Correct?

A Yes.

Q All right. So the concept of peer review and publish, whatever we disagree about, what the review process is, you will certainly agree it has to be in a journal. Right?

A Yes.

Q Now you previously testified that the Arizona, LA field study and the Bigelow study were all peer reviewed and published, have you not?

A I don't have a specific memory of having said that the three validation studies for the DRE program were all peer reviewed and published.

Q Because if you said that, that would not be true. Correct?

A There -- the reports are disseminated. They are

reviewed. But in the classical sense that you and I have just discussed, in terms of a journal, in terms of an editorial board, that would not be accurate.

Q So, again, you recall testifying in Pennsylvania. Is that correct?

A Yes, I do.

Q On March 7, 2008, in Butler County. Correct?

A I don't recall the specific date, but I do recall having testified in Butler County, Pennsylvania.

Q Do you remember saying, "Well, I can tell you that all three of the original validation studies, Arizona, the Los Angeles study, as well as the Johns Hopkins study, were published and peer reviewed. They were set up for a huge amount of scrutiny"? Do you recall saying that?

A Yes. Excuse me. I don't recall saying it. I'm not surprised in that context to have said that, yes.

Q Well, but you just told me that it is not published. Correct?

A No, I didn't say it wasn't --

Q You just said it had not been published. And you agreed with me that it had not been published in that way.

A I know exactly what my intention was in that testimony. There is -- there is this desire to say that NTSA, DOT, large volumes of documentation are not published. These reports are not -- no one's looked at them. They have no

review. They're just out there. There's -- they're in a vacuum, in a void. That's inaccurate.

They are reviewed, looked at, discussed. They are copied and disseminated. They're very widely reviewed. However, I do agree with you that it is not the same as having submitted it to a journal, having it go through the complete editorial process that you and I have just discussed, gone back and forth with revisions. It's not gone through that same thing. I completely agree with you.

Q You also agree with me that you testified under oath to something that is not true.

MR. DAGGETT: Objection. That is not what she said.

MR. DeLEONARDO: I am just asking her --

BY MR. DeLEONARDO:

Q -- if you will agree with me.

A No, I don't agree with you.

Q So when you said specifically, "Well, I can tell you that all three of the original validation studies, the Arizona, the Los Angeles field study, as well as the Johns Hopkins study were published and peer reviewed. They were set up for a huge amount of scrutiny," you are telling me that that was consistent with your testimony today?

A In the context of that testimony, in the context of what I'm trying to discuss today, I believe it's completely consistent. And that is how I have always viewed the NTSA and

the DOT reports.

Q Oh. So when you say, "The DRE Arizona validation was published in a journal article," was that also a misunderstanding on your part?

A The -- will you read that to me again, please?

Q "The DRE Arizona validation was published in a journal article."

A It actually -- that segment of that validation study was published in a journal article.

Q It was an abstract. Correct?

A It's several pages. It's not an abstract.

Q How long was the study?

A I have no idea.

Q I am going to show you what has been marked as State's Exhibit No. 12. Is that the study? (Handing document to the witness.)

A Yes.

Q Was that study published in a journal?

A The entire study, which is -- you asked earlier how long it was. It appears to be approximately 60 pages long.

Q Again, was that published in a journal?

A And this, this entire study was not published in a journal. However --

Q So when you said that it was published in a journal, that was not correct.

A No. The study, a summary of this study was published in a journal.

Q An abstract. It was presented at a conference. Isn't that correct?

A I don't believe it was an abstract. It was not the entire study.

Q What is an abstract?

A Typically an abstract is just a few paragraphs. It's quite short.

MR. DeLEONARDO: I am going to have this marked as Defense Exhibit --

THE COURT: What number?

MR. DeLEONARDO: I guess it would be No. 1.

THE CLERK: Defendant's No. 1.

MR. DeLEONARDO: Defense 1.

(The document referred to was marked for identification as Defendants' Exhibit 1.)

BY MR. DeLEONARDO:

Q I am going to show you what has been marked as Defense Exhibit No. 1. Can you identify that? (Handing document to the witness.)

A Yes. This is a copy of an abstract presented at the American Academy of Forensic Sciences, it looks like 1994 meeting in Colorado Springs, Colorado.

Q The abstract was presented at a conference. Correct?

A Yes.

Q It was not subjected to critical review and publication. Correct?

A This isn't the document I was referring to. But to answer your question, these are published in the -- after every meeting, there is a bound publication of all the meeting abstracts.

Q Right. They give them parting gifts. They give them all the presentations that were offered. Correct?

A There is a scientific editor that the abstracts are submitted to. And the scientific editor has a staff of technical experts. They go through every abstract. They read every abstract. And I completely agree with you that it is not at the same level as a journal, but it is considered a publication.

Q It is. So if I bring a professor in clinical research from Johns Hopkins, the elite university, do you think he is going to agree with that opinion?

A I have no idea. I would assume so.

Q Okay. You would agree with me that you also talk about your Arizona results, what you find in your practice. Correct?

A (No response.)

Q Correct?

A I don't understand the question.

Q You testified yesterday that you actually see in the high eighties success and confirmation of the DRE finding. Correct?

A Yes, typically.

Q All right. The DRE finding is if someone is impaired by a drug and unable to drive. Correct?

A That's not specifically what I'm talking about. What I'm talking about is the identification and the opinion of which category and then the confirmation by the laboratory showing what percentage of the time the selection of the category was confirmed by the laboratory. Those are the results that I'm speaking of.

Q You would agree, however, that none of that information has been condensed and disseminated for review to the rest of the scientific or medical community, has it?

A The -- the data from all the states that have DRE programs is provided to the IACP at a national level.

Q Which is a police fraternity. Correct?

A It is presented at conferences.

Q It is a police fraternity. Correct?

A The IACP, International Association of Chiefs of Police, that is the sponsor and the coordinator of the DRE program is obviously a police agency. But that doesn't stop it

from gathering and disseminating information.

Q So that information that you provided was published and peer reviewed. Is that what you are telling me?

A The information I provided on the Arizona stats?

Q When you testified yesterday, the information you testified about, your findings in Arizona, your specific findings in Arizona, have they been published or peer reviewed?

A I don't know. Not by me.

Q Well, they are your findings, are they not?

A No, they're not simply my findings. They're for the State of Arizona. They're provided to the national database on DRE results. I know that there have been a number of individuals at different national conferences that have discussed the results. I'm not at every conference.

Q A number of people at a conference talked about it. That's peer review and publication?

A My answer to your question is I don't know if they've been published. I don't know.

Q You testified, and at least you said five times, for the DRE program. You are involved in the steering committee in Arizona. You are involved in giving advice on the program. And you don't know if your own research has been published or peer reviewed? Seriously?

A To answer your question, you asked me if I was aware of whether or not the Arizona data that's been provided on a

national level and combined with all the other states that have these programs, if that information has been published anywhere. I told you that I had not participated in that. But I didn't know if anyone else had done that. I don't know.

Q You don't find -- don't you think you would be one to know?

MR. DAGGETT: Your Honor, how many times do we have -- can we approach, please?

(Whereupon, a bench conference follows:)

MR. DeLEONARDO: Go ahead.

MR. DAGGETT: He asks and answers this at least 20 times. If we don't move this thing along -- he has only got through one section -- we are going to be here for a month.

MR. DeLEONARDO: If she would answer my questions, we would --

MR. DAGGETT: She is not going to answer the question.

MR. DeLEONARDO: She is still -- well, I know. And that's the point I am making, David.

MR. DAGGETT: Then you have made it.

MR. DeLEONARDO: Tell her to answer the question.

MR. DAGGETT: She has answered the question.

MR. DeLEONARDO: Okay. Well, Your Honor, I believe I am entitled to cross.

THE COURT: I agree, but let's move it along.

MR. DeLEONARDO: I think I made the point.

THE COURT: Well, I mean, I think can discern if somebody is going to answer the question.

MR. DeLEONARDO: Right. Very well.

(Whereupon, the bench conference was concluded.)

BY MR. DeLEONARDO:

Q Do you agree, Ms. Spirk, your credibility is certainly at issue when you testify in these matters, is it not?

A Do I agree that my credibility is important, as an expert witness?

Q Yes.

A Of course, I do. Yes, I do.

Q You do. And you uphold yourself to the higher standard professionally in credibility, in being truthful and honest and disclosing things. Correct?

A I do.

Q And you are doing that not only professionally, but personally. Correct?

A Yes.

Q And you have never had an instance where anyone has accused you of being less than candid, have you?

A I've probably had a number of incidents where --

Q Nothing significant, though. Right?

A (No response.)

Q Have you had anything significant where someone really accused you of having done something to someone?

A Yes, I have.

Q You have.

A Yes.

Q What was that?

A I had an incident in 2005 where, at my place of business, we had done a conference. And at this conference it was grant funded. And we had served lunch at the conference. My superintendent of the four laboratories, who was the individual who had gotten the grants, had worked with me, tutored me on how to set up the conference, because I had not done one of these before, and had helped to select the menu.

Ultimately six months later, there were criticisms that food was not to have been purchased with grant money. And there was an investigation for the better part of a year. And it was horrific. And I ultimately lost my job. I appealed it. It was the most horrible thing I ever went through in my life. I was reinstated. There was a council. I was made whole. I was apologized to. The department was reprimanded. And I was provided with my position again.

And that was the thing that pops in my mind, as far as something I've dealt with.

Q So in that particular instance, everyone in your department said that you did in fact know that you could not

provide food for the conference. Correct?

A No, that's not correct.

Q Well, that is certainly the report that was generated from internal affairs to your own department. Isn't that correct?

A I have never seen a report from an internal affairs that said everyone in my department said that I knew that we were not supposed to do that.

MR. DeLEONARDO: If I could have this marked as Defense Exhibit No. 2.

THE CLERK: Defendant's Exhibit 2.

(The document referred to was marked for identification as Defendants' Exhibit 2.)

BY MR. DeLEONARDO:

Q I am going to show you what I have marked as Defense 2, a 13-page report from Sergeant Jack --- from Internal Affairs, the Arizona Department of Public Safety. Is that familiar to you? (Handing document to the witness.)

A (Examining document.)

This doesn't look like something I've seen before. But I'm not unfamiliar with the general content of it.

Q Well --

A This is dated July 29, 2005. So this is a document in the very early stages of this.

Q Well, you didn't exactly describe the incident completely, when you were just explaining it, did you?

A I believe that I did describe it completely.

Q Well, you said it involved an issue of the fact there was a misunderstanding about food. Correct? That's what you basically said.

A I don't know if I -- did I use the word misunderstanding?

Q Well, you said that you didn't understand how to set this thing up. And you set it up and provided food. And you weren't supposed to. Is that a fair summary?

A I don't think that's as complete as I described it. I said that it was a grant-related training --

Q Okay.

A -- that I had not conducted one of these before, that I worked with our laboratory superintendent, who had obtained the grant, that he was very familiar with this, that he gave me instructions on what to do concerning the food, and that I had followed them.

Q Okay. Now, in that report, your boss's boss was interviewed. Correct?

A I don't know who you mean by my boss's boss.

Q Well, take a look at the names on the first page. Your boss's boss. Right?

A Can you give me a name, please?

Q Tom Griffith.

A Yes. That's the individual I'm talking about. That was the person who obtained the grant.

Q Right. That is the person that you said told you could do it. Correct? And he said he never told you that. Correct?

A Yes, that's correct.

Q Your boss also was interviewed. Correct?

A And who are you speaking of?

Q You don't know who your boss was in 2005, Mr. Bob Burris?

A Yes, Mr. Burris.

Q He said you knew you couldn't do it. Correct?

A Is that in here? I would be surprised if that was in here.

Q Absolutely. You can take a look.

A All right.

Q You also -- the division budget analyst said you were told. Correct?

A Would you provide me with a name, please?

Q Sure. The division budget analyst was Ms. Mary Stark.

A Can you show me in context where she's saying that?

Q I can look -- if look at page three, "Ms. Spirk said she did not recall the e-mail from Ms. Stark reference to not

purchasing food or beverage. Ms. Spirk said the e-mail she does recall from Ms. Stark clearly shows how to buy food and cover it up. Ms. Stark said she sent this e-mail in response to the first contract that had mentioned that coffee would be provided. Ms. Stark said she never told Ms. Spirk to buy food or how to get around it. In fact, she told her a couple times she could not buy food and beverage with state monies."

Isn't that what it says?

A Excuse me. I'm catching up with you here. Yes, that appears to be correct.

Q In addition, apart from that issue, okay, you specifically had another issue at this conference, did you not?

A The other issue that I believe you're referring to is in addition to providing lunch at the conference, which was the initial incident that they were looking, it then morphed into there was a hotel room that was not being utilized, because we had an extra room. And I had stored baggage in there. And I had entered the room.

We also had --

Q Well, let me hold you right there. All you did was enter the room?

A I did not stay in the room. I had entered the room. And on the, I think it -- this has been a long time ago -- I think it was the last day, I had taken a shower in the room. I did not stay in the room. The room was already paid for. And

we had a credit for a free night of the room, in addition to the room already being paid for.

Q Is it not true that when you were first confronted by the sergeant about the room, you said, "I never even got a room key"? Is that correct?

A I -- I would have to look at the transcripts to figure out exactly what was said and when.

Q You can. Page seven.

A (Examining document.)

Q That is where they lodged the allegation of dishonesty issue. Is that correct?

A You'll have to -- I'm looking at page seven. Can you please tell me what paragraph?

Q "Ms. Spirk said" -- asked about the room key.

A Which paragraph, please?

Q The very -- this would be -- well, I will show you one here. The --- interview with Ms. Spirk.

"Now it wasn't really a room car, but it was some kind of car, as I was able to get Dr. --- on the phone, went over here. I had reservations for myself I think for four nights, which I've always intended it would just be myself. The bottom line is, the next two nights I stayed with someone else ---. And the following night I went to my house. But in reality, I, by my accountability, I never really stayed there."

Correct?

A Yes.

Q "Did you use state money to get yourself a room at the hotel?"

You said, "No."

Correct?

A Yes.

Q You then, on page nine, "Investigator. So did you have to sign anything for your key or did they just give you a key so you could get into her place?"

And you responded, "I think I did have to give them a credit card. I don't remember signing anything. But I think I did have to give them a credit card. You know, it was kind of a typical check-in time thing."

The investigator then asked you, "If nobody stayed in that room, why did the department pay for that room?"

And you responded you did not know.

Correct?

A Again, I'm not able to follow you. If you're --

Q In the middle of page nine.

A And the paragraph, please?

Q The one that says "Investigators."

A You didn't read that. Oh, okay. I'm sorry. And you're asking me if I see what you just read to me?

Q Correct.

A Yes.

Q Is that correct?

A Yes.

Q Now at the bottom of that, the investigator asked you specifically, did he not, "Did you ever go into this room, this 2130 room?"

Correct?

You responded no. Isn't that true?

A I'm not caught up with you. Now which paragraph are you at?

Q The very bottom of that page nine.

A Yes.

Q So you said something to that investigator that was not true. Isn't that correct?

A I'm pausing with my answer, because this was -- I'm trying to think a succinct way to say this. This was seven months after this had happened. And I thought I was coming in to talk about buying the food, which I was prepared for, I understood. And then they started to ask me about when I had gone in and out of a room.

I really did not remember the incidence of it. I had not slept for several days before this. I had never spent the night in the room at the hotel. I was completely found absolutely, unequivocally innocent of any of these charges.

Q My question was --

A I think this is relevant.

Q My question was -- well, you said that. My question was, did you tell the officer at that point something that you have said to us was not true?

A What I said to the officer was, at the time, with no advance warning, no opportunity to think about things, that I felt was accurate. With further recollection later in time, the more I thought about it, I realized that I had stored some things in the room and that I had in fact spent a very little time in there. I never slept in the room. I never went in the room.

The reason the department paid for the room was not for me. It was because we had an instructor from Memphis that for family emergencies was not able to make the conference. And the room was prepaid.

Q Well, that is interesting, because if you could go back to page six -- if you need, I will point it out --

A I do need you to point it out specifically.

Q We are going to be working down at the bottom half of this page.

A All right.

Q Okay. When you -- when this originally happened, when you originally found out that this had become the issue, you actually knew that was occurring prior to that interview. Is that correct?

A I'm sorry. Repeat the question.

Q Prior to the interview -- you just went into great lengths about how it was just unexpected and you misspoke. Correct?

A Yes. I had had no preparation for that aspect of the interview. yes.

Q But you had already -- I'm sorry. Go to the second on page eight.

A We're on page eight?

THE COURT: Which page, Mr. --

MR. DeLEONARDO: I'm sorry.

BY MR. DeLEONARDO:

Q On page at the very top.

A All right.

Q When it was discussed with you that there was a problem, that financed realized that this room had been paid for by -- that it was in your name, you said that the hotel must have messed up, because you were never in the room. Isn't that correct?

A Would you like me to read the second paragraph and say if that's correct? I don't understand what you're asking me to agree with.

Q I am just asking you, is that correct? Isn't it true that when this initially came up, your first response was that you hadn't stayed in any room, in fact the hotel messed up? Isn't that correct?

A This is in 2005, 2006. It's now 2010.

Q This horrific experience?

A I don't remember the detail at which you're asking me to respond. If you would like me to read this paragraph and say whether or not it's accurate or not --

Q Sure.

A -- I can attempt to do that.

Q Absolutely.

A But I don't have specific recollection.

Q Read the second paragraph on page eight.

A I don't have a problem with the second paragraph. That seems to be accurate.

Q And the second paragraph was you were blaming the hotel, because you never had a room.

A I still stand by the concept, if you'll allow me to explain.

Q Yes.

A We had to prepay. We had, I think, approximately ten instructors from all over the United States and Canada that came. We were required to prepay for the lodging for them, which we did with a check from the department. One of the instructors had a family emergency -- I think it was from Memphis-- at the last minute and was not able to attend the lecture. Other instructors took over his material, and the conference went on.

But we had a hotel room that was prepaid for, that there wasn't anything we could do about. We had already paid for the room. And they were not going to refund it. That was the room in which I never once spent the night there. All I did was stick my laptop in there, so I didn't have to drag it around. And on the last day, when I had brought my children over to swim in the hotel pool, which I was told I could do, I took a shower in the room. That was all that happened.

The room was prepaid. Also, the first night that I was there, because we had had so many rooms, the first night we didn't get charged for, because as you pay for rooms, so many rooms equals a free night, additional rooms equals a free night. And we had accrued a free night. So there was one free night. And I don't remember at this date -- there were additional nights that were picked up by the department, but not for me, for the instructor that --

Q So you didn't think you did anything wrong.

A I know that I did nothing wrong.

Q Okay.

A I know to this day that I did nothing wrong. I knew at the time --

Q Can we --

MR. DAGGETT: Your Honor, I am going to ask that she be allowed to answer the question.

MR. WELLS: I think she is allowed to answer the

question.

THE COURT: Yes. I think she is simply answering the question.

MR. DeLEONARDO: Okay.

THE WITNESS: I think it is a very important question. And Your Honor, I think it is important that you know that I absolutely from day one to this day have a completely clear conscience. My job is critically important to me. My ethics are important to me. I was found to have been completely innocent and wronged by this process. I was compensated financially. In addition to back pay, et cetera, I was given a settlement, because of all the anguish and agony that I went through I was reinstated in my position. I was provided the back pay. And I was given an amount of cash that I'm not able to disclose, because that was part of the agreement.

That would not have happened, if I in fact had engaged in anything inappropriate.

BY MR. DeLEONARDO:

Q Let me ask you to go to the middle of page ten. The investigator said, "Just a second ago, you told Sergeant" ---

A I'm sorry. I'm not with you. And which paragraph, please?

Q Third paragraph down. "Just a second ago, you told Sergeant --- that if he checked with the hotel, that it

wouldn't show that you entered the room. Then after we sit here and we discuss and talk about clouding the issue, it dawns on you that you may have walked into the room. But now you can't explain to him why you had a key and why you walked into the room."

Ms. Spirk responded, I quote, "I can't explain it." Ms. Spirk said, "If it makes it easier at this point in this whole mess, if this makes it easier for the department, if this allows this thing to go on, and I think I used poor judgment in this whole thing. And it's going to go -- and if it's going to make this go away, I'll pay for the room."

Isn't that what you said?

A Absolutely.

Q You also then, if we go down, after you said it was never going to show that you entered the room, investigators then said -- the second paragraph from the bottom -- "Did you leave personal belongings in that room there every day?"

And you responded, "There may have been some toiletry things, yeah, like a makeup bag or something."

Correct?

A Yes.

Q Go to page 11, please.

A (Witness complies.)

Q You then said, the paragraph at the top, "I wasn't sleeping there. I didn't think it was going to affect our bill

one way or the other. That's what was in my mind and heart. If you guys want me to say it was poor judgment, I'm guilty."

Correct?

A Absolutely.

Q Well, that is certainly different than what you are telling us on the stand today, that you had a guilty conscience.

A I don't think it's any different.

Q What?

A I don't think it's any different at all. I said I didn't think that this was going to affect our billing one way or the other. I didn't sleep there. I think this is absolutely consistent with what I've told the Court.

Q The investigator in the next paragraph then says, "So if I go to housekeeping now at the hotel, they wouldn't have had to clean that room at all for the four nights and four days."

And you responded, and I quote, "No. I took a shower there in the morning."

Correct?

A Exactly what I had told the Court. I took a shower there in there one time.

Q Okay. You then say, you go three more paragraphs down, and it starts with "Investigators," and I quote, "Why did you keep the key for five days then, if you knew you only had

one comp room, but you kept it for the full five days?"

And you responded, and I quote, "The reason that I did that -- and I think in hindsight that was poor judgement and not the right thing to do. And I'm sorry that it happened."

Correct?

A Yes.

Q Now at the bottom, the investigator was getting very frustrated for the different versions that he was getting. Do you recall that?

A It's not my opinion that I was providing different versions, that I was not answering honestly. I've already responded to you that this was an investigation six to seven months later. And if somebody asked you six or seven months later when you walked in and out of a room, exactly what you did, it's very hard to remember.

Q Well, you were not candid with them in the first interview, because you said you never got a room key. Correct?

A And my response to that was I didn't check into a hotel room, ask for a key, and then take possession of a room as if I were staying there. I didn't do it.

Q But you put your toiletries in there and you took a shower. Correct?

A I took a shower at the end. And as far as the toiletries go, it was the same laptop bag that I've got there

that I carried with me, that had a small makeup bag in it. That's all that was ever in the room.

Q Well, let me ask you, bottom of page 11, do you recall this? The investigator said, "During the first interview and at the beginning of this one, I asked you if you ever went in the room. And I said no. And I said, 'Well, if I go to the hotel and find out if it's ever been accessed,' well, now you started, 'Well, I've been in there once.' Now we're down to you've been in there several times. You're keeping toilet articles. You took a shower and all that. When I asked if you had ever been in there, why didn't you just tell me that, when you said first? You said, 'Well, no, I wasn't in there.' That was more of an intentional deception to us. Why didn't you just come clean right there and say, well, yeah, I possessed the room or I used the room off and on throughout the conference?"

And you responded, "I should have." Correct?

A I absolutely -- I should have.

Q Two paragraphs down you then said, "Oh, you know, I have -- I have no doubt that this just looks horrible, and that I look like this dishonest, horrible person. And I'm ashamed to be part of this whole thing. It's not a normal way that I work and have done my life. You know, this whole thing is just a situation where I think I used poor judgment. It wasn't so intentional a thing. It wasn't -- I wish in hindsight that I

had just been more up front about it."

Correct?

A Absolutely. That's absolutely consistent with how I felt then, how I felt now. If I had been able to -- the biggest issue for me was the fact that -- and we haven't even gotten into this -- our laboratory superintendent, who worked with me on this project, did not support me and was not honest and said that I had been told not to provide food. It created a horrific aura.

And that was the biggest issue I was dealing with, was our laboratory superintendent not being up front and honest about his involvement in this. That was what I was focusing on.

Q Okay.

A And when I was brought in, and this whole thing came up about when I had gone and not gone into the room seven, approximately seven, months later --

THE COURT: I am going to take a 15 minute recess. Can I see counsel at the bench?

Ms. Spirk, you can step down.

THE WITNESS: Thank you.

(Whereupon, the witness stepped down from the witness stand.)

(Whereupon, a bench conference follows:)

THE COURT: I think this horse has pretty much --

MR. DeLEONARDO: I'm done.

THE COURT: -- been beaten to death.

MR. DeLEONARDO: No, I was done. That was my last --

THE COURT: All right. I assume there is going to be some -- do you have anything else?

MR. CRUICKSHANK: Different topic.

THE COURT: How long do you need?

MR. DeLEONARDO: I haven't gotten into the studies yet. So --

THE COURT: Pardon?

MR. DeLEONARDO: I haven't gotten -- I am done with this. I am moving into the studies.

THE COURT: Well, how much longer do you need?

MR. DeLEONARDO: Maybe 45 minutes, an hour.

MR. CRUICKSHANK: I will cut my presentation to ---

THE COURT: And we hope to -- it is now ten minutes of 11:00. What I am hearing is this is probably going to take us up to at least 12:30, because the State is going to have some redirect.

MR. DeLEONARDO: Right.

THE COURT: So we may not be finished with this witness by the time we break for lunch.

MR. DeLEONARDO: Well, it's possible.

THE COURT: So what is it we are hoping to

accomplish after lunch?

MR. WELLS: Your Honor, I was initially concerned that Dr. Zuk had to be out today. He does not have to be out today. It is my understanding he can come in tomorrow morning for some period of testimony, as well. So it is not critical that we finish Dr. Zuk. He cannot go until, say, noon. We have to finish the overwhelming majority of his testimony today, including cross --

MR. CRUICKSHANK: That's fine.

MR. WELLS: -- because he cannot be here for later than --

THE COURT: He can't be here --

MR. WELLS: He can be here all -- he can be here for the rest of the day. And he can be here for, I believe, through at least the morning tomorrow, if that makes sense. So he can testify some time tomorrow, as well. But it is not going to be like Dr. Citek, where he can stay until going on 3:00 o'clock. That can't happen.

THE COURT: So how confident are we that we can finish Dr. Zuk, based on the amount of time we have spent --

MR. DeLEONARDO: Well, because we have Dr. Janofsky on Thursday coming in. And we definitely need to get him in on Thursday. So, I mean, I would think between this afternoon and in the morning --

THE COURT: Well, that's tomorrow.

MR. DeLEONARDO: That's what I am saying. Between the afternoon and the morning, I think we should be able to get done with Dr. Zuk. You know, do it first thing. If we start early in the morning, I mean, I think we can get it done. I mean, some areas I don't necessarily have to recover quite as much, because --

THE COURT: Are we going to spend a lot of time with him on voir dire on his CV and qualifications?

MR. DeLEONARDO: Not as much, not nearly as much. He is actually a medical doctor. So, I mean, those kind of things -- I mean, we are not going to get into -- I mean, I definitely think there are distinctions, but I think it is going to go more to weight and not admissibility of the opinion. So I don't think with him it is going to be the same thing. The only issue would probably be maybe in research, but I don't know if you guys are asking him --

MR. CRUICKSHANK: We are not asking that he be admitted as an expert in ---

MR. DeLEONARDO: So then I don't see us having a challenge as to his ability to testify. It will just go to weight. So it would only be probably a cross.

THE COURT: So tomorrow we intend to finish up with Dr. Zuk. And then we intend to move on to one of your experts.

MR. DeLEONARDO: Correct.

THE COURT: And what time constraints is that

expert?

MR. DeLEONARDO: Well, we have one that has to go Thursday or Friday morning. And so I know that was --

MR. CRUICKSHANK: : Yes. When we originally talked, it was he was coming from Texas. And --

MR. DeLEONARDO: I was talking about Janofsky.

MR. CRUICKSHANK: You are talking about Janofsky. Yes.

MR. DeLEONARDO: Yes. I think he said something about it had to be Thursday. Right?

MR. CRUICKSHANK: Right, because of patients.

MR. DeLEONARDO: So, I mean, I think if we can get him at least Thursday afternoon, then I think we have some flexibility as to Friday or if we do Monday or -- I don't know. I think Dr. Adams is --

THE COURT: Well, as of right now, Friday it looks like we are out.

MR. DeLEONARDO: Right. So I guess maybe we would look to Monday.

MR. WELLS: Monday, we weren't planning on being here.

MR. DeLEONARDO: Well, I know. That's what I'm saying. We only have Tuesday, and we have a witness Tuesday. So --

MR. WELLS: Well, we have two of our witnesses that

we haven't even gotten into yet either.

THE COURT: Well, I guess my big question is, assuming we go through tomorrow, and then the next time we are back here on this is Tuesday, are there any witnesses who cannot come back after Tuesday?

MR. CRUICKSHANK: I think as long as we get Dr. Janofsky on, we are okay. Right? Well, we might have to double check. Because Tuesday we have one coming from Buffalo that is only going to have Tuesday.

MR. DAGGETT: Tuesday was supposed to be --

MR. CRUICKSHANK: I mean, we can work it out. But I'm just saying this is the only thing. I think other than that --

MR. DeLEONARDO: So clearly, we are going to have to schedule additional days, definitely.

THE COURT: I don't think there is any question about that.

MR. CRUICKSHANK: Yes. I mean, I think it is -- I mean, I think it will be -- we have two witnesses who will be pretty much local. So, I mean, we can always finagle that, I guess. We have one coming from Buffalo on Tuesday. That is the only real constraint we have as an out-of-town person. So obviously we want to get Dr. Zuk done, because I know he is out of town.

MR. DAGGETT: --- from Texas coming.

MR. CRUICKSHANK: We did. He has moved back. He just moved back actually last week. So it makes it now a little more flexible for us. He has come back to Hopkins.

THE COURT: All right. I will be back in about ten minutes.

THE CLERK: All rise.

(Whereupon, a brief recess was taken.)

THE CLERK: Silence in court. All rise.

THE COURT: Be seated, please.

Recalling Ms. Spirk.

(Whereupon, the witness resumed the witness stand.)

THE CLERK: Please remember you are still under oath.

THE COURT: Mr. DeLeonardo?

MR. DeLEONARDO: Thank you, Your Honor.

BY MR. DeLEONARDO:

Q Yesterday you testified that the program originated essentially because officers in LA found themselves to be particularly good at diagnosing a drug person being impaired. Correct?

A No, that isn't exactly what I said.

Q All right. Well, tell me again. Maybe I -- maybe I don't remember correctly. Why don't you tell me exactly how it originated and why.

A There were officers at LAPD that interacted with a

number of drug-impaired drivers and individuals under the influence of drugs other than alcohol. They noticed with time that they saw similar signs and symptoms over and over again, when they received their toxicology confirmation reports back. They saw a high degree of consistency with certain signs and symptoms and drugs. I believe I used the example of the barbiturate balance. At that time, they didn't realize it was HGN, but they noticed that.

Because of that, they started to keep track of it and came up with a list of signs and symptoms that appeared to be consistent with certain categories of drugs. And that was really the inception of the program.

Q Was that -- is that really the reason it was created, just because they happened to start noticing this, or were they unable to get anyone else to do it?

A I don't know the --

Q Well, isn't it true that the reason it originally started was because they would go to medical people in the field. And they would say, "I can't diagnose somebody just based on that." Isn't that what they said?

A I don't know.

Q Well, it is in the manual, is it not?

A I don't know.

Q Well, let me ask if you agree with this. "Occasionally officers succeeded in having physicians examine

their low BAC subjects sometimes resulting in a medical diagnosis of drug influence. But medical personnel typically receive little or no training in the recognition of specific signs of drug impairment. As a result, many drivers, who almost certainly were under the influence, were not prosecuted or convicted. Two LAPD sergeants were instrumental in organizing a program to help police officers develop the skills needed to perform their own assessments of drug-impaired drivers."

Right?

A (No response.)

Q Would you like to see the manual?

A No. But your question is, do I agree with what you read?

Q Right. Do you agree that the reason the program started is because medical people basically were unwilling to look at someone and use the indicators and say that person is impaired by a drug and a medical condition?

A I don't think what you read to me equates to medical personnel who were unwilling. I think what you read to me is that they -- I can't quote it exactly, but they didn't have the expertise. They didn't have the training. I don't think it says that they were unwilling to consider it.

Q "Therefore, they often were unable or reluctant to offer a judgment about a subject's condition."

A I think being unable or reluctant is different from saying they were unwilling.

Q So -- okay. Medical personnel, if I understand that correctly, is that the officers then took that task on themselves, correct, to make the diagnosis?

A I don't know that they were making a diagnosis. They're not physicians. I think what they were doing is exactly what I described. They noticed certain common signs and symptoms. That is not a diagnosis of things that -- signs and symptoms that were consistent with the toxicology result of certain categories of drugs. It is what it is. It's really rather simple.

That's different from a physician making a diagnosis. That's two different things.

Q Step one is whether a subject is impaired. Correct? That's the first thing a DRE looks at. True? Whether they are impaired at all.

A I think the whole evaluation is looking at signs and symptoms that speak to the impairment.

Q There are three questions in the manual that ask the DRE to answer. Is that correct?

A Yes.

Q One is whether the subject is impaired. Correct?

A Yes.

Q The second question is whether the impairment is

caused by drugs or a medical condition. Correct?

A Yes.

Q That second step requires them to determine that there is not a medical reason that is resulting, that is causing the symptoms for the impairment. Correct?

A Yes. Part of the evaluation is to be on the lookout for an alternative medical explanation.

Q So they are saying no, this person doesn't have diabetes. What I'm seeing is as the result of a drug. Isn't that what they are saying?

A Yes.

Q And that is not a medical diagnosis?

A No, it's not a diagnosis. A medical rule-out and a medical diagnosis -- these are probably questions that would be appropriate for a physician here today. But there's a different between a diagnosis, where you're looking at different signs, symptoms, conducting tests, and making an opinion about a medical malady that a person may have.

What the officers are doing are looking at very specific signs and symptoms and seeing if they assist in the prediction of a certain category of drug. The medical rule-out is, is there something overt, is there something such as unequal pupil size, is there something like an admission of diabetes or epilepsy. So that officer can immediate say I'm concerned that there may be an alternate medical explanation

for this. And then, primarily for the benefit of the subject, can they get the assistance that they may need.

That's not the same thing as doing a diagnosis of something that's wrong with a person. It's different.

Q Okay. As far as the studies yesterday, you said -- and I wrote this down -- "Any time I'm going to consider a program, I ask: Does it answer the question it is supposed to? And you want to make sure it is free from bias." Correct?

A That's essentially --

Q Do you recall saying that?

A Essentially, yes.

Q And you are aware in the field of science that there is a concept called confirmation bias. Correct?

A (No response.)

Q Right?

A I guess I would ask you to define what you mean by confirmation bias.

Q Okay. I will explain that and ask if you agree. Confirmation bias is a form of tunnel vision. And it can happen in one or more ways. People seek out evidence to confirm their hypothesis. People search their memories in bias ways preferring information that tends to confirm a presented hypothesis or belief. And people also tend to give greater weight to information that supports existing beliefs than to information that runs counter to them. That is to say, people

intend to interpret data in ways that support their prior beliefs. Empirical research demonstrates that people are incapable on evaluating the strength of evidence independently of their prior beliefs.

I am asking you, is that a fair definition of confirmation bias?

A I think so, yes.

Q And that is the bias that you want to make sure, when you are looking at a program, does it really answer the questions it is supposed to and is it free from bias. Correct?

A Actually, that's part of bias. I believe that you can have bias in other ways.

Q Oh, absolutely. But that is certainly part of the bias that you would be concerned with. True?

A Yes.

Q All right. Now let's turn to what is referred to as the Bigelow study. And I think the Court has that in front of it. It is entitled, "Identifying types of drug intoxication, a laboratory evaluation of subject and examination procedures." Is that correct?

THE COURT: Which exhibit is that?

MR. DeLEONARDO: I apologize, Your Honor. I am not sure which exhibit it was. But I can come up and pull it out.

THE CLERK: Exhibit 10.

BY MR. DeLEONARDO:

Q Now, the questions that we discussed, and we went over that the question it is supposed to answer is whether the subject is impaired -- two of them, initially. Second, whether the impairment is caused by drugs or medical conditions. All right? Those are the first two questions a drug recognition expert has to answer. Correct?

A I guess I'm having a slight problem with -- you make it sound like -- they go through the 12-step evaluation. Those are the big picture questions that they're supposed to answer. But it's not that they look at the individual and then within a matter of seconds they're supposed to say whether or not they're impaired. I'm having a hard time --

Q Ms. Spirk, I am not asking that. I am saying at the conclusion of their evaluation --

A All right. Thank you.

Q Okay?

A Yes.

Q -- they are asked to answer those three questions, when they render an opinion.

A Yes.

Q Correct?

A Yes.

Q And so if you are evaluating a study, as you said early on, you have to make sure it is answering the question it is supposed to ask and that it is free from bias. Correct?

A Yes.

Q And I am asking you, does the Bigelow study, does it answer those questions as to whether they can do it? And is it free from confirmation bias? Does the Bigelow study, the Johns Hopkins study, does it satisfy your two criteria for what would be necessary for it to be accepted?

A I have a clarification question. You said the Bigelow study --

Q I asked my question --

A I can't --

Q And it is pretty direct.

A I'm unable to answer your question without clarification.

Q What is your clarification?

A You said the Bigelow study, which to me is the 173 LAPD field study.

Q That was not authored by Bigelow. Correct?

A The study, the Johns Hopkins study --

MR. DeLEONARDO: Your Honor, can I let her see the exhibit, at least so she can remember what study was done at Johns Hopkins?

THE WITNESS: -- was by Richard Compton.

BY MR. DeLEONARDO:

Q Compton was the LA field study. Correct? I am asking you about Bigelow, which was done at Johns Hopkins

University, that elite university, the one that you testified about yesterday.

A All right. I'm sorry. I wanted to make sure that we're discussing the same study. So we're talking about the Johns Hopkins study. All right. Thank you.

Q Okay. Back to my question. Does it answer the two critical issues you say have to be there? Does the study show that DREs can determine between unimpaired and impaired? And does it determine that it is free from bias? Does that study have those two elements that are necessary?

A Well, if you look at the conclusion of the study, it identifies correctly that 95 percent of the drug-free subjects were unimpaired. And if you look at the other conclusions that -- and again, I do want to point out this is with the high dose subjects, not the low dose. But they were correctly identified over 98 percent of the time as being impaired. And the correct category was identified over 91 percent of the time.

So in terms of being able to make a correct identification of impairment, it appears that this study was able to do that.

Q Okay. What about as to the second component, confirmation bias?

A In this particular study, there were four DREs that were involved. And my understanding from review of the study

is that they conducted their evaluations independently. They were not -- actually, it was an abridged DRE evaluation. They didn't even conduct the same level of contact with the subjects as they did in a standardized and systematic DRE, and that they did not communicate or speak with one another during the evaluations.

Those would certainly be safeguards against bias.

Q Okay. The third component that the DRE is supposed to answer is whether or not, based on the impairment they find from drugs, whether or not the person can operate a vehicle safely. Correct?

A Yes.

Q Is that also confirmed by the Bigelow study?

A I would say of the three, that that is going to be the weakest of the three. Because what's missing from this study that is present in the normal DRE evaluation is the whole concept of -- and this could be with the DRE, but most often it's not -- the first officer on the scene, the arresting officer, the one who documents the probable cause and the driving behavior, that element is not here in this particular study.

Q Okay. Well, let's break down now the study, now that you have answered those. The study, as we covered earlier, this is one of those that was not published and peer reviewed. Is that correct?

A This is a USDOT publication. It is a report. And I would agree that it has not been subject to what we discussed earlier, as the same type of peer review that you would get in a journal.

Q And the study also concedes that it doesn't answer the question of behavioral impairment. Correct?

A (No response.)

Q When you -- in this study, they say, "This laboratory simulation study does not present a direct test of the validity of these or related behavioral examination procedures for detecting and identifying drug intoxication in field situations." Correct?

A Yes.

Q And it is, in addition, that the DREs in fact were provided information and were allowed to interview. Is that not correct?

A My understanding of this particular study is that it wasn't the typical standardized and systematic study, and that the interviews were brief, and that the information and the interaction, of course, with the arresting officer wasn't present. So it was not as standardized and systematic as the real procedure.

Q Let me ask if you agree with this portion of the study. "Certain limitations of the present study should be noted. First, it is unclear to what extent the subjects

themselves, who are instructed to be cooperative, may have provided information aiding in drug identification. While subjects were told not to volunteer such information, raters were free to inquire how the subjects felt, had they ever felt that way before, had they ever used drugs that made them feel that way before. In this experimental setting, subjects may have been more revealing than when it occurred in a law enforcement situation."

These were people, were they not, Ms. Spirk, in this study that had a history of using the drugs that they were being tested for? Correct?

A That's my understanding, yes.

Q And so the officers were able to ask the person: Have you ever felt like you did before? Have you ever taken a drug that made you feel that way? Correct?

A Based upon what you've just read to me, yes. I would need to go through and read aspects of the study again myself. But, you know, assuming that what you've just read to me is correct, yes.

Q You would agree that someone who has had a history of taking a CNS depressant would know that they did not take a CNS stimulant. Is that fair to say?

A I think that's a very -- it's a very broad question. The effects of drugs have much to do with your attitude at the time. I think a good analogy is most of us have had an

alcoholic beverage now and then. You don't feel the same way every time you have a drink of alcohol, which is a central nervous system depressant. Sometimes it makes you happy --

Q That is because you are drinking the same --

A -- and giddy. Sometimes it can make you sad and morose. Drugs don't always affect everyone the same way every time they take it.

Q Absolutely. I agree with that.

A The other issue is dose. If the person is used to taking a certain dose of a drug and then they're administered a different dose, it can feel differently. So I'm unable to answer your question.

Q You gave me an example of someone taking a CNS depressant in two different situations and said they could feel differently. And I agree with all that. But you would agree with me that someone who smokes marijuana and then takes cocaine, they probably could distinguish that they feel differently than they normally do when they take marijuana, or they would realize that, yeah, I feel like I do when I get high.

Do you think that is a fair analysis of the study?

A I can only tell you that, generally speaking, I would agree with you. However, I reserve the right to say that it's absolutely dependent upon the individual. And it's certainly dependent upon the dose.

Q So if that is true, if a person can't even tell whether or not they have taken marijuana or a CNS stimulant, let's say cocaine, if they can produce such different results in different people, then how is the DRE distinguishing between them, if the person doesn't even exhibit a different sign and doesn't feel differently?

A We're not talking about signs that they exhibited. You asked me questions about how they felt, how the drugs made them feel. Those are subjective feelings. Those are psychological feelings.

Q If my pulse is elevated, my blood pressure is elevated, that is a very different situation than taking marijuana, is it not?

A Yes. Those signs and symptoms are different.

Q So the signs and symptoms would be things the person would be experiencing. Correct?

A Yes and no. You can have an elevated pulse and not be aware of the elevated pulse. There's a difference between a pulse that's slightly elevated and a pulse that's profoundly elevated.

These are very general questions that you're asking me. And I'm trying to answer them.

Q Well, let me be more specific. Cannabis, you generally feel relaxed. Correct?

A (No response.)

Q That is in your matrix. Right?

A Yes.

Q CNS stimulant, you feel excited. Correct?

A I can give you examples related to time course of the drug and dose where those things don't apply. There is a down side of a stimulant.

Q Let's move on to some other issues then. In addition, in this study the DREs were actually told things by the researchers that were accurate and they could rely on. True?

A That's my understanding, yes.

Q They were specifically told there was no alcohol, PCP, or LSD administered by anybody. Correct?

A yes.

Q They were also told that there were no combinations of drugs that were administered to anybody. Correct?

A I believe so, yes.

Q They were also told that everyone in there was normal and healthy. Correct?

A I don't recall that exact wording. If you could read it to me or I could look at it. But I don't have any reason to believe it's not accurate.

Q Okay. If you could turn to page, let's see, two, it talks about the subjects. Correct?

A Can you give me a paragraph, please?

Q Right under "Subjects."

A All right.

Q Participants were 80 normal, healthy, adult male volunteers between the age of 18 and 35. Correct?

A Yes.

Q And is it not true that that was part of the process here, because it says, if you look at the next paragraph, during this visit, when they evaluated the subjects before this, they were given a physical examination, including an EKG and a urinalysis screen for evidence of drug abuse. They were interviewed about their drug use history and trained on the psycho-motor tasks and subjective effective questionnaires used in the study.

Volunteers found to be without significant medical or psychiatric disturbances to be without substantial patterns of illicit drug abuse, to be taking no medication and showing adequate performance on these psycho-motor tasks -- that would be the field sobriety test. Correct?

A Yes.

Q They were allowed to participate. Right?

A Yes.

Q So one of the things that this study is supposed to do is distinguish between people who are medically impaired versus drug impaired. Correct? That's one of the things that you would want to see. Right?

A   Yes.

Q   This study, by its own admission, doesn't do any of that. True?

A   I agree with you that clearly the intent was to screen out individuals that had preexisting medical conditions. But clearly, that was a goal for the result of the study. They wanted to validate this procedure in a clinical, or near clinical, setting.

Q   Oh, I know what they wanted to do. I am asking you, though, that is not scientifically valid, is it?

A   I think it is. It depends upon the goals of what you're trying to study. If what they were looking at is, if they excluded these overt medical issues and they dosed people and then allowed the DREs to perform the evaluation or a modified evaluation and then looked at the results of the study, that gives certain information.

What they were doing here was controlling the variables. I agree with you that perhaps in a follow-up study, perhaps in another way, such as in the field studies, it is important to see if they can distinguish, I agree, between medical preexisting conditions and what would be going on in terms of drug and drug category predictions.

But in this particular study, the investigators chose to eliminate that variable. They wanted to have even a clearer focus on what could these officers do. I don't

necessarily find fault with that, especially in light of the fact that there were follow-up studies done in the field where that didn't happen.

Q Well, we will get to that. I promise you. I will give you a chance to talk about the field studies. I am asking you about this study. Okay?

It also only included people who had used marijuana within the past year. Correct?

A I believe that's accurate, but do you want to point it out to me?

Q Sure. Right under "Subjects." It says, "Weighing between 54 and 100 kilograms and who reported using marijuana within the past years." Those were the people included.

A Yes.

Q That's it. Right?

A Yes.

Q Now you would also agree with me that are issues -- and I don't want to get completely off on a tangent, but that drugs, as you said earlier, affect everybody differently. Correct?

A Somewhat differently. There are, of course, similarities, but --

Q Right. And in fact, you know, someone who is regularly taking a drug could take that drug and not exhibit all of the same symptoms as somebody who never takes a drug.

Correct?

A Or a lesser degree. And that's known as tolerance. Yes.

Q Very good. So in addition in this study, what is the concept of inter-rater reliability?

A Simplistically put, my understanding of inter-rater reliability, it has to do with the concept of when you go through an experimental design, do you have more than one individual as part of your process. Do you have -- in this particular program, would you have more than one DRE doing an evaluation.

Q Fair enough.

A Very basically. There's more to it than that.

Q That's fair. I think that's a fair description. And the reason that is done in science is to make sure that the results being obtained can be replicated by other people so there is more validity to it. Correct?

A Yes. And there is, you know, a phenomenon known as precision.

Q Right.

A Do you get the same data over and over again with a degree of reliability. But I should mention that's done when possible. In all experimental designs, it isn't possible. But --

Q Well, it wasn't done in this study. Correct?

A No, it was not.

Q Okay. Now this study also excluded any polydrug use. Correct?

A That's my understanding, yes.

Q In fact, it says, "The present study provides no information about detection and identification of intoxication. When multiple drugs have been taken by the same individual, such polydrug use, especially in combinations with alcohol, is widespread in field situations." Correct?

A I didn't follow you when reading, but I assume that's correct.

Q Is that correct? Okay. So again, it really didn't prove the points that you would need to be proven. Is that right?

A (No response.)

Q As you said early on, it needs to be able to determine that you can determine between someone unimpaired and impaired in the general population. Correct?

A Your inference is that because it didn't account for polypharmacy, polydrug use, that the predictions made on the drug categories were not valid?

Q Well, it only included people with absolutely no medical problems. Correct? It only included people --

A Well --

Q It only included people who could already

demonstrate they could adequately perform field sobriety tests. Correct?

A I didn't agree with your first assumption.

Q Oh, you don't agree it only included people with no medical problems?

A It was the way you phrased it. You said they were people with absolutely no medical problems. They did a --

Q They did --

A Not a comprehensive screen. You know, they looked for overt medical problems. Your statement was these individuals --

Q They did an EKG. I mean, they subjected them to that. Isn't that true?

A Yes.

Q I mean, that is a pretty extensive evaluation. Don't you agree?

A You asked me and I disagree that they were determined to be clear from any preexisting medical problems. I think that they did a cursory check to make sure these individuals didn't have any overt physical conditions. I absolutely agree with that. Did they put them through a rigorous physical to make sure that there was nothing preexisting? I don't think that happened.

Q They also only -- and they did three categories. Correct? And they gave them extremely high doses of those

three categories. Is that right?

A No, they didn't give them extremely high categories.

Q Okay. Well, maybe you don't agree with my term. But let's read what the study says. It says, "The drugs amphetamines, diazepam, and secobarbital were given in doses approximately three to six times the typically recommended therapeutic dose." Is that right?

A Therapeutic, but not what's abused on the street. Completely different --

Q But someone who is taken those drugs therapeutically, they didn't test the ability of being able to distinguish someone therapeutically taking it from someone who is taking six times the therapeutic amount, did they?

A The purpose of the study was not to identify individuals taking therapeutic concentrations of drugs. Those individuals shouldn't be investigated for drug-impaired driving. The concept was at levels consistent with abuse, are officers able to identify these individuals and properly categorize them.

The levels that they used were not -- I can't remember the words you used -- exceptionally high. They were --

Q Six times as high.

A They were appropriate levels for abuse.

Q So -- and I am not going to get into drugs and

therapeutic uses with you. We have already noted the pharmacology issues. I am not going to do that. But they also gave marijuana to reach the middle to upper range of doses typically achieved by occasional users. And it basically had them smoke an amount that would be to the medium to upper range. Correct?

A Would you read for me where you're quoting from?

Q Sure. If you go to page four, it talks about the drug administration. Correct?

A Yes.

Q In that first paragraph, if you look at the bottom, it talks about the dosing. Is that correct?

A (No response.)

Q It says, "For D-amphetamine, diazepam, and secobarbital, these doses are approximately three to six times typically recommended therapeutic dose." Do you see that?

A I do.

Q Do you see it also says, "The marijuana doses were selected on the basis of pre-testing as being in the middle to upper range of the doses typically achieved by the occasional marijuana user in the community." Correct?

A Yes.

Q So they tried to see what their levels were. And they jacked it up high. Correct?

A (No response.)

Q They took it much more than they normally would do. Right?

A All I can tell you is, based upon my own experience of toxicological testing for drug-impaired drivers, these concentrations -- and they dosed people both in low and high values, not just high values in this study. These concentrations are not exceptionally high. In fact --

Q Well, let me stop you right there. You are not sitting there and telling me that, based on concentrations, you can tell the effect it is going to have on the individual, are you?

A No.

Q Okay. I just want to make clear. So when you say that, you would agree with me that the study evaluated these particular people and gave what for them would be an extremely high dose. Isn't that what the study says?

A I don't think we have any real way of knowing. We know that these are individuals that have past experience with drugs. We don't know specifically what their experience is. We know that this exceeds the therapeutic concentration for the drugs. We know that.

As far as is it consistent with their past use, is it consistent with other individuals who abuse these drugs, my -- I don't think we know the answers to that. The only thing I can tell you is that these concentrations do not, are

not consistent with what we normally find in drug-impaired drivers.

Q So you are not willing to take the fact that when they say they pre-screen these people to determine what would be high doses for them, you don't think that is necessarily true. When they say, "We selected this on the basis of pre-testing," you don't believe that is accurate or you don't think they were able to do that?

A My consideration with what happened in this study, and I think it was the appropriate way for the study to be handled, is they did multiple times therapeutic. They administered both high and low doses to individuals. That makes sense to me. I understand that. I think it's appropriate.

My only small issue is that you're characterizing this as being typical of abuse levels.

Q Oh, no, no, no.

A All I'm telling you is that from the data that I've experienced, it's not.

Q Well, I agree with you. No, I am not suggesting that at all. It is individual to the person. Correct?

A (No response.)

Q I mean, what would be considered an impairing amount is different from one person to the next. I mean, I agree with you. Is that fair?

A Yes.

Q All right.

A Yes.

Q Now let's move on to the LA field study.

MR. DeLEONARDO: Which should be, Your Honor, I guess, the next exhibit. It should say on the front "LA field study."

BY MR. DeLEONARDO:

Q Now I think you had testified yesterday that this was actually done by Bigelow, as well.

A I think I did testify that. And I perhaps made a mistake. I think I had switched Bigelow and Compton yesterday. So my apologies for that.

Q This is also not a peer-reviewed and published document, as we defined that term earlier this morning, is it?

A Not as we discussed this morning. I agree.

Q So it has not been subjected to the kind of review in a journal or the kind of review that you would see in the normal scientific community. Is that correct?

A Not by an editorial board, no.

Q Now, again, let me ask you, the study was supposed to determine those three things. Right? You said, you know, what you look for in a study is, does it actually prove what it says it is going to prove, and is it free from bias. Correct?

A Yes.

Q Does this study do that? Is it free from confirmation bias and does it prove what you say it is going to prove?

A Well, we had the first study that was in a clinical setting at Johns Hopkins. And then what is typical is then to go into the field where the drugs are actually abused and to look at the data in that field setting. And they came up with four broad conclusions from the study.

And the conclusions had to do with, again, identifying drugs or not identifying drugs and properly categorizing them. And, you know, we can go over those four conclusions. But I believe that this study was appropriate. It was well designed. And it did answer those questions, yes.

Q So you say, first of all, the study actually did not even demonstrate the ability of the DRE to determine if someone was actually behaviorally impaired by the drug category so as not to be able to drive. It didn't do that, did it?

A In the field study, these were actual impaired drivers in the field, who were pulled over for some kind of probable cause or driving behavior. Their results were sent to a toxicology lab. The DRE evaluation was performed in between the driving behavior and the toxicology results. I guess I'm confused as to how you can say there was no opportunity or conclusion of impaired driving. This was essentially a normal, in-field DUI drug case.

Q Well, actually, it's not me. It's actually the study that said that. I am going to ask if you agree, and I quote, "There is no determine objectively whether the suspects were actually too impaired to drive safely. The fact that the drugs were found in a suspect's blood does not necessarily mean the suspect was too impaired to drive safely. Contrary to the case with alcohol, we do not know what quantity of a drug in blood implies impairment. Thus, this study can only determine whether a drug was present or absent from a suspect's blood, when the DRE said the suspect was impaired by a drug."

Correct?

A Yes. And I understand those comments. And those are overly to try to clarify the difference between alcohol, where we have volumes of studies, we understand the .08, and it's universally accepted. And you're absolutely correct in drugs, other than alcohol, we don't have concentrations similar to a similar .08 so we can make those kinds of knowledgeable determinations based upon either the concentration or the sheer presence of the drug in how that may unequivocably relate to impairment.

However, in these DUI drug cases that involve a DRE evaluation, there is some kind of driving behavior probable cause. There is some kind of original arrest procedure by the first officer on the scene. There's the performance of the DRE evaluation and then finally the corroboration of the tox.

That information together, not 100 percent of the time, but typically allows an opinion to be made about whether this is all consistent with and is this a situation of impaired driving.

Q But is it not true that you are therefore starting with the proposition that the arresting officer and the DRE officer were correct? I mean, that is the proposition you are assuming, is it not?

A I can tell you that when I review a case --

Q I am not asking that. I am asking in this study.

A When any toxicologist reviews a case --

Q In this study. In this study, aren't you starting with the proposition that the arrest officer and the DRE officer must have been right to find impairment, because they never would have been here to begin with?

A No, I don't think so.

Q Well, you just said that we can confirm their findings of impairment by finding it in the blood.

A If it's appropriate, if the DRE and the toxicology are consistent with, if they're appropriate with everything that preceded, then it makes sense. And it works together. I've seen --

Q You have already told me you can't tell based on concentrations what effect, if any, it is having on the person. Is that right?

A No, but I can tell if everything -- if they fit.

Q So again, what you are deciding that fits is you are taking an arresting officer and you are taking an DRE officer and you are assuming that when they say there was impairment and that it wasn't medical, you are assuming they are correct.

A I can tell you that I'm assuming the way they have recording the driving behavior, the way the DRE has recorded their evaluation, I am assuming that that's accurate, that it's not false.

Q And assuming that that is not --

A But I can tell you that as a toxicologist I have reviewed cases where the toxicology doesn't fit. It doesn't support. And I'm not always looking for a way for it to fit and to work.

Q I am asking you to talk about this study. I mean, I am trying to be respectful. I am asking you to talk about this study. This study says that the reason why they cannot really confirm that the DREs are correct is because they can't say whether the person was impaired in this study. Correct? I mean, that is what the study is saying. True?

A I agree that because there is simply less known about drug concentrations and driving impairment that, especially when this study was conducted -- and my understanding is the results of the drugs weren't quantitative. It just was the drug present or not -- that there was little

information to definitively say this is an impaired driver.

Q In fact, what the study says, and I am going to quote for you, "Ideally, a field study of this type would determine the training officer's ability to discriminate between drivers impaired by drugs and drivers not impaired by drugs. Accomplishing this would require obtaining blood samples from all the suspects initially examined by the officers, an impossible task," they claim. "Practical constraints limited our ability to obtain blood or urine to the group of suspects whom the officers felt were impaired by drugs other than alcohol. Thus, the study could not determine the accuracy of officers' judgement that drivers were not under the influence of drugs."

Correct?

A (No response.)

Q They were not able to determine their ability to distinguish. The study says that, does it not?

A And the concept is is because they weren't going to get a blood test on somebody who was determined not to be under the influence.

Q They had no -- isn't it true that what the study is saying is that all we did was confirm that there had been drug in the blood, not the findings of the DREs. It didn't validate their program or their opinion. Correct?

A I think it does validate the program. It's a

validation study of the DRE program.

Q They say it doesn't. And you are saying it does?

A I think it's a --

Q It's a what? What's that? What is it? The study says it doesn't validate it. Right? It says it doesn't validate it.

A I think what it's saying -- perhaps you can read it to me again. But I believe what it's saying --

Q Okay. I am certainly happy to. "There is no way to determine objectively whether the suspects were actually too impaired to drive safely. The fact that drugs were found in a suspect's blood does not necessarily mean the suspect was too impaired to drive safely. Contrary to the case with alcohol, we do not know what quantity of a drug in blood implies impairment. Thus, this study can only determine whether a drug was present or absent from a suspect's blood, when the DRE said the suspect was impaired."

A Thank you for reading that. That's helpful.

Q That is a very clear distinction, is it not?

A And this makes perfect sense. What that statement is clarifying is that unlike alcohol, where we understand the .08, even if an officer makes a prediction, he has the category right, the drug is confirmed in toxicology, whether it's a quantitative or qualitative, whether there's a number on the report or not. We know that we can say the program is valid in

that the DRE in X percentage of the time makes a correct prediction.

What can't be proven with this is whether or not ultimately these in fact are impaired drivers. And the reason for that --

Q Well, and that is important.

A And the reason for that is because we -- that is a case by case, where it has to go to trial. And the trier of fact has to look at all the evidence and decide whether or not it's an indication of an impaired driver or not. That's beyond the scope of what this program is capable of doing. But that --

Q So the scientific community --

A One more comment.

Q -- has no way to make a determination --

A I wasn't --

Q -- whether someone is physically --

A I'm sorry. I'm not done.

THE COURT: Let her finish. Let her finish.

THE WITNESS: And what the DRE does, and this is an important distinction, the DRE does have an opinion. They are law enforcement. They look at the driving. They look at all of this information. And they make an opinion about I believe that this is an impaired driving situation due to drugs. That is their impairment. They go into the courtroom. They

articulate that opinion. And they talk about it.

That's not what the study was designed to do. The study was designed to determine how often do they accurately make a prediction. And the study did that.

BY MR. DeLEONARDO:

Q Okay. You would agree that a substance could be found in the blood and not actually --- in the person's body. Correct? In other words, not impairing them in the least. But they could still have remnants in the blood. True?

A I can't answer that yes or no. I can answer it, but not yes or no.

Q All right. Let me ask you this: We talked about confirmation bias. Right? We talked about the need to make sure that the people who were rendering opinions were not biased. They were not able to fully interview the suspects in these cases. Correct?

A In the LAPD --

Q Correct. LAPD, the field study.

A -- study, yes.

Q They were able to interview them. Right? Talk to the arresting officer. Correct?

A Yes.

Q They were able to -- in fact, they not only did those things, but they also took the full DRE examination and discussed it with them at the time. Correct?

A Yes. My understanding is this was a normal DRE evaluation situation that you would find in the field.

Q They actually even had access to their prior criminal records. Is that correct?

A I -- that may be true. I don't know.

Q I mean, it was actually part of the -- there was an attachment to this, was there not, that actually talked about -- that was one of the items that was obtained. Correct? The criminal record.

A I don't have the study memorized. You could show me something, and I can comment on it. But I don't have a specific recollection of whether that was there or not.

Q I guess the Court can look, can find it. It is a small point for me.

Essentially, then, the officers had all of that information in rendering their opinion as to those questions. Right?

A Yes.

Q So an arresting officer, if the person tells them -- say the arresting officer tells them: I found drugs in the car. I found cocaine in the car. Would you agree with me that in that situation, that the kind of thing the scientific community would call confirmation bias?

A No, I don't agree with you.

Q So you believe that the DRE, who finds out there is

cocaine in the car, and then maybe the arresting officer says that it came over the lane a couple times. You don't think that it is more likely that a person, when evaluating them, would look for signs and symptoms that support a CNS stimulant?

A That goes against the training. That goes against the program.

Q I understand that the standard says not to do that. But what I am asking you is, in the scientific community, would that be considered a really major source of confirmation bias?

A If an investigator was putting a study together, and there wasn't an existing DRE program, would they perhaps attempt to put something together that didn't have those kinds of issues in it? I think it's likely that they would. But this is an existing program. Part of the criminal justice community that has an agenda, has a --

Q Has an agenda.

A -- has an appropriate agenda, the agenda is to identify drug-impaired drivers and to make predictions about what drugs may be present and to have that ultimately confirmed by toxicology. It's an appropriate agenda. An agenda doesn't always have to be a negative term.

Q Again, I am going back to the study, if we could stay with the study.

A Yes.

Q I asked you --

A And your question to me was, I believe, did --

Q Let me just reask my question.

A Certainly.

Q As to the study, would the scientific community consider this study to be flawed because of the fact that it has a major source of confirmation bias?

A Again, you're acting as if -- and I can't answer you yes or no. You're acting as if this was a scientific study put together by a scientific group to answer a question. It's not. It's an existing program that was after the fact looked at scientifically to see if it was effective and it was capable of answering the questions it sought answered.

And we're looking at a program that's in existence. There is no way for the DRE program to work without acknowledging that there's some kind of probable cause, some kind of driving behavior, some kind of documentation from whoever was first on the scene.

Q Ma'am, I am asking you about the study now. I am not asking you about what happens in the courtroom.

A This is -- this is normal. So there is no way --

Q I am asking you about the study.

A I don't believe that the scientists who evaluated this program, to specifically answer your question, looked at it and said: This program has no value because there is the presence of confirmational bias.

Q I am asking you -- I am trying to ask a specific question. Okay? As far as scientifically valid research, would it not be fair that the scientific community would not consider this study to be scientifically valid because of the extent of the confirmation bias that is in it? I am not asking you about what happens at court or the fact that they did it to try to validate themselves. I am asking you this study.

A I think the best way that I can answer this is that it isn't scientifically an ideal situation. However, I've talked to many, many scientists, who have looked at this information, looked at this data. And I have not heard a single one say that the study is invalid, the data is invalid, the confirmational bias is so untoward that it negates the value of the study.

I've not heard a single scientist, Ph.D., physician, et cetera, suggest that it negates the value of the study. I think it is a consideration. It's worthy of discussion. I don't think it negates the value of the study.

Q And again, these are people that you are in the forensic field that do this interpretative toxicology, correct, that you are referring to?

A No, not exclusively.

Q Were you provided with a report from Dr. Janofsky from Johns Hopkins Hospital?

A I believe I did see a copy of that, yes.

Q Okay. Well, he certainly has an issue with it, doesn't he?

A I don't -- you know, I did read the report, but I don't remember all the specifics in it.

Q You got a 37-page report from a person at this elite university, who is in th is field, who said this study is seriously flawed. And you can't really remember the details of that?

MR. WELLS: Objection. Asked and answer. How many times does he have to ask the same question over and over and over again?

THE COURT: Sustained. Sustained

MR. DeLEONARDO: Very well.

BY MR. DeLEONARDO:

Q Let's go to another problem with this study. Okay? You would agree with me, would you not, that PCP produces very pronounced signs and symptoms in a person who has really ingest PCP?

A Typically, yes.

Q Probably of all the drug categories, I mean, somebody who is on PCP, that is pretty obvious to pretty much everybody that this person really messed up. Right?

A PCP is no longer one of the drug categories that's part of the dissociative anesthetics. It's not its own category. But I --

Q But it was at this time.

A Yes. And I agree that it is a drug that causes distinct signs and symptoms.

Q So first of all, out of 173, do you know how many admitted that they took the drug that the officer said was in the person's -- that the person was impaired by? Do you know how many times?

A No.

Q And do you know how many times people were found to be under the influence of PCP, that that was the diagnosis, as opposed to the other categories, which can be a little bit more difficult? Do you have any idea?

A You know, I've certainly red the study in detail. I don't remember, though, no.

Q Well let me see if this refreshes your memory. And I am going to quote from the study. "PCP, which was detected in over half of the subjects, was detected in the blood 92 percent of the time that the DRE said that the suspect was impaired by it. This is not surprising given the marked and unique behavioral symptoms it produces. In other eight cases did the blood test fail to detect PCP, when the DRE had indicated the suspect was impaired."

Right?

A What's the question? I'm sorry.

Q Well, you didn't recall. I am asking you, did that

job your memory that over half of these cases involved PCP, that produces very obvious signs of impairment?

A Yes, I agree that you just read to me a portion of the study that addresses that.

Q All right. So how did they do in the other categories? If we set PCP aside and this 90 percent that is pretty obvious, how did they do in the other drug categories? Can you tell me that?

A No, I don't have it memorized. You can certainly provide me with the document.

Q All right. Let me see. I will quote, "The blood test detected marijuana 78 percent of the time that the DREs identified it as present, failing to find it 22 percent of the time."

Do you know how many times the person admitted or they found marijuana on the person?

A No.

Q You would agree with me that marijuana can stay in your system for some time, even though you have not been ingesting it at any time recently. Is that true?

A The inactive metabolite can, yes.

Q Correct. And so you can actually have marijuana detected in your blood and it not be acting on your system in the least. Correct?

A Say that again.

Q You can have marijuana in your blood and it not be acting on your system in the least. It is possible, is it not?

A Yes.

Q CNS depressants, these drugs were found in the blood only 50 percent of the time that the DREs claimed they were present. Is that a correct fact?

A I'm unsure how to answer this. You're reading me things from the article and then asking me if it's correct.

Q I am asking does that jog your memory, that that is in fact part of the study? I am just establishing this is part of the study.

A I don't have specific recollection.

Q The study is right in front of you, if you would like to confirm. I mean, this is the study you testify on frequently, is it not?

A I absolutely do. Do I have this memorized? No, I don't. Would you like to tell me what page you are on?

Q If you were to go back to -- if you were to go to page, I think it is, 16. Let me double check. Page 21.

A Twenty-one? This document ends at 17.

Q Well, then there is a problem with that. It is not a complete study. I thought I had all the pages in there.

MR. DeLEONARDO: Well, then I will mark mine Mark it Defense Exhibit, I guess, No. 3, Madame Clerk?

THE CLERK: Yes, sir.

(The document referred to was marked for identification as Defendants' Exhibit 3.)

THE COURT: Is this the same exhibit as --

MR. DeLEONARDO: Apparently that was -- it doesn't include --

THE COURT: Wait a minute. Wait a minute. Wait a minute.

MR. CRUICKSHANK: I don't know if we are looking at the same studies.

THE COURT: The LA Police Department drug detection procedure, field evaluation?

MR. DeLEONARDO: It should be --

THE COURT: My Exhibit 11 --

THE WITNESS: No. This is whatever you pointed at me here.

MR. DeLEONARDO: Oh, I apologize.

THE COURT: Exhibit 11 has 30 pages.

MR. DeLEONARDO: I showed you the wrong one.

THE COURT: Thirty-one, I believe, actually.

MR. DeLEONARDO: I apologize. Well, that's okay. I will go ahead and leave it marked for identification.

I was referring to the LA field study that should have all of the -- it actually should end -- it is a 47-page

document. And then there is research notes that are attached to it. I don't know if Your Honor has the same --

THE COURT: If we are talking -- I have a document consisting of 31 pages, Exhibit 11.

MR. DeLEONARDO: That is not what I would term the complete document. So I am going to admit the same thing, but it has all the pages.

THE COURT: All right. So No. 10 is the incomplete. And what will be --

MR. DeLEONARDO: I am going to submitting a complete version of that, Your Honor.

THE CLERK: Defense 3.

THE COURT: All right. State's Exhibit 11 is, you indicate, not complete. And Defendant's Exhibit 3 --

MR. DeLEONARDO: Yes. This would be Defense 3. It should be the study. And there is a research note from the author that is attached to the back.

MR. WELLS: Which I think is not on -- I guess that is what is missing from the front one, or the one that we submitted.

MR. DeLEONARDO: It looked like you didn't have all the pages either. So --

BY MR. DeLEONARDO:

Q But actually, I will even go down and -- you can certainly take a look. I will show you page 46 of the study.

A Okay.

Q And the study ultimately, and it is elsewhere in the study, as well, that reports specifically that CNS depressants were found in the blood only 50 percent of the time, and that cocaine was the only CNS stimulant detected. And that was only at a rate of 33 percent of the time. Is that correct?

A Just a moment, please.

(Examining document.)

You said the accuracy on cocaine was 33 percent?

Q Correct. This was a quote from the study, "Cocaine was the only CNS stimulant detected. And at that, only 33 percent of the time they said that a stimulant was present."

A Oh, okay. I'm sorry. I was looking at the matrix here for cocaine that didn't indicate a 33 percent. So 33 percent is in the following paragraph.

Just a moment, please.

(Examining document.)

Yes, I see that.

Q And that is with all of the information that the DRE is provided. And this was a study that, as you indicated, they used to show how good they were. Correct?

A I don't think the goal of the study was to show how good they were. I think the goal was to assess how well the DRE program worked in the field in real life situations.

Q And in that, half the time, as to depressants, they were wrong. And 67 percent of the time, as to CNS stimulants, they were wrong. They said a person is under the influence of a CNS stimulant, and it wasn't even in the person's blood.

A Before I agree on the record with your statement, I'm going to have to find exactly where it says it in here and agree with you. I can't just say yes, when I don't see where it is in here. Are you looking --

Q Well, I thought you agreed --

A Are you looking at the rubic cubes here or are --

Q Well, it is actually in several places in the study, including the summary. But you already had said that you agreed that 33 percent of the time was essentially how often they actually confirmed that in the blood. Correct?

A What I agreed with is the statement that I'm seeing right here that says, "There were only three cases where cocaine had been used alone or with alcohol. And the DREs did little better with these cases, detecting the drug only once, 33 percent."

Q Well, that's correct. And actually elsewhere in the study it explains that specifically, does it not? And I am happy to pass, if you want time to read it while we are on break. I mean, if that is -- if you feel the need to.

A Well, I'm just not going to agree with something that's not in front of me in black and white that I don't have

memorized. I absolutely have not memorized this study. Although I have read it a number of times, I don't have it memorized.

Q And you didn't --

A So if you want me to agree with something, perhaps hand me where it is in context and ask me if I agree with it. And then I will be able to say yes or no.

MR. DAGGETT: I would stipulate that one out of three is 33 percent, if that helps. I mean, I will --

MR. DeLEONARDO: Thank you, Mr. Daggett. That speeds us along.

BY MR. DeLEONARDO:

Q All right. Let's move on to the Arizona study.

Well, there is one other thing I want to ask you about. This also, the LA study also, did not determine the inter-rater reliability either. Is that correct?

A Yes, that is correct.

Q Now let's talk about the Arizona study. You talked about that yesterday. And that was a study that was done in 1994. And you -- we already covered it this morning. But essentially that was not one of those that was peer reviewed and published, as we described and defined the term. Correct? As we covered this morning?

A Actually, this particular study -- you showed me an abstract that was presented at the American Academy of Forensic

Sciences. But this particular study was --

I'm sorry?

Q Let me refresh your memory from this morning. Do you recall me showing you not only an abstract, but I came up and said, "Was this document published in a journal?" Do you recall that from this morning?

A Yes, I do.

Q And you said it was not. Is that correct?

A But that's not all that I said.

Q You said that it was presented as an abstract to a conference. Correct?

A No. You said that. And then you handed me this document.

Q Oh, I'm sorry. Where was it published?

A There is -- and I can't remember if it's two pages, three pages, but this particular study was published in -- and I'm struggling with if it's -- I'm trying to remember the -- it wasn't one of the large journals. But it was published in -- I think it was like a soft publication. It was present and published. And it's about a three- or four-page article. And it was published.

Q So an article was put in a periodical, essentially. Correct? The study was not published and peer reviewed.

A I've never seen a peer-reviewed article that's 60 pages long. No one publishes these kinds of things. They're

going to put it together in a format that is consistent with what the publication does. I've never seen a periodical or a journal that has something of this size in it. It's just not done.

Q So this journal, you still cannot recall what it is even ---

A I might be able to find it, if you want to take a break.

Q Absolutely. I would appreciate that.

Let's talk about this study did not determine whether a police officer could distinguish between impaired and unimpaired, sort of like the LA field study. It didn't do that either, did it, the Arizona study?

A (No response.)

MR. DeLEONARDO: And just for the record, I guess, this would be State's Exhibit No. 12, if the Court wants to review.

BY MR. DeLEONARDO:

Q Is that true?

A It would be simpler to say that it's the identical situation to which we described before.

Q Okay.

A And the way that I described the situation before with the field study for the LAPD is identical for this situation.

Q And this study, they actually didn't even use blood tests, did they?

A I believe that the majority, if not all of the tests, were actually urine tests.

Q They specifically said they didn't use blood. Correct?

A I would want to look at it.

Q This is a study done in your own state in 1994. And you can't recall whether they used urine or blood?

MR. WELLS: Objection. Asked and answered. Are we going to ask the same question 30 times again?

MR. DeLEONARDO: If I can get an answer to my first one, I won't.

MR. DAGGETT: She did say urine, Your Honor. She said --

MR. WELLS: Yes, she did.

MR. DeLEONARDO: She said she couldn't remember if they were all.

THE COURT: Well --

MR. DAGGETT: She said predominantly urine, is what she said.

THE COURT: -- I am going to sustain. Let's move on.

BY MR. DeLEONARDO:

Q You would agree with me, would you not, that urine

testing is even less reliable to show that a person has the drug acting on them than blood? Correct?

A I agree that it's more difficult to establish impairment with urine.

Q I'm sorry. You said -- say that again. I'm sorry.

A It would be more difficult to establish impairment with urine than with blood.

Q And that is because it can appear there from use that happened a great time, you know, in the past. Correct? I mean, it can wind up and remain there, even though the drug you took some time ago. True?

A Yes. And probably even a more direct comment would be that it's not circulating, coursing through the blood. It doesn't have the opportunity to cross the blood-brain barrier and interact with the brain and the central nervous system. So there's really no mechanism for even an active drug in urine to affect the nervous system.

Q So all that a urine specimen would prove is that the person, at best, had ingested that drug sometime in the recent past. That is all it really shows.

A Yes.

Q Okay. Now you would also agree that this study did not determine whether an officer could distinguish between a drug-impaired person and a person simply suffering from medical conditions. Isn't that true?

A I think a medical rule-out is a significant part of the DRE evaluation. I think the officers do a good job of conducting medical rule-outs. Are they physicians? Are they doing complete evaluations? Do they undoubtedly miss medical conditions? Absolutely. That is not the focus. However --

Q I am focusing on the study. I am not asking you to vouch for the program. I am asking you about the study. Isn't it true that this study did not validate the ability of the officer to distinguish between someone with a medical issue that would mimic impairment and actual drug impairment? Isn't it true this study did not do that?

A I think the medical rule-outs, the 12-step program, was part of what was being evaluated by the study. I think it's part and parcel of it. It's part of the DRE program. It was conducted in the study. I don't understand how you can exclude part of the DRE program and say this wasn't part of the study.

I agree with you that they're not physicians, that what they're doing isn't an exhaustive clinical assessment of the person. But you're taking the other side of it. You're saying that, well, let's just not consider that they do anything at all, they don't look for anything. Neither of those is true.

Q Is that everything?

A Yes.

Q I am going to ask my question again. And I am going to try to be as precise as I can, so that we can actually make this to lunch.

This study, if I understand what you are saying, you are saying yes, it did, because they do it. You are saying this study validates that they can distinguish, because they are supposed to distinguish. Correct? That is essentially what you are saying.

A I think what I said was that it's part of the assessment. It's part of their evaluation. It's part of the procedure. It isn't as if it didn't happen.

Q All right. Let me pose a hypothetical for you. A person gets stopped with prescription drugs in their car. They perform poorly on all of the physical tasks. Maybe they have a pulse or they have eyes ---. They don't do exactly the greatest on the field sobriety test. And they are then charged. Blood is -- urine is taken from them. And it shows the presence of that prescription drug.

Now are you telling me that this study supports that the officer was correct in determining that person was impaired by that drug, as opposed to being impaired by the medical condition? Are you saying this study supports that proposition?

A Again, it's going to depend upon what the medical condition was. There is a myriad of medical conditions that

have nothing to do with your central nervous system, your ability to safely operate a motor vehicle. There are -- but the medications prescribed to deal with that medical situation may or may not affect the central nervous system.

Q And so the study didn't pull that person to the side and see whether the officer correctly identified whether there was a medical condition or not. In other words, they didn't have medical personnel come in and check behind them and see if there was an underlying medical problem. They just, in this program, took the word of the DRE officer that there was not acting or causing the impairment. Correct?

A They took the assessment of the officer that they conducted the evaluation in the manner that they were trained. They asked the proper questions about whether or not the person was a diabetic, an epileptic, whether they were under a doctor's care, were they taken medications. If they weren't provided with the right answers, perhaps they would not have come up with right conclusion. But they went through the proper 12-step evaluation, asked the proper questions, and --

Q That is validated in here, that they sat there and made sure they did all right? Or did they simply -- because, essentially, did they go back and look at old cases and see how often the urine matched up?

A Well, I can --

Q That is essentially what they did. Right?

A You know, this is a retrospective study. It was part of the normal case work that's done in a DUI drug investigation. And they went back and they looked at the arresting officer reports. They looked at the DRE validation or evaluations, rather, and looked at the toxicology results, and then made assessments about them.

Yes, there is an assumption that the 12-step protocol was followed. Nobody was walking after these officers and making sure that they were doing everything correctly. There was an assumption that that happened.

Q Is that it?

A Yes.

Q There is also an assumption they were correct that there were no medical problems. Isn't that true?

A Say that again.

Q There was also an assumption made in the study that there were no medical problems. True? That they were correct in saying no medical problems. That is all I am asking.

A Yes.

Q Thank you. Now, confirmation bias. Okay? Do you have any idea out of the number of cases -- they ultimately had 500 records were initially subjected to review that has a urine specimen. Sixteen of the cases they excluded because they

didn't have a specimen that was used. Twenty-six of them, the DRE had determined someone was not impaired. So they didn't detect a drug.

So that resulted in 458 cases that were actually subjects to the study. Is that a fair summary?

A Yes.

Q And do you have any idea how many people admitted to taking the drug that the DRE said they took?

A I believe it's indicated in the study, but I don't have the number memorized.

Q Do you know where it is in the study?

A I'm certain I can find it, if you'd like me to look.

Q Okay. I will help you with it.

A I don't have the study.

THE COURT: Which one are you looking for?

MR. DeLEONARDO: Could I borrow that for a second, Your Honor?

BY MR. DeLEONARDO:

Q Unlike the LA field study, the Arizona did in fact track that. Is that correct?

A The number of subjects who made admissions?

Q Yes. Did they actually track that, to the best of your recollection?

A I think they did. But as far as what that number

is, I would have to locate it.

Q Okay.

A Do you want me to try to locate that?

Q If you can. And I will pull it up, as well.

THE COURT: I am going to recess for lunch.

MR. DeLEONARDO: Okay.

THE COURT: We will resume at 1:45. And this room will be secure over the lunch recess. Everyone have a good lunch.

THE CLERK: All rise.

(Whereupon, a luncheon recess was taken.

A F T E R N O O N   S E S S I O N

THE CLERK: Silence in court. All rise.

THE COURT: Good afternoon. Be seated, please.

MR. DAGGETT: Your Honor, recalling the matter set for the DRE Frye-Reed hearing set for this morning on Brightful, Carr, Flanagan, Mahon, Moore, Mullikin, and Teeter. David Daggett and Adam Wells present.

MR. DeLEONARDO: Just for the record, Brian DeLeonardo.

MR. CRUICKSHANK: Alex Cruickshank.

THE COURT: Counsel, we were looking for some possible dates. Let me ask you this: Could we do something Monday afternoon?

MR. DeLEONARDO: That was actually one of them I think we had actually been discussing, as well. That seemed a possibility, I believe, for all of us. Is that right?

MR. WELLS: I honestly -- I can check my -- I didn't bring my phone with my -- I don't have my calendar. I don't know what my schedule is on Monday. I think it is open.

THE COURT: We were also looking at Wednesday afternoon.

MR. DeLEONARDO: I am fine, I know.

MR. CRUICKSHANK: I just submitted a postponement request to Your Honor for a case that was set before Your Honor. So --

THE COURT: Well, I am sitting in regular criminal next week. But I could probably hand some of that off to Judge Hughes, I believe. Well, let's see what -- between now and the end of the day tomorrow we can decide whether either or both of those time periods would work.

All right.

MR. DeLEONARDO: Thank you, Your Honor.

BY MR. DeLEONARDO:

Q Ms. Spirk, I think when we left, we were talking about whether the studies had documented the number of people that had admitted to taking the drug that the drug recognition expert then concluded was in the person's system. Is that correct?

A Yes.

Q And did you find that, as well, on page 51?

A Actually, I had limited opportunity with the document. So if you'd care to show me that?

Q All right. Okay. This is State's Exhibit 12, page, I think, 51. (Handing document to the witness.)

A Thank you.

Q Do you want to take a moment to review that? Just tell me when you are ready.

A (Examining document.)

All right. I've reviewed that.

Q Okay. And in this is a table that actually breaks

down by drug. There is narcotic, depressant, marijuana, stimulants, PCP, and inhalant. Correct?

A Yes.

Q And they document in each category the number of people that admitted to actually ingesting the drug. Is that correct?

A Yes.

Q And in the narcotics section, 126 people admitted it. Is that correct?

A Yes.

Q Depressant, 122.

A Yes.

Q Marijuana, 97.

A Yes.

Q Stimulant, 78.

A Yes.

Q PCP, nine.

A It looks like eight to me.

Q All right. Well, eight. And inhalant is three. Correct?

A Yes.

Q So if you add that up, it would be 434. And I know you don't have a calculator.

A I'll assume you're correct.

Q But roughly, 434.

A All right.

Q Okay. Now there is another category as to the number of times the drugs were found on the person, when the DRE said it was in their system. Correct?

A Yes.

Q And for narcotic, that's 19.

A Yes.

Q Depressant, 22.

A Yes.

Q Marijuana, 46.

A Yes.

Q Stimulants, 21.

A Yes.

Q PCP, one.

A Yes.

Q Inhalant, one.

A Correct.

Q And that was 110. Correct?

A I assume so, yes.

Q Now the study doesn't really tell you whether or not the people that admitted were the same ones that had the drugs or whether some people had drugs, but they didn't admit, does it?

A No, it doesn't distinguish that.

Q It doesn't distinguish. Right. But we know at

least 435 people actually admitted to the category of drugs that the DRE ultimately said they were on. Correct?

A Yes. I mean, what the chart actually shows is that it's consistent with the positive toxicology. I'm assuming that's also with the DRE.

Q Right. So the person says, I'm on narcotics, and this is the number of times that the person said, I'm on CNS depressant. Correct? Or narcotic. I'm sorry.

A Say that one more time.

Q I will take narcotic, start with that. Narcotic. So the 126 people that they concluded was under the influence of a narcotic actually admitted the fact that they were taking a narcotic. Correct?

A To be a stickler for accuracy, what this chart shows, it's very close to what you're saying, but what the chart actually shows is that there were in fact 126 arrestee admissions of a category. But it doesn't reflect that there were that many DRE opinions that this person was under the influence of a narcotic analgesic. It actually goes to the following step and shows that there were 136 positive specimens for narcotic analgesics.

So you're kind of bypassing that intermediate step.

Q Okay. Well, let me just break it down, because that is -- and I will simplify it then. Four hundred thirty-five people admitted that they had ingested a drug. Correct?

A Yes.

Q Okay. And based on that, there was actually a total of 458 cases that were actually analyzed where they had a specimen. Is that right?

A Yes.

Q And so out of the 458, 435 people admitted to the drug. Now you also see below that where it says -- do you see the second paragraph under that?

A I do.

Q The bottom of that paragraph, it indicates that -- and I will quote that portion, or if you could look at that portion it says, "When the suspect admitted use of a drug, the DRE identified the drug. And it was found in the specimen for approximately 90 percent of the admissions." Right?

A Yes. And that verbal section, it actually fills in what you were assuming was in the chart, yes.

Q Correct. So essentially, in this Arizona study, 434 people, essentially they just confirmed that what those people told them was true. Right?

A I don't agree that that's what the DREs did. Admissions by subjects are certainly an important part of the evaluation. And oftentimes they do pan out. I can tell you that there are subjects who intentionally mislead the DREs. There are subjects who are under the influence of one or more drugs. And perhaps they aren't even entirely aware of what

they're under the influence of.

You can't always, and the DRE should not always, assume that what is provided by the subject is always going to pan and that they're wise to go ahead and form an opinion based upon that. That would be against their training and against the program.

Q Okay. And that would -- and so but you would agree with me that because that is such a factor in this, we don't really know how much that admission played in the DRE opinion, do we? We don't really know, based on the study.

A I know based upon the training and how they're instructed to perform an evaluation, it should not play a bigger role than the rest of the evaluation. In practicality, in practice, I can't step inside the minds of those DREs. I don't know.

Q I know. I am asking you the study, however, doesn't distinguish that, does it? The Arizona study does not distinguish what the officers actually relied on in reaching their opinion, did they?

A I think they relied upon the training and their evaluation.

Q I am not asking what you think. I am asking the study. Did the study say --

A I believe that the study, understanding the intention of the authors was that the DREs would rely upon

their training.

MR. DeLEONARDO: I am going to ask -- Your Honor, I am going to move to strike. She is talking about what she thinks the intention of the authors were. And I am asking what the study itself says. Does the study itself say that they accounted for what they relied on in reaching their opinion?

A I don't know. I'd have to read the entire study to see if there's something in there about that.

Q Well, let's move on to the Heishman study. The Heishman study was the first double blind study that was done on the DRE protocol. Is that correct?

A That's my understanding, yes.

Q It is actually -- it would be Exhibits 13 and 14, which essentially was a laboratory validation study of drug evaluation and classification program, ethanol, cocaine, and marijuana. Correct?

A Yes.

Q Fourteen basically dealt with different drugs, alprazolam, D-amphetamine, and again marijuana. Correct?

A Yes.

Q Okay. And that actually, as well, was in fact published and peer reviewed in *The Journal of Analytical Toxicology*. Correct?

A Yes.

Q And I will certainly give it to you, if you would

like to read it. (Handing document to the witness.)

A Thank you.

Q And one of the things that the study noted right off the bat, and you could see it in the abstract portion of that, second line, I believe it is, "Although widely used, the validity of the DEC evaluation has not been rigorously tested." That is the very first thing they said, isn't it?

A One moment, please.

(Examining document.)

Yes, I see that.

Q And in addition, let's talk about was the double blind -- when we talk about double blind, one of the things that it didn't allow them to do was interrogate people except for two questions about their physical defects and if they had any vision problems. Correct?

A Yes.

Q They didn't allow them to talk about their drug history or drug use or whether they felt like they normally would by taking a drug. Correct?

A My understanding is the interview was limited to the two questions you described.

Q Okay.

THE COURT: And what are the two questions again?

MR. DeLEONARDO: The two questions they were allowed to ask was whether or not they had any physical defects and

whether or not they had any vision problems.

BY MR. DeLEONARDO:

Q And the studies says, and I quote, "They were also instructed not to converse with other DREs in forming their opinions about behavioral impairment and the drug class causing the impairment." Correct?

A Yes.

Q Now the study, however -- we talked earlier about one of the things that the drug recognition expert is supposed to do is determine that there is actually a behavioral impairment caused by the drug that then means that you cannot drive safely. Right? In other words, that is one of the bases of the opinion. One of the opinions they reach is that this person is not only impaired, but impaired by a drug and impaired so they can't operate it safely. They are behaviorally impaired. Correct?

A I've never heard it put where they've teased out and said behaviorally impaired. I've always heard that, you're correct, that they're impaired for the specific task of driving safely.

Q Okay. So they are impaired to the extent they cannot operate a vehicle safely.

A Yes.

Q All right. Now this study actually didn't test that either, did it? The ability of the DRE to really determine who

is impaired behaviorally, is that correct, in any fashion? Not even just to operate a vehicle, but they really didn't test whether or not they actually could even determine a level of behavioral impairment, only how often they could detect it even being present. Correct?

A I'm having problems with you using the term behaviorally impaired. Impairment is task related. If that's your intention, if you said impaired for operating a motor vehicle safely, I would be able to answer that no, they didn't test that.

Q Okay. Now they defined behavioral impairment, the study does. Now I assume you saw that in the study after you have reviewed it, correct, that they defined what behavioral impairment is?

A I've certainly read the studies, as I've said multiple times here. I don't have any of these studies memorized.

Q Well, let's see if you can recall this. "Behavioral impairment is typically defined by whatever ability, central psychomotor, cognitive is being measured. And it is now clear that drugs differentially affect various neurological processes." Right? Is that correct?

A (No response.)

Q And they said, "Because the -- evaluation is used to predict drug intake, drug dose was chosen as the criterion

measuring the study. Another criterion that could have been used to validate the evaluation is behavioral impairment." However, they indicated they couldn't do that in the study. Correct?

A You know, the only way that that could have been done safely would be through some kind of a closed course driving situation or a driving simulator. Had they chosen to do that, there would have been mechanisms to judge their ability to drive. And that has been done in a number of studies.

Q Does the DRE determine a person can't drive by putting them in a car simulator before reaching that opinion?

A No. But what you asked me was, was there a mechanism to evaluate, you used the term, behavioral impairment. I'm talking about driving impairment. There are mechanisms to assess if someone is an impaired driver. And I gave you two examples of how that can be done reliably, how it's been done. That was the question you asked me.

Q But the DRE uses field sobriety tests, Romberg tests, finger to nose, to make the determination that a person is impaired and can't operate a car. Is that right?

A They use the entire DRE validation, yes.

Q And that is part of what they use to determine a person is behaviorally impaired. Correct?

A That's part of it, yes.

Q All right. Now you would also agree, would you not, that one of the other things that this study didn't do as well that the other studies also didn't do is test whether a person could -- whether the DRE could distinguish between a drug causing signs and symptoms and a medical condition causing signs and symptoms. Is that correct? They didn't test that either in this study.

A (No response.)

Q If you go to page 469 in that, you can look at research subjects. It says, "Participants were 18 community volunteers, ranged in age from 23 to 40. Before the study, subjects were given a thorough psychiatric and physical examination and were interviewed about past and current drug use."

Correct?

A And I thought the question you posed to me was that this study did not rule out individuals who had medical problems. It sounds to me as if they did.

Q That's my point, that the people that were included in this study, just like the Bigelow study, all of them were deemed by medical professionals, after a rigorous examination, to not have any medical issues. Correct?

A Yes.

Q So the DRE in this instance was only looking at people that would be classified as normal or healthy. True?

A Yes, through whatever screening mechanism was employed here. Yes.

Q Now even with that, even with not having to determine whether or not someone was healthy or medical, knowing they were healthy, the DREs then reached a prediction of impairment in 81 cases. Is that right?

A I would prefer that if you asked me to agree with something, you show me and --

Q Well, ma'am, you have been qualified and offered up as an expert in the research in this area. You have testified on all four of these studies both yesterday and for years. And you don't even know the stats in this, or the basic fundamental --

A No, I don't have the stats memorized. No.

Q Well, I noticed because you didn't mention any of them the other day. But you did mention the 92 percent in the other cases. Is that right?

I withdraw that.

Let me ask you this: Go to, if you would, please, since I need to point this out, first of all in the data analysis, and it would be on page 472. I apologize, 475.

Okay? And I will come over, if I need to. Do you see where there is a diagram or there is a box? Correct? You have noticed those sensitivity specificity boxes before. Right?

A Yes.

Q And just to the right corner of that it says of the 158 total cases. Correct? Of 158 total cases. Do you agree with that?

A I'm sorry. I don't know where you're pointing to. Are you talking about in the text or in the box?

Q Of the 158 valid cases --

A Thank you.

Q You didn't know prior to me asking you how many cases were evaluated in this study? Seriously, you didn't know?

MR. DAGGETT: Your Honor, objection. She has said repeatedly she doesn't have this memorized. Enough.

THE COURT: Sustained.

BY MR. DeLEONARDO:

Q All right. One hundred fifty-eight valid examinations. Do you read that line?

A I do.

Q It says, "DREs concluded impairment was present in 81 cases." Are you following that in there?

A I am.

Q All right. Let's go down another two lines. Okay? Do you see where says "Under IACP standards"?

A Yes.

Q And the IACP is the International Association of

Chiefs of Police. Is that correct?

A Yes.

Q It says, "Under IACP standards, DREs predictions were consistent with toxicology in only 41 cases." Is that correct?

A No, it doesn't say in only 41 cases. It says "in 41 cases."

Q Oh, I apologize. "In 41 cases." I did add the "only." I apologize. "In 41 cases." Right?

A Yes.

Q Which resulted in a 50 percent rate. True?

A 50.6 percent.

Q 50.6. These 41 consistent cases included 9 in which the DREs concluded that the subject was impaired by alcohol alone." Correct?

A Yes.

Q And that's because they actually did a breath test and were told the alcohol result in this study. Isn't that right?

A I don't know what all went into their opinion that it was ethanol alone, but I agree with what you read to me.

Q Let's go back to page 469. Ethanol was administered, was it not?

A I'm not there yet. Just a moment. Where on page 469?

Q You will see "Drug administration."

A Right.

Q It says, "Ethanol was administered as 80 proof vodka." Is that correct?

A Yes.

Q Now the first step that was performed in this evaluation was a breath test. Is that correct?

A Just a moment. Yes.

Q Okay. And they were provided those results. Is that correct?

A Yes.

Q And so they knew going in that there was alcohol present. Is that true?

A Yes, that's true. That's the point at which I objected to what you were asking me to agree with. You used the phrased something to the effect of this was what they based their opinion.

Q Okay.

A My objection was I don't know the entirety of what they based their opinion on.

Q Let's go to page 475. Do you remember the part that we were just reading about under IACP standards?

A Yes.

Q "These 41 consistent cases included 9 in which the DRE concluded the subject was impaired by ethanol alone.

Because the DRE's breath test provided a priority confirmation of ethanol, an ethanol-only prediction was guaranteed to be consistent." Right?

A   Yes.

Q   Because the only thing they were testing is whether, when they predicted alcohol would be there, whether it was in the system. Right?

A   (No response.)

Q   "Excluding those 9 cases resulted in 72 predictions that named some non-ethanol drug class. The DRE's predictions were consistent with toxicology in 32 cases or 44.4." Correct?

A   Yes.

Q   Now, the study also breaks it down even further. Do you see that in the next paragraph?

A   (No response.)

Q   "Of the 81 impairment predictions, DREs correctly name the class of the drug administered in the experimental session 40 times. That included 18 cases where the correctly named drug was ethanol. Thus in 63 cases where the DREs concluded impairment was not due to ethanol, they correctly name the class of drug administered 22 times or 34.9 percent. In 9 other cases, the DRE's prediction was consistent only because it named one or more drug classes found in the urine, which accounted for 29 percent of the consistent predictions that involved drugs other ethanol."

Is that right?

A I agree that you read it to me correctly, yes.

Q Well, you knew that in the study, didn't you? You knew that that was the case.

A Yes.

Q Okay. They also note a false positive. What is a false positive in the clinical research field?

A A false positive, generally speaking, means that there is a result deemed to be positive that in fact is not positive. So --

Q And the study defined that as a false positive was a situation where the subject was not actually dosed with a drug, but they said they were. Correct?

A Yes.

Q And do you know what the false positive rate was found to be among their predictions?

A I'm aware in this study that they had predictions that resulted in false positives, that they had opinions of categories being predicted that were not confirmed. Yes.

Q I asked you if you knew how much.

A Do I know the number?

Q Do you know what the false positive rate --

A No, I don't know without looking it up.

Q Excuse me?

A I don't know without looking it up in the article.

Q Please go to the 480. And do you see there is a box that says --

A I'm not there yet. Just a moment.

THE COURT: Slow down, Mr. DeLeonardo.

THE WITNESS: I'm there.

BY MR. DeLEONARDO:

Q Page 480, there is a box. And it summarizes the results of the study. Is that correct?

A (No response.)

Q And you see a box there. It talks about what the sensitivity, the specificity, false positive, false negative, and the efficiency is. Correct?

A Correct.

Q What is the false positive that was found?

A 40.7.

Q So that meant that 40 percent, when they predicted a drug was there, they were incorrect. Is that true? That is what the study is defining it as.

A Yes.

Q Now as far as in the field there is actually a peer-reviewed and published study, is there not?

A Are you talking about --

Q Shinner and Shneckman. Are you aware in the field that there is actually two additional peer reviewed, or at least one additional, that would fit actually what we are

talking about, one additional peer-reviewed and published evaluation of the DRE protocol that was double blind?

A I'm aware that there are two articles by Dr. Heishman and --

Q Not Dr. Heishman. I am asking you another one that is out there.

A Could you give me the title of the article?

Q "Drug Identification Performance on the Basis of Observable Signs and Symptoms, Accident Analysis and Prevention," published in a journal.

A And what year was that published?

Q That was in 2005.

A I believe I have read the article, but I don't have a specific recollection of it.

Q Then I will pass on it. You said you are not familiar with it. Right? You haven't really reviewed that study.

A No. What I said is I believe I have reviewed the article. I think I have a copy of it with me. But if you're asking me to rephrase it for the Court or to give you conclusions from it, I'm not going to be able to do that without looking at the actual article.

MR. DeLEONARDO: I will mark this.

THE CLERK: Defendant's No. 4.

(The document referred to was

marked for identification as
Defendant's Exhibit 4.)

BY MR. DeLEONARDO:

Q Did you say you have a copy of this, as well?

A I believe I do have a copy with me.

MR. DeLEONARDO: Your Honor, may I ask permission that she could find a copy? Because right now this is the only version I have. I thought I had a copy with me, but I don't.

THE WITNESS: Well, it's in my car, which is --

MR. DeLEONARDO: Well, then never mind. I will --

BY MR. DeLEONARDO:

Q Take a look at this exhibit and see if you --

THE COURT: Defendant's Exhibit --

THE CLERK: Four.

THE COURT: -- 4.

THE WITNESS: I'm going to take just a brief moment and review this, please.

(Examining document.)

Actually, I'm not sure that I have reviewed this article.

BY MR. DeLEONARDO:

Q Okay. So you have never actually read the article or what is involved with it?

A I can't tell you definitively if I haven't or I have. What I can tell you is that I just reviewed the

abstract, and I don't have a specific memory of it.

Q All right. Well, then I won't go down that road.

Let's move off the studies. Well, let me step back real quick. You said earlier you did receive a copy of Dr. Janofsky's from Johns Hopkins. You did receive and review a copy of his report. Is that correct?

A I'm having trouble hearing you. A copy of what?

Q A copy of Dr. Janofsky's report, you did receive a copy of that. Correct?

A I did, yes.

Q And he discusses that particular study, as well, in his report, does he not?

A The study that you just handed me?

Q Yes.

A I don't remember, no. I don't know.

Q You don't even remember what is concluded in that?

MR. WELLS: Objection. Asked and answered.

MR. DeLEONARDO: I'm sorry. That was more of a reaction. I won't speak out loud.

THE COURT: Sustained.

BY MR. DeLEONARDO:

Q Okay. Let's go to toxicology. Now you said all along, and I think you said many times, how this is a totality. You have to put everything together. Right?

A Yes.

Q And you said toxicology is actually critical to the whole case. Because if you don't have the toxicology, you can't confirm the DRE opinion. Correct?

A Yes, I think it's an important element of it.

Q All right. But you were aware that the DRE protocol actually says that the opinion that they reach is independent of any toxicology. Correct?

A The concept being that they reach an opinion prior to the analytical confirmation, yes.

Q So that means that a DRE can reach an opinion about it not being medical issues that the person is impaired by a drug and they can't operate safely without ever having a toxicological sample. Is that right?

A Well, yes, there is no field toxicological test. They're going to conclude their evaluation in the field usually within an hour or so. They're going to collect a specimen that will be sent to the crime laboratory. And it's more often than not some significant period of time before either that blood or that urine is analyzed. And the DRE opinion and evaluation is purposefully concluded in advance of the toxicology confirmation.

Q I am asking you if -- what if they don't even take blood, is that okay under the DRE protocol?

A Ideally, the DRE final protocol's final step, the twelfth step, is the collection of blood or urine for a

specimen for a toxicology corroboration. There have been certain cases where, for various reasons, that twelfth step never occurred. I've seen it handled a couple of ways in court. I've seen officers come in not necessarily as DREs, but officers with additional training, talk about their findings, the fact that there was never a specimen. And I've seen that happen in court.

I've seen situations where they've come in as a DRE, but the weight of the evidence is much less, because the twelfth step was never concluded.

Q Well, I am only asking --

A I've seen DREs not be able to go to court because of the omission of the toxicology. I've seen the whole gambit of those things happen.

Q I appreciate you sharing your life experience. I was asking about the protocol. I am asking you what does the manual, what does the protocol require. Is it not true that the protocol does not require that they not offer an opinion, if there is no toxicology? In other words, they can offer that opinion regardless of the text. Correct?

A There is an opportunity for a test that is missing sections. For whatever reason, part of the evaluation wasn't able to be concluded. That could be the toxicology at the end.

Q You told --

A It doesn't stop the DRE from being able to provide

the DRE evidence that was available.

Q So in my understanding, if the answer to my question as to what the protocol requires is, no, it doesn't require them to have blood or urine corroboration.

A It's a standardized and systematic program. The concept isn't --

Q I am going to ask my question.

A I don't know how to answer that.

Q Does it require it?

A I don't know how to answer you.

Q Well, if it says --

A All 12 steps are supposed to happen.

Q And I am asking you, doesn't the manual say that the opinion is not based on the results of the toxicological analysis? Is that correct?

A Yes.

Q Which means that they can testify whether or not a test was done. Correct?

A I don't understand your question. They could testify as to whether or not --

Q The DRE manual permits the DRE to testify even if there is no blood or urine results. Isn't that true?

A They're not precluded from talking about their evaluation, if they fail to get a test.

Q Now you just sat here and told us that is critical

to have all of this together. True?

A The more information, the better. The toxicology is important. The driving behavior is important. Absolutely. The more information, the better.

Q Well, there is a difference between it's critical and the more information, the better. Wouldn't you agree?

A I don't -- I don't know how to answer your questions. I'm sorry.

Q Well, in addition, the manual says even if it doesn't appear in the blood, even if they say it is there and it is not even in the blood, they can still testify that the person was impaired by a drug, can't they?

A Yes.

Q And they said, in fact, because sometimes the lab can't event detect what was in the blood. Right?

A That happens much more frequently than we would like, yes.

Q So you have these cases where they are claiming someone is impaired, and the blood gets taken, and it gets tested. And there is nothing in the blood. And that is still acceptable to you that they go in and render an opinion that the person was drug impaired and it wasn't from a medical condition. That is still acceptable in your experience?

A Yes, it's acceptable to me.

Q Okay.

A Yes, it is.

Q Now you also, when we were talking yesterday, you also would agree that -- I am going to give you a hypothetical. I was curious if you could answer it. Let's assume that an officer, a police officer, an arresting officer, arrests someone. And a drug recognition expert was not available to do an onsite evaluation. Okay?

Do you believe it is appropriate for the drug recognition expert to use a photograph of the person, the observations of the arresting officer, to reach an opinion as to whether or not the person is impaired by a drug and unable to operate safely?

A You're question is, is it appropriate for the DRE to use photographs and observations of the arresting officer to come to a conclusion about impairment?

Q Yes.

A I don't think it would be appropriate, if they were to say that that was, in fact, a DRE evaluation, because I don't think it would be. However, I think it would be appropriate or could be appropriate, if it was characterized appropriately, that they were using their advanced knowledge and training, they were looking at limited evidence, they were not doing a DRE evaluation, but they were offering an opinion as someone who had had additional training. I think that appropriately characterized is fine. But that would not be a

DRE evaluation.

Q Oh, absolutely. But you think with these officers, without doing any of these steps of this protocol, are still perfectly fine coming in and talking about general effects on the body of drugs and what medical conditions would or would not be mimicking that. Without doing any of those protocols, you feel comfortable with that.

A I think they have -- it's going to depend on the qualifications that a state would have for an expert. In Arizona, our qualifications is that an expert is more knowledgeable than a layperson. I believe these officers meet that criteria. They've had a lot of training, a lot of experience. As long as they're very up front about the fact that this wasn't a DRE evaluation, it was done in a much-abbreviated manner, but they're using some of their additional training and knowledge to proffer an opinion that would not be a DRE opinion. I think it could have value, and it may be helpful.

I also think that, characterized appropriately, it would have less weight as evidence than would a full DRE evaluation.

MR. DeLEONARDO: That is it for me, Your Honor.

THE COURT: Mr. Cruickshank.

MR. CRUICKSHANK: Thank you.

CROSS-EXAMINATION

BY MR. CRUICKSHANK:

Q You are an expert in toxicology.

A In forensic toxicology, yes.

Q And as an expert in forensic toxicology, just following up on Mr. DeLeonardo's point, to determine whether or not somebody was impaired, you are saying that you just need the signs and symptoms of impairment, correct, in your opinion?

A No, I don't -- you know, it's on a case-by-case circumstance.

Q Well --

A Allow me to finish, please.

Q Sure. Go ahead.

A You asked me if signs and symptoms were enough to determine if someone was impaired. If you have an individual who had a significant concentration of, say, phencyclidine, PCP, on board, and even to a casual observer you were to see this person hallucinating, acting very unusually, I think you would not have to have a lot of training to be able to make a decision that this person --

Q I am asking in your field of forensic toxicology. Does an expert in forensic toxicology, to determine whether or not somebody is impaired by, say methadone, would you need the signs and symptoms of methadone impairment and the toxicological information, that being the blood test, or, as an expert in forensic toxicology, would you conclude that that

person is impaired by the methadone with just the signs and symptoms?

A I think --

MR. DAGGETT: I don't think that question is -- I don't think she can answer that question. I mean, a toxicologist, by her training, looks at the blood results. So to ask --

THE COURT: Maybe that is the answer. I can't imagine a toxicologist wouldn't --

MR. CRUICKSHANK: Well, that's the -- I wanted signs and symptoms. Let me just say -- I mean, I don't know how to say it any other way.

BY MR. CRUICKSHANK:

Q As a forensic toxicologist, in order to reach an opinion that somebody is impaired by a reasonable degree of certainty, do you need the signs and symptoms of impairment alone or do you need the signs and symptoms of impairment with the toxicological blood test that shows methadone in the blood?

A Of course I think the best and appropriate approach is to have that information, is to have a toxicological report. I'd prefer to have a quantitation in blood. I'd prefer to have signs and symptoms documented. But, I'm sorry, I have seen case --

Q No, I am not asking if you have seen cases. As an expert in forensic toxicology, would you draw an opinion as to

a reasonable degree of certainty that somebody was impaired by, say, methadone without having the blood test, where that person tested positive for methadone? In your field of expertise as a forensic toxicologist.

A For methadone, no, because methadone is not a drug that's fleeting. It's not a drug that is difficult to analyze. So there's no real analytical reason why we wouldn't be able to see, confirm, detect methadone. So in that particular example, I would expect to have a confirmation of methadone.

Q So what you are saying to me is that you would need signs and symptoms of impairment with a toxicological reading of methadone in the body before you would conclude to a reasonable degree of scientific certainty that the person was impaired by methadone.

A Yes, that's what I would expect to have. That would be appropriate.

Q So there is a difference between a DRE concluding as to a reasonable degree of certainty and a forensic toxicologist concluding as to a reasonable degree of certainty that somebody is impaired by methadone. Is that correct?

A (No response.)

Q If the DRE has no blood test -- excuse me. Let me just put it in a box. A DRE can testify that somebody is impaired by methadone without a corroborating blood test. Correct? Just on signs and symptoms.

A Yes.

Q Okay.

A But that's their opinion.

Q That's their opinion. So there is a difference between the opinion of a forensic toxicology and the opinion of a DRE. Correct?

MR. DAGGETT: Your Honor, this whole line, it doesn't have an answer. The problem with the whole line of questioning here is she only sees one --- if she were able to see the suspect and view the suspect and have contact with the suspect, well, then she could add the two together. But she doesn't see the suspect. So how could she possibly answer that question? I mean, it is just not a fair -- it is not a fair or reasonable question.

MR. CRUICKSHANK: Well, the question is in the area of expertise of forensic toxicology, one, which is the expertise that the expert has been qualified in. And two, the question is in the area of the DRE expert, which is the other area that she has been qualified in. And I am asking you the question as to a reasonable degree of certainty. May a DRE offer an opinion that somebody has been impaired by methadone, based solely on signs and symptoms without a blood test corroborating methadone in the --

MR. DAGGETT: And I am --

THE COURT: Well, that has already been -- that has

already been answered.

MR. CRUICKSHANK: Fair enough.

THE COURT: I mean, that is part of the protocol. And I think we heard that also from, if I am not mistaken, from another witness.

BY MR. CRUICKSHANK:

Q As an expert in forensic toxicology, you are in charge of a lab in Arizona. Correct?

A I don't think it's accurate to say I'm charge of a laboratory. We have a very large laboratory with a number of different disciplines. I'm the technical, toxicology technical supervisor over the toxicology areas in four laboratories.

Q And the toxicology equipment you use, what is that equipment?

A There's a number of instruments. We have immunoassay tests. We have gas chromatographs. We have liquid chromatographs. We have mass spectrometers. We have analytical balances.

Q And before you testified here today, you had the opportunity to meet with the head the laboratory here in Maryland and discuss what equipment they use.

A No.

Q You didn't do that.

A I did not do that.

Q Did you have the opportunity to meet and talk with

our state's chief toxicologist, Barry Levine?

A No.

Q Okay. Did you have an opportunity to review what drugs are tested for, if any, in the State of Maryland?

A No.

Q Did you have an opportunity to find out if Maryland has a qualitative test for drugs or a quantitative test for drugs?

A I did ask to review the reports of the consolidated cases for this hearing. I was provided not with all, but with some of them. And I did have an opportunity to review the toxicology reports. And the reports that I reviewed were all qualitative and not quantitative.

Q But it is fair to say you don't know what equipment is used in Maryland. Isn't that correct?

A (No response.)

Q You have had no contact with the Maryland lab that tests blood for drugs. Is that correct?

A That's correct.

Q And so you are an expert here today in the field of forensic toxicology who knows none of the answers to what equipment Maryland uses to test for drugs and blood.

MR. DAGGETT: Relevance.

MR. CRUICKSHANK: The relevance is that this is a Frye-Reed case. And we are --

THE COURT: Is what? A Frye-Reed?

MR. CRUICKSHANK: It is Frye-Reed.

THE COURT: I think we can all agree on that.

MR. CRUICKSHANK: All right. And we are here in Maryland. And I think it is absolutely important to know what the DRE program is doing in Maryland and what --

THE COURT: The DRE program? I thought this was a question about lab equipment.

MR. CRUICKSHANK: Excuse me. That's right. What is being tested in Maryland, I think that that is certainly on point.

MR. DAGGETT: That has never been a subject of Frye-Reed. Every -- the toxicologist here in Maryland, that is not a Frye-Reed issue and never has been. So I don't think it -- it is not relevant to whether or not she knows -- what equipment Maryland uses is not relevant to this hearing.

MR. CRUICKSHANK: It is relevant, Your Honor, because the twelfth step of the DRE protocol is the blood test. Maryland tests -- I am assuming Maryland does a test to see what is in the person's blood, as a part of the twelfth step of the protocol.

THE COURT: Right.

MR. CRUICKSHANK: And the State has called a witness. And she has described what is going on in Arizona and how they test in Arizona. And so I think it is extremely

important to know from --

THE COURT: Well, what did she say about how they test in Arizona?

MR. CRUICKSHANK: Excuse me, Your Honor? I can't hear.

THE COURT: What did she say about how they test in Arizona?

MR. CRUICKSHANK: Would you like to enlighten us?

THE COURT: No, no, no. I guess I am having a little trouble with the concept that -- I guess I am kind of asking the same question that Mr. Daggett is. What is the relevance of what equipment is used and the witness's familiarity with that equipment?

MR. CRUICKSHANK: Well, let me rephrase the question. I think it has probably been asked and answered.

BY MR. CRUICKSHANK:

Q You have no basis of knowledge to know what equipment Maryland uses to test blood for drugs as part of the twelfth step of the DRE program in Maryland. Correct?

A No, that's not correct.

Q Okay. So you have reviewed protocol at the lab.

A No, I haven't.

Q You have been to the lab.

A No.

Q You have met with the chief toxicologist for the

State of Maryland.

MR. DAGGETT: Asked and answered.

MR. CRUICKSHANK: I am just --

THE COURT: Why don't you ask her what her basis of knowledge is?

BY MR. CRUICKSHANK:

Q What is your basis of knowledge?

A Thank you. There are only so many ways to skin this cat. Laboratories, state laboratories, are all accredited by some mechanism.

Q You know that the Maryland state laboratory is accredited?

MR. DAGGETT: I think the Court will take judicial notice of that.

THE COURT: Yes. Yes. I think I --

BY MR. CRUICKSHANK:

Q Well, let me ask just -- the standard of excellence that you have in Arizona you call the platinum standard. Is that correct?

A No. I said that our LCMSMS, which is a confirmation instrument, was considered a platinum standard. I didn't say the program was a platinum standard.

Q Is the program the gold standard?

A No. The gold standard referred to the CS mass spec, which is another confirmation instrument that we use. When I

talked about gold standard and platinum, that referred to two confirmational pieces of instrumentation that we use to test.

Q And that standard of instrumentation, you are not aware if Maryland uses that standard of instrumentation. Is that correct?

A I'm absolutely aware that Maryland would utilize some kind of a screen, which must be an immuno-acid, that they use some kind of a confirmation test, which must be, at least in some part, a gas chromatograph mass spectrometer.

Q And what is your basis of knowledge?

A My basis of knowledge is that this is an accredited laboratory, that, as I said previously, there are only so many ways acceptably to conduct forensic toxicology testing. There are guidelines by the American Academy of Forensic Science and the Society of Forensic Toxicologists that indicate how drug screens are to be conducted.

If there were a state crime laboratory that was completely out of the fold, that was not doing testing in some similar kind of fashion, I can't imagine that it would be allowed in the court system. This is an accredited lab.

Q So you attribute no importance to determining for yourself what protocol Maryland uses to test drugs and blood.

A I did ask about reviewing the specific cases. And I was told that because this was a Frye-Reed hearing, those specifics were matters for the trial and --

Q That's correct. And we --

A -- that they would -- I should not anticipate that they would be brought up today. So I did not go into those specifics of the case, of the details of the analytical measurements. And yes, I did assume, because this is an accredited state crime laboratory, that minimum requirements were being met, just like they are in the rest of the United States.

Q Is it fair to say in Arizona that you test for specific name brand drugs, say Ambien?

A Yes, we do test for Ambien or zolpidem. Yes.

Q Are there other name brand drugs you would test for in the State of Arizona?

A I think you may be mistaken here about the significance of a name brand drug. It's just a name that a manufacturer gives a drug. Then there is a chemical name for the drug. When we test for a drug, we don't have a special test we do for Ambien. But then for zolpidem, which is just the other name for Ambien, we have another test. It's the same chemical structure with two different names.

Q So all the drug -- are you familiar with *The Physicians' Desk Reference*?

A Yes.

A So all the drugs that may be in the category of, say, a CNS depressant within *The Physicians' Desk Reference* are

the same drug.

A Of course not. That's not what I said. We were talking about -- there is a chemical and then a company or a brand name for a drug. Drugs have two different names. Once the patent runs out on a drug, then other manufacturers will come in and name it different names. It will be marketed under different names. And that's after some period of time. But there is no different analytical test just because it has a different name. You're talking about a big category of drugs.

Q The signs and symptoms in the matrix, those signs and symptoms are applicable to name brand drugs, as well as categories of drugs.

A If -- if a drug, whether you call it a name brand or a chemical name, is placed in an appropriate category: CNS depressant, et cetera, and it belongs there, then that's where the drug belongs. And those drugs are going to have similar effects. When we test for them on the mass spectrometer or we extract them in blood, we design different methods based upon the chemical structure of the blood, excuse me, of the drug.

Q The warning information, adverse reaction information, from the manufacturer of a pharmaceutical, does that go into the DRE matrix?

A No, it's not part of the matrix. I mean, indirectly there are things in the matrix that you look for, different signs and symptoms that are addressed in the PDR. I'm not sure

I'm really understanding your question.

MR. CRUICKSHANK: Nothing further.

REDIRECT EXAMINATION

BY MR. DAGGETT:

Q You testified or you made a statement earlier why it is important in certain instances, when blood is tested and no drugs are detected, why that is important to you or why that happens. Could you elaborate on that?

A There are certain drugs that -- a very good example that the Court is probably familiar with are inhalant, people that sniff paint or sniff glue. It's a very big problem amongst young people. And it is a drug that dissipates. It's half life is very rapid. If there isn't a sample obtained very, very rapidly, sometimes within minutes, it's not going to be detectable in the blood.

So it's not uncommon to have a well-documented case where you may have gold paint on someone's face. You may have a can of spray paint by them or a baggie that they were using to help insufflate the paint. And by the time the DRE came out, by the time anyone was able to obtain a blood specimen, when it's analyzed in the lab, there is no toluene, which is the main chemical component in paint sniffers. And there's no confirmation.

But there is so much impairment that's documented, so much overwhelming evidence with the paint on the nostrils

and on the face, with the paint cane, that it is a case that it's very compelling and there's enough evidence for that case to go to trial, even though there was never a confirmation.

There are toxicologists that are brought in routinely to explain to the Court why, even though a blood test was gotten, why it came up negative. The concept of this is a fleeting drug, it's a fleeting metabolite, and it's not detectable for very long in the blood, so it isn't surprising that with an hour, hour-and-a-half delay in obtaining blood, that the toxicology would be negative.

Those kinds of happenings are not necessarily uncommon.

Q What other, other than inhalants, what other situations?

A There are situations with -- I think the Court probably hears about it a lot, where there is a psychoactive drug, something like cocaine, that again has a very, very short half life. And even if sampling is done fairly quickly, all that remains is going to be an inactive metabolite. And so we can never really show that there was an active drug present in the person's system, even sometimes with a pretty rapid sampling. All that's left is a metabolite that, frankly, could have been there for some time. And it's difficult to relate that directly to any kind of impairment. But what relates it is these different signs and symptoms that have been

determined.

So there's really a number of different kinds of examples where either a test is negative or perhaps -- there's a new drug that's out there that a lot of folks have heard about. It's Spice or K2, which is a synthetic cannabinoid. It's -- in most of our states, it's not even illegal, but it's highly impairing. And it's available in the different smoke shops and head shops. And I believe there's only one laboratory in the whole United States that confirms the analysis. But it's highly impairing.

So in those circumstances, if you had the documentation of impairment, you had some of the paraphernalia, the containers of the spice. A lot of the kids end up going to the emergency room because of this. It's a very bad drug.

Q I think you -- that's fine, ma'am. I think you addressed that. What about -- Mr. DeLeonardo asked you specifically about the Heishman study, as if it implied or -- not implied, but, I guess, accused you of glossing over that or not, I guess, glossing over or skipping over. You had some concerns with the Heishman study, the way it was done, the amount of -- did you have some concerns with the way it was done, the amount of narcotics, the levels of narcotics that were given, that type of thing?

A Yes. There's a specific list of concerns about the design of the study, yes.

Q And what were your concerns?

A Well, briefly, I think one of the major concerns was the fact that they used an abridged version of the DRE program. What's emphasized in the DRE program is that it's standardized and systematic, it be done the same way. For this program to purposefully abridge this program and not use all the steps and to basically gut the ability to say it's standardized and systematic, I think that's quite significant.

And we discussed at length the fact that there was no opportunity for interview with the suspects. And that's a significant issue.

Q And how does that go or how does that link up to the level of doses or the dosage levels that were given to the participants?

A As I'm sure the Court knows, in a drug abuse situation, individuals typically are not looking at therapeutic doses of drugs. It's an abuse situation. They're taken them for an effect. Oftentimes there are issues of tolerance, especially with narcotic analgesics, especially with the CNS depressants. They'll build up a tolerance to a drug and they'll take more and more of the drug.

In this particular study, the doses that were utilized, even though they did in fact exceed therapeutic, they weren't consistent with the doses that individuals were taking in the street. And that's another situation that is different

and was different even from the original Johns Hopkins study, where they were using greater doses. And they were allowing more time to elapse from the time the drug was administered until the time the evaluation occurred.

In this particular study, they were waiting approximately ten minutes and then having the evaluation occur. So those two things together were significant.

Q Okay. Now in the -- I can't remember if it was Mr. DeLeonardo or Mr. Cruickshank that asked you about do you have a problem -- and if I am -- maybe I am paraphrasing this, but would you have a concern or a problem with a DRE not conducting his own 12-step examination of a suspect, but in fact looking at reports and giving an opinion as to what types of level or what types of effects certain drugs have on the human body, not giving an opinion as to whether someone is impaired or not, but merely giving an opinion as to what type of effects, the general effects, cocaine has on an individual, the general effects marijuana has on an individual? Do you have a problem with that?

A Absolutely not. I think for me the distinguishing factor was if someone was not doing a full DRE, but portraying it as such, saying this is my DRE opinion, I've done this evaluation, when they hadn't. I would have a problem with that.

Q Sure. And I don't think that was the question.

A No.

Q I don't think anybody here was implying that a DRE was changing that. But just the fact for somebody who has gone through the program, the training, and gone through the program, do you have a problem with them coming forward and testifying as to what the general effects of a particular type of drug are on an individual?

A No. I think they have additional expertise in this area. And if they can use that knowledge and be helpful, I don't see any problem with that.

Q All right. And just a couple more follow-ups. And I promise you won't be here long. But there were -- these studies that we talked about that were questioned to you, the LA field study, did the -- strike that.

I meant to say the Arizona, the 1994, the 1989 through 1993, the four-and-a-half year Arizona study. I believe that encompassed approximately 460, 458 cases, something along those lines.

A Yes. It was actually 500. But if you negate the ones that were negative for any toxicology, it was about 460, 470 cases.

Q Now the cases, of those cases in which DREs gave opinion, what percentage was corroborated by the toxicology?

A The percentage where they had given an opinion was -- and it was my understanding, and I want to make sure I'm

correct for the record, is that it was 484 cases, and that the DRE, they recognized drug impairment, and they correctly identified the categories which caused the impairment. And they were right 83.5 percent of the time in the correlation with a specific category.

Q That is based upon, I guess, a four-year, four-year time period?

A That's correct. I think it was actually about four-and-a-half years.

Q Four-and-a-half years. And I know this bothered you. I am -- this is your -- I am going to give you the opportunity, I think it is only fair in light of the -- I want to give you the opportunity to explain the -- when Mr. DeLeonardo was asking you about the incidents regarding the conference, the Arizona conference, in 2005 or 2004, whenever it was, four or five years, five or six years ago, were you ultimately cleared of those allegations?

A Yes, I was, completely.

Q Could you explain basically what the final ruling was?

A I know the Court's been generous with your time. And I don't want to take up a lot of your time. I'll try to do this very briefly.

The ruling -- there was a hearing. And the ruling by the merit system council was that there was -- none of the

accusations were founded. They were not factual. I was completely cleared of any wrongdoing, whether it be for providing food for the conference, whether it be for any misunderstanding about me having set foot in a hotel room. And I was reinstated in my old position, made whole again with any back pay, insurance benefits, et cetera, and provided with an undisclosable -- I'm not sure of the right way to characterize it.

Q Settlement? Is that the right word?

A Settlement, yes. That's the appropriate word. I can tell you that the department was reprimanded for the quality of the investigation and told to please never let anything like that cross their desk again. And that was it.

Q Thank you, ma'am. And finally, unless Mr. Wells has a couple of questions, there are -- we have heard about the -- and I am not sure if we have actually, anyone has actually -- and I think -- I am not sure if Mr. DeLeonardo put in the instruction manual or not. I'm not sure if the Court has a breakdown of the actual 12-step -- you know, we have all heard of the 12 steps, both in, I guess, the AA --

THE COURT: Is that on the laminated --

MR. WELLS: It is on the back of the matrix. That's correct, Your Honor.

THE COURT: Yes.

MR. DAGGETT: I just wanted to make sure. So the

actual 12 steps are in fact in evidence. I wanted to make sure that we got that in.

THE COURT: Right. Right.

MR. DAGGETT: Okay. That was my main question along there.

BY MR. DAGGETT:

Q Is it your opinion that all 12 of these steps are absolutely necessary for a DRE to render an opinion?

A I believe that an opinion can be rendered, even if every one of these steps wasn't able to be followed. But that being said, it's situational. It's based upon each individual case. And I believe that every DRE should try to the best of their abilities to be standardized and systematic and always comply with each and every one of these steps whenever it's possible.

Q Understood.

A And I also believe that if any of the steps are left out, that that should go to the weight of the evidence.

Q Thank you.

REDIRECT EXAMINATION

BY MR. WELLS:

Q Ms. Spirk, I have some very brief questions. There was a question by, I believe, Mr. DeLeonardo about whether or not there had been any studies with regards to DREs and the concept of inter-rater reliability. Do you remember --

A Yes.

Q -- the concept of inter-rater reliability?

A I do.

Q Now the DRE program, the DRE evaluations, does that lend itself to being accurately -- I mean, how can you do an inter-rater reliability study? Explain to the Court the inherent fallibility of that idea.

A You know, with any validation study, of course there's a desire to be all things and to check every aspect of it out. But in the DRE program and other programs, to be able to repeat something, to do an evaluation on a subject impaired by drugs and then turn around and say, okay, now we're going to have another DRE do the same evaluation on the same subject -- one of the real critical issues that we've discussed recently was drugs dissipate. Over time they become less and less and less.

Individuals are not going to express their impairment the same way an hour, an hour and a half later, than they did an hour, hour and a half earlier, especially with drugs that have a shorter half life and are not around as long.

So the concept that we're going to be able to have multiple DREs check for their precision, check for their ability to assess the impairment of one person over and over again, as nice as it would be theoretically, I wouldn't know how to design a study to set something up that would accomplish

that.

Q Now with regard again to inter-rater, how about polydrug use, specifically to speed ball, how would that affect inter-rater reliability? And what is a speed ball, for the Court's edification?

A A speed ball is the combination of drugs, a polypharmacy of heroin and cocaine. And again, it's going to be difficult, because this is going to be a drug where over time you're going to see the different polypharmacies affecting the person differently. And you really wouldn't expect, in the early time course of this study, when you're seeing more of the speed on board, and then when you evaluated somebody later, you're going to see other effects of that combination of drugs.

And I wouldn't expect a person to behave and be evaluated the same in the early time course of the study as they would in a later time course of the study. That's not how that particular combination of drugs works. And a polypharmacy evaluation is difficult to begin with. But to expect someone to redo the evaluation at a later time and expect them to come up with the same conclusion, I think is not very likely.

MR. WELLS: I have no further questions.

MR. CRUICKSHANK: Just a couple questions.

RECROSS-EXAMINATION

BY MR. CRUICKSHANK:

Q With regard to the Heishman study, you stated one of

the flaws with the Heishman study is that the dosages of street drugs was too low in your opinion. Correct?

A I think it was too low. And I think that probably the better way to put it --

Q Well, let me --

A -- is that it's not consistent --

Q The answer to the question is yes, not consistent.

A -- with what's seen in the street.

Q So can you name to me the street dose study for the drugs in the Heishman study? What study do you know about that sets forth what a street dosage of marijuana is or any of the drugs in the Heishman study?

A It's actually pretty straightforward. Any state crime laboratory has a database of the drugs that they confirm and how much are there. So our laboratory, we have a laboratory information management system. When we type our reports, it keeps track of every report that we type. So all I have to do is go in and look in the database. And it will tell you what the average concentration of our different drugs are.

Q So there is no peer-reviewed study out there that talks about the street dosages or average street dosages of any of the drugs in the Heishman study, how they were too low.

A (No response.)

Q Isn't it -- you are looking at your -- you are validating your idea that Heishman used lower dosages of street

drugs by your experience from your crime lab. Is that correct?

A Yes.

Q Okay. And so you are not using anything out there in the scientific community other than the information you have from your own crime lab.

A I'm also using the fact that I have discussed this with different peers and colleagues. And there is a consensus that that is one of the identified flaws with the study.

Q And this consensus made itself available in a peer-reviewed article.

A I don't think so, no.

Q Thank you.

RECROSS-EXAMINATION

BY MR. DeLEONARDO:

Q You talked about the Heishman. And you said one of the problems that you had is that it gutted it -- you used the word gutted -- the DRE program so it couldn't be tested correctly. Right?

A I think I used the word abridged. It shortened or abridged the 12-step program.

THE COURT: I have it. I have abridged.

MR. DeLEONARDO: Okay. Well, I thought -- maybe that was -- I had in quotes here "gut."

BY MR. DeLEONARDO:

Q So let me ask you this. You previously testified

that the heart and soul of the program is the matrix. Correct?

A I think I did say that, yes.

Q So essentially what they did was test the heart and soul of the DRE program. Correct?

A I don't know where to go with that.

MR. DeLEONARDO: No further questions.

(Witness excused.)

THE COURT: All right. Let's take a 15-minute recess. And when we continue, what is next?

MR. DAGGETT: Dr. Zenon Zuk, Your Honor.

THE COURT: All right.

THE CLERK: All rise.

(Whereupon, a brief recess was taken.)

THE CLERK: Silence in court. All rise.

THE COURT: Be seated, please.

MR. WELLS: Your Honor, we are back on the record. Adam Wells, W-e-l-l-s, on behalf of the State; David Daggett, D-a-g-g-e-t-t. And we are resuming with the Frye-Reed hearing.

MR. CRUICKSHANK: Alex Cruickshank, Office of the Public Defender, on behalf of the public defender clients.

MR. DeLEONARDO: Brian DeLeonardo.

THE COURT: All right. Ready to proceed?

MR. WELLS: The State is, Your Honor. The State would call Zenon Zuk to the stand.

THE CLERK: Good afternoon. Please remain standing

and raise your right hand.

Whereupon,

ZENON ZUK

was called as a witness by the State and, having been first duly sworn, was examined and testified as follows:

THE CLERK: Please have a seat. For the record, please state your full name, spelling your first and last, and give your business address, please.

THE WITNESS: My first name is pronounced Zenon, spelled Z-e-n-o-n. The last name is pronounced Zuk, spelled Z-u-k. The business address is 2020 --- Street, Los Angeles, 90058.

THE COURT: I'm sorry, Doctor. The first name is spelled Z-e-n-o-n?

THE WITNESS: Correct.

THE COURT: All right. Thank you.

DIRECT EXAMINATION

BY MR. WELLS:

Q And, Doctor, it is okay to sit back from the microphone. You don't have to be up there the entire way. If there is a question that somebody doesn't understand, you can lean forward into it. But considering you are going to be up there for probably a slight period of time, you can sit back.

Okay. Doctor, where do you live?

A I live in Manhattan Beach, California.

Q Okay. How are you so employed?

A I'm employed as the medical director for the Los Angeles Employees' Healthcare Network for the 10,000 employees of the LA County USC Medical Center. And I have a private practice called Stacy Medical Clinic in our twentieth year now, which is an urgent care, ambulatory care clinic --

Q I'm sorry. You said your twentieth year?

A Twentieth year, yes. It's a 24-hour-a-day, 7-day-a-week clinic, ambulatory care, urgent care, industrial care clinic.

Q Okay.

MR. DAGGETT: Doctor, I know it is probably very awkward here, since Mr. Wells is talking to you, and you want to address the judge. So probably if you would either look straight ahead or address the judge, you don't have to look over this way. And we will not be offended. Okay?

THE COURT: They are not easily offended, Doctor.

MR. WELLS: No, I'm definitely not.

BY MR. WELLS:

Q Doctor, clearly, you are a medical doctor. Is that correct?

A Yes.

Q Okay. What is your educational background?

A I was graduated from the Wayne State University undergraduate with a bachelor's degree, magna cum laude, phi

beta kappa, in 1975. And I attended the Wayne State University Medical School between 1975 and 1979, graduating in the top half of the class at the Wayne State University School of Medicine, Detroit, Michigan.

Q Okay. After -- well, strike that.

In medical school -- and I am going to go into your qualifications with regards to medical school. I don't know the extent to which the defense is going to voir -- did you have classes with regards to anatomy generally?

A Yes. The anatomy was a basic core curriculum throughout the entire first year of the first year of school and was repeated in times, when relevant, for the pertinent system that was involved throughout the first and second year.

Q Did you have classes with regards to the effects of drugs on the human system?

A Starting in our second year, there was a six-week core curriculum course in pharmacology. And then throughout the various systems that were covered through the second year, there were repeated concepts of pharmacology pertinent to the system that was being covered, such as the cardiovascular system, neurologic system, so on and so forth.

Q Did you have other classes -- well, clearly, we are here with regards to the DRE protocol. Are there other classes, during your undergrad or grad, excuse me, undergrad or medical school education, that would help you to qualify you to

testify as to the effects of drugs on the human body?

A (No response.)

Q Is that a clear question?

A I'm sorry. Maybe you can repeat it. Go ahead.

Q We are here with regards to the DRE protocol. I am asking questions to just see what your education background was with regards to drug impairment and the human body. With regards to medical school, are there other classes or other experiences with regards to education only that would lend itself to your knowledge with regards to drug impairment?

A Well, even in undergraduate, the courses in a curriculum that's heavily focus on biology, had courses in physiology, which prepare you for understanding how the basic life processes occur, about membranes and how that later is pertinent to the understanding of drugs and drug interactions and how receptors work. And also throughout our clinical years, when relevant -- in fact, they were so relevant that as part of the clinical rotations, we would actually have a clinical pharmacist going on the rounds with the team, because that was instituted probably 15 years prior to my experience, where they added a clinical pharmacologist to attend the rounds and partake in the discussion at the bedside and bring up points regarding pharmacology, when relevant.

So it's fair to say that there was a rather heavy emphasis on pharmacology in medical school.

Q Okay. Upon completion of medical school, was there an internship?

A Yes, sir.

Q Okay. Very briefly -- I don't want to go into a whole lot of detail with it -- describe the internship.

A I chose to do the traditional rotating, what they call flexible internship, the old Dr. Ben Casey, Kildare year where we did two years of internal medicine, two years PD, I'm sorry, two months of internal medicine, two months pediatrics, two months general surgery, and then electives, such as ob/gyn, radiology, pathology, so on and so forth. So it was a traditional, flexible or rotating internship. And that was at Mercy Hospital Medical Center in San Diego, California.

Q Okay. And following that was a residency.

A Yes, sir.

Q Briefly, can you let the Court know that?

A Yeah. I attended one year of a diagnostic radiology residency at St. Mary's Hospital in San Francisco. And when a position opened up in Los Angeles, which was my first choice, for the second year I attended and transferred to USC Medical Center to attend two years of a diagnostic radiology program.

Q Okay. Were you licensed?

A Yes, sir. I was licensed in 1980 and have been licensed and in good standing ever since without a blemish on the file.

Q Okay. And you are board certified, as well.

A I was not specialty board certified, but I passed the national boards part one, two, and three, which allowed me to, number one, graduate; number two, to obtain a license in California.

Q Okay. With regards to your professional background, currently what is your position? What do you do?

A I'm the medical director for the Employee Health Services for the LA County Healthcare Network. So I'm responsible for the 10,000 employees of the medical center at LA County USC.

Q Okay. I am going to back you up to -- well, specifically, have you ever done any consulting work as a doctor?

A Yes. In my private practice, I was a consultant to several companies, such as Sears, Penzoil, 7-Up, Coca Cola Bottling Company in downtown Los Angeles. And I was also asked to examine a protocol by the Public Health Department that was used by United States Immigration in the Western Region for sedating aggravated felons for deportation to their home and repatriation deportation to their home country. And I reviewed, critiqued their protocol and wrote a report discussing why I thought they ran into so many clinical problems while in the process of sedating criminals for deportations. And some of those problems resulted in emergency

landings or aborted landings that caused the Justice Department to be fined per pound for every pound that landed without a plan because of a medical mishap in flight.

So they asked me to rewrite the protocol. And then they asked me to actually administer it, which I did for 182 cases over the next 17 years, which involved sedating these individuals at rather high levels to obtain cooperation, so that they were non-violent and not disruptive of the flight, so that the passengers, the flying public, and the agents that went along with us were not in harm's way. So I had --

Q Okay. I will get into more detail with regards to that later.

A Okay.

Q Back in around 1982, did you have any opportunity to work with either or both the Los Angeles Sheriffs Department or the Los Angeles Police Department?

A Yes. I worked as a moonlighter for the LAPD in their LAPD dispensary.

Q What was that? What do you mean by that?

A Well, the dispensary was set up because of such a large number of the individuals who are arrested and placed in custody. Many years ago, LA had so many mishaps where individuals were jailed at the men's jail and ran into medical problems. So they decided to actually have a treatment area or the dispensary so that before an individual is booked into the

facility, that they were cleared medically, whether it is appropriate and safe for them to be housed in the LAPD jail.

And I was part time there for several years. And then I was offered a full-time job with the benefits, which I took because we were able to get all the full-time hours and benefits for approximately 7 or 8 to 24- or 12-hour shifts. So I was working there.

And I also was working for the LA Sheriffs Department at their central men's jail in downtown Los Angeles. And I would take the weekend shifts and was responsible for not only triaging and making sure that those that are arrested are booked there safely, but there was a 400-bed infirmary hospital there, as well. And I ran -- was responsible for that for upwards of 80, 90 hours on the weekends.

Q I'm sorry. How many beds? I apologize.

A I think there's 350, 370, almost 400 beds in that facility.

Q Okay. And you were involved with regards to that for how long?

A Well, I was a part timer, and then I was offered a three-quarter time position for several years. And my work at LAPD and the sheriffs department abated as soon as my private practice was up and running. And it started in 1989. And by 1991 we were involved enough and busy enough to where I was forced to relinquish my hours at the correctional facilities.

Q Okay. So from 1989 to 1991 was the time that you were at the dispensary. Is that correct?

A No. I was there from '82 to '90 in a part-time capacity, which advanced to full time. And then I backed off to part time. And then I had to quit.

Q Okay.

A And the sheriffs department, it started during residency in '82. And then it went to three-quarter time somewhere around '84. And I think it ended in around '87.

Q Okay. Now with regards specifically to your time at the dispensary at the LAPD, did there ever came a time where you came in contact with people who were impaired by drugs or substances?

A Yes. The eighties were a very strange time for the LAPD. There was -- drugs were rampant. And literally three out of four individuals that were arrested had some indicia of impairment or intoxication or drugs on board or withdrawing or some issue medically that related to drug use and abuse.

Q Okay. Did there come a time when you had to look up the total numbers of the people that had been involved with that were actually in some way or another impaired?

A I was asked to do that by a court years back, as part of my qualifications. We did a relatively good accounting, I think. And there was somewhere upwards of 5,000, 6,000, or 7,000, somewhere near 7,000 individuals that were

triaged by me during my time with either the LAPD or the sheriffs department.

Q And were all -- were these 7,000 people -- this is just the total that you triaged or were all these 7,000 people considered impaired? I am trying to just clarify.

A Well, actually, I shouldn't -- if I said impaired, I was wrong. There must have about 11,000, 12,000 total, of which the estimate that there was drugs involved in a significant percentage for the total of about 6,000, 7,000.

Q About how many a day would that be, ballpark?

A Twenty-five. Now these were not necessarily impaired, although some of them were. Some of them may have been withdrawing from drugs. Some of them may have admitted to drugs. Some of them may have had altered physiology because of the drugs. Nevertheless, it was still a significant percentage of the total number that came by where drugs was a significant feature of their presentation in the dispensary.

Q Okay. Have you ever been published or had any patents?

A I stumbled upon an idea for a patent that actually was granted years ago about a thin layer deposition of titanium on extruded teeth for reimplantation.

Q Okay. Have you ever been published?

A No.

Q Okay. And you indicated earlier that you have

testified previously. Have you ever testified previously as an expert? And how many times?

A Yes, upwards of 15 or so times.

Q Have you ever qualified to testify with regards, well, specifically for and in regards to the DRE program?

A Yes, sir.

Q About how many times?

A Upwards of 15 or so times.

Q Okay. In what capacity were you found to be an expert?

A Examining individuals under the influence and impaired by drugs or alcohol.

Q Have you participated in any professional lectures or presentations?

A Yes. I gave a lecture in 1995 to the International Association of Chiefs of Police.

Q Okay. Are you familiar with the DRE program?

A Yes.

Q Okay. When did you first come into contact or made familiar with the DRE program?

A When I was working for the LAPD in the dispensary, there were a constant flow of officers performing parts of various DRE evaluations, either solo or in groups or under the instruction of an instructor. And they were oftentimes when an individual under a DRE evaluation or an arrestee, who was

evaluated, would be brought into the dispensary because a DRE evaluation was terminated, and they were asking for a medical opinion. There were many times where an individual, having gone through a DRE evaluation, which was completed, where the DRE still had some issues or some questions about some findings and the pertinent relevance of.

There were times where we saw these individuals even after the DRE evaluation was completed. And --

Q What was your initial opinion of all this?

A Well, I was initially amused because --

Q I'm sorry. Did you say amused?

A Amused, yes. I was amused because I remember Ray Messerle, who was a 5'2" police officer, who was stretching up with his with a protractor over some arrestee's nose, trying to estimate what I found later was to be the angle of onset of the nystagmus. And I was amused by that, because I had never seen anyone, nor was I familiar with any medical evaluation that included a protractor over someone's nose to measure the angle of onset.

So I inquired a little bit more and ran across Mr. Dick Studdard, who was called Sergeant DRE, who told me that, you know, it has a -- it's an important part of the DRE process. And he invited me, said, "If you're ever interested, you want to come watch what we do, please feel free."

Q What did you think then?

A Well, I didn't take him up on that. But there were several cases that really became -- made an impression on me, where there was one situation where a motorcycle officer slammed an arrestee in the chair and said, "Here, Doc. This SOB sideswiped 11 cars on the northbound Pasadena Freeway. And he's high on PCP."

And the DRE evaluator was a little late in coming. And he said would I mind if he did the DRE evaluation in that area. And it didn't take very long for him to say that he didn't feel the presentation was consistent with PCP. And he was concerned that it may be a medical reason for the presentation.

Q Did you find out what, in fact, was the problem?

A Yeah. What I -- what we did -- it's not unusual for someone that is lethargic, was pale, sweating, I said, "Let's do a quick finger stick glucose." And his glucose was not measurable. So we gave him an amp of 50-percent glucose. And within 40, 50 seconds, he was lucid, oriented, appropriate, apologetic.

Q So what actually was his problem?

A He was -- he had started exercising. He was a known diabetic on insulin, who had been on the same level of insulin for years. And he started exercising, perhaps not understanding that that drops your need, your requirement, for insulin, in which case the insulin had more of an effect that

it normally did. And he became hypoglycemic.

Q Okay. Now you said there was another time that actually impressed you.

A There was a case where I was coming on the night shift. And there were paramedics in the jail resuscitating an individual. So I ran up to see what was happening, because that was such a rare occurrence, because that's the whole reason for the dispensary to be there, so there were no paramedic runs.

So --

Q Dr. Zuk, I know I am asking the questions, but --

A Yeah.

THE COURT: I don't hear as well as I used to, Doctor. It helps me here as well, when you --

THE WITNESS: If we can see the mouth work.

THE COURT: Yes. Yes. I'm not completely deaf, but my ears don't work as well as they used to. I am trying to avoid wearing the hearing device we have, because I am too vain. But if you look this way, it helps.

THE WITNESS: Shall I back up to the beginning?

THE COURT: No, no, no. No, that won't be necessary. I have been following along.

THE WITNESS: Okay.

MR. WELLS: And I think Mr. Cruickshank's head about exploded when you suggested that.

THE WITNESS: Yes. So I came to the cell where this individual was being resuscitated. And he was given an amp of a narcotic antagonist to reverse what appeared to be a narcotic overdose. So I went down and looked at the paperwork that the physician before me had signed. And he cleared him to be housed in the jail with the diagnosis of central nervous system stimulants or amphetamines, stable vital signs, okay to book.

So it came to our attention that this individual, before being seen by the physician, had a DRE evaluation. So we looked at the DRE evaluation. And the evaluation was a combination speed ball/heroin central nervous system combination.

So this information evidently got back to the management. And there was an inquiry about how that had happened. And following the research into how this event happened, the management at LAPD put on or required all the individuals working in the dispensary, including physicians and nurses, to attend a one-hour or two-hour primer course put on by the DRE department about the DRE program.

So --

BY MR. WELLS:

Q Just briefly, at that point, what was your opinion of the DRE protocol at that point?

A Well, it was starting to catch my attention, because it became clear that when this individual was arrested and came

to the attention of the physician, the physician was very impressed with the signs of the central nervous system stimulant, which were shorter, briefer in duration. And by the time he was allowed to go into the cell, the effects of the stimulant had worn off. And the narcotic was in a high enough level and has a longer duration to where that finally became physiologically relevant. And that's when the blood pressure started dropping and his respirations slowed. And that's when he required resuscitation.

So that made such an impression on some of us that I attended the two-hour course orientation to the DRE program, where I heard that already several years prior to that, there was a Johns Hopkins study where the DREs from LA were asked to perform evaluations in the Johns Hopkins emergency room, and that they had evidently performed so well in their predictions of a drug impairment, that I decided to take them up on the invitation to take the course. So I attended the two-day preliminary course.

Q When was that? When did you take the two-day course?

A That was back in, I believe, the summer of '89.

Q Okay. And you took, I'm sorry, the two-day course?

A Yes. And that was followed by the five-day course, which I took and completed and passed the exam. And my interest was to obtain some of that, some of those skill sets,

so that I could incorporate them to work in the dispensaries or even at my clinic that was starting to grow in volume.

Q Okay. You indicated you were going to obtain skill sets. These were skill sets that were not necessarily taught at this point through med school?

A Right.

Q Explain just generally, briefly, nothing way in depth at this point.

A Right. I think what impressed me was the prediction of the blood alcohol concentration, assuming no other central nervous system depressants with the angle of onset of the nystagmus. So I would do anecdotal, just follow-ups on the individuals that crossed my path, where they came, they were booked. We had a baseline breath alcohol test, breath alcohol level. And I would ask two hours later for the jailer to bring the arrested individual down from the cell. I asked if they would cooperate. I was interested in following the shakiness, the jerking of their eyes. And many times they cooperated. Sometimes they needed an incentive. So I had the jailer give them an extra jailhouse burrito. And that usually gave me two or three further evaluations.

And there times I would follow the decline of breath alcohol over a 12-hour period such that -- an individual may have come in the night before, agitated, aggressive, uncooperative. And certainly the next morning, they seemed

much more cooperative. And I was able to verify for myself that in fact the angle of onset of the horizontal gaze nystagmus did change with the decreasing level and the decline of the breath alcohol level.

So that also made a very significant impression on me. And there were times when I was encountering an individual at the dispensary, where I noticed the early onset of nystagmus. And yet I would ask them to give us a breath alcohol. And there were times when I was able to predict the presence of central nervous system depressants by confronting these individuals. And I would assure them that the police officer was not longer there, it is not part of their booking record, could you tell me what you took last night or recently.

And there was a very significant correlation of being able to predict that there were other drugs on board, when you had a blood alcohol, breath alcohol level that didn't justify and wasn't consistent with the early onset of the nystagmus. So that helped predict something that I didn't know that one was able to do clinically by an examination, a check for the nystagmus.

Q Okay. And --

A And as per my recollection, that was not presented anywhere during medical school or during the internship.

Q Okay. So you took the DRE school in 1989.

A Yes.

Q Are you a member of IACP?

A No.

Q Have you ever been a member of IACP?

A No.

Q Did you ever teach at a DRE school?

A I was asked to do the vital sign presentation lecture, I think, for two classes.

Q When was that?

A In 1990 or 1991.

Q And how many times did you do that?

A Twice.

Q Have you ever been given an honorary award from the IACP with regards to your support of the DRE program?

A I received a certificate in the mail a couple years ago stating that I was -- they appreciated my participation. And they gave me a plaque.

Q Okay. Now you have also indicated that you testified a number of times, about 15 times, on behalf of the DRE protocol. Is that correct?

A That's right.

Q Is there any other attachment that you have with the DRE protocol?

A No.

Q Okay. Are you vested in this program, other than the fact that you believe in its accuracy?

A I -- there is no significant increase in my income annually. I do one to cases per year

Q What do you mean you do one to two cases per year? Describe that for the Court.

A I think over the last 10, 15 years I've been asked to testify 10 or 15 times and probably one or two a year. There are some years where I'm not called at all.

Q Okay. The fact of the matter is you indicated you didn't receive a significant amount of money for any of these things. Then why do you do it?

A Well, there are not too many physicians that have the benefit of the experience that I did. I've got to admit there was an event back in '81 where my life was saved by someone who had the skill set, even though he was not a physician, to understand that my blood pressure was dropping while my pulse was rising, which means that I'm in impending shock. And they decided to take me to the nearest hospital instead of the hospital that the ambulance company was contracted with and saved my life.

And so I feel compelled to help some way, if I can, shed some light on this topic.

Q Okay. Other than the things you have indicated, do you do regular workshops with DREs?

A No.

Q Do you regularly teach DREs? The soonest one was in

1991, I believe you indicated.

A Never. No.

Q Are you involved in a technical advisory panel?

A No, sir.

Q So other than occasionally, once or twice a year testifying a year on their behalf, you don't have any attachment to the DRE protocol. Is that correct?

A I'm very fond of it. I believe in it. That's the extent of the attachment.

Q Okay.

MR. WELLS: And if there is no objection, I move to admit his CV.

MR. DeLEONARDO: I do have an objection as to that only from the standpoint -- and maybe we can wait to submit it. But he cites places he testified in legal holdings. So if we can redact that, this stuff, I don't have any objection to the rest of it. But I believe that includes medical conclusions, I mean legal conclusions that I frankly disagree with some of them, the way they are written. So I think he could -- he could certainly have in there where he testified and the subject matter he testified, but not the legal conclusions.

So perhaps if we could redact that in some fashion. But that is my objection. And I don't believe that is properly the subject of a CV. It is basically a legal summary of the holdings.

MR. WELLS: Which I would not have an objection to, as long as it is listed, the cases that were -- that he was involved with.

MR. DeLEONARDO: Yes. And that is what I am saying. Perhaps we could delay admission. But that is my only objection to the CV.

THE COURT: All right. It has been marked for ID.

MR. DeLEONARDO: If we just take that out before it is actually admitted.

THE CLERK: State's No. 15.

(The document referred to was marked for identification as State's Exhibit 15.)

MR. WELLS: And I guess it is conditionally accepted once it is redacted.

THE COURT: And that would be State's --

THE CLERK: Fifteen.

BY MR. WELLS:

Q All right. Dr. Zuk, I am going to get into the DRE program in its entirety. Are you familiar with the fact that the DRE program is a 12-step process and evaluation?

A I understand that that's the way the DRE organization their instruction, yes.

Q Okay. I am going to present to you what has been admitted State's Exhibit No. 5. Are you familiar with that?

(Handing document to the witness.)

A Yes.

Q Can you flip it over and say what is on the front side?

A It's the "Drug Influence Evaluation Symptomatology Matrix."

Q And on the back of it?

A Is the 12-step program.

Q Okay. I am going to be asking to go through the 12 steps with you generally.

A Uh-huh.

Q Now as a physician, generally speaking, what is it that you do as a physician with regards to determining whether or not somebody has an issue?

A Well, the traditional approach of a physician to a clinical issue is over 2,000 years old and involves classically the history, which is divided into several parts. It usually starts with the chief complaint, which is a shortened version of the main problem, followed by the history of that problem or called the history of the present illness, followed by questions related: Are you taking medicines? Do you have any allergies? Have you had any surgeries in the past? What is your occupation, any occupational exposures, risks? What is your social history in terms of smoking, drinking? Do you live with the family? Do you have children? Do you have any

habits, smoking, so on and so forth?

And it then goes towards the physical examination. The examination starts with usually what is visible. So the examination, as it's recorded, typically will sound -- there's a well-developed, well-nourished male, awake, alert, oriented times three, and no apparent distress, which is a very typical beginning for the physical examination.

Next it goes to the vital signs, the appearance of the skin, and usually goes from top to bottom, an evaluation of the head, eyes, ears, nose and throat, down to the extremities and the neurologic exam.

And then it is towards the conclusion then, following the history, which also, by the way, and I'm sorry I omitted that it includes a review of systems, meaning one -- after the physician feels he's asked the relevant questions to get an overall picture of the issues relevant to the complaint, he then asks questions that may not appear to be relevant to the complaint. And they usually would go from the neurologic to the extremities. And it would cover such issues as: How's your vision? Any double vision? Are you having any headaches, any neck pain, any swelling, any lymph nodes or lumps, any neck pain, a cough? Do you have any shortness of breath? Do you sleep on several pillows, have any chest pain, shortness of breath? How many -- do you have any abdominal discomfort, normal bowel movements? What is your diet like? Any urinary

issues?

So it's a review of all the things to refresh the patient. Perhaps he has some symptoms that he didn't equate or understand that may be part of the, or related to his history or the presenting complaint.

So after all the questions are asked, the physical examination is performed. And then the physician forms an assess, usually in the form of what's called a differential diagnosis. So he lists in order the diagnoses which are most likely to explain the entire constellation of the history and the physical examination findings.

And usually there's a plan. And it usually will involve the treatment that could be begun, even before confirmatory lab tests or studies are done, and the plan for the patient so that his differential diagnosis can be ruled in or ruled out and a treatment plan.

So --

Q Actually, I apologize, Doctor.

MR. WELLS: And I apologize to the Court. I forgot an important step. At this point, the State would move to admit the doctor as an expert in the fields of general medicine and the general application of the DRE protocol. I apologize. I meant to do that before going into that last set of questions.

MR. DeLEONARDO: I don't have any objection to that.

I would reserve -- obviously, I have questions about his background, but I think it goes to weight.

MR. CRUICKSHANK: The same.

THE COURT: All right. We will accept Dr. Zuk as an expert in general medicine. And you tendered him also as an expert --

MR. WELLS: In the general application of the DRE protocol.

THE COURT: All right. We will accept the doctor as tendered.

MR. WELLS: And I apologize for taking that out of order. I meant to do that earlier.

THE COURT: That's all right.

BY MR. WELLS:

Q Dr. Zuk, I apologize for taking you out of your train of thought. So that is what generally happens, when you are doing an evaluation. Is that correct?

A Correct.

Q In the medical profession.

A Correct.

Q Okay. Now with regards to the 12-step process within the protocol, are there any correlations between what you do and what the medical profession does generally in the 12-step process?

A Well, step two, three, four through number nine,

from two to nine have their correlation in the physical exam, which I could talk about in more detail. Number ten is statements, subject statements, and observations. That is clearly -- would have the analog in the physician's approach to a clinical dilemma, as part of the history.

So the interview of the arresting officer --

Q Let's take them one at a time. Step one.

A But the interview of the arresting officer and the suspect statements and observations are clearly part of the history. Now how would the -- can we go with the history first?

Q Sure.

A The interview of the arresting officer is valid information. It's completely acceptable where a physician will take the history, if necessary, from the family. Maybe grandma's unconscious. We can get information from the family for those individuals who encounter the patient. So interviewing the arresting officer brings valid information that is relevant, as part of the history.

Also, the suspect's statements and observations are, in fact, part history and part physical. But they are more information that the DRE officer has to help in formulating his constellation of findings during the DRE evaluation.

Q Okay. So for the history, you would indicate which steps are involved with the general history, the first

indication for a regular medical diagnosis?

A Interviewing the arresting officer and the suspect's statements and observations.

Q And that would be steps two and ten?

A And ten, right.

Q Okay. Now with regards to step one, how does that fit in the plan?

A Well, it's the breath alcohol concentration. That's a -- that has it correlates in the physician's approach to a clinical dilemma in that he may need a screen, a screening test, for blood or urine to triage the individual appropriately to find what level of severity the issue is, or it helps him plan the approach to the patient, if it's a more urgent issue or if it's an issue that can be addressed at a time that's appropriate and convenient for the examining physician.

Q Okay.

A So it's just a -- it's more -- now it's becoming more objective data. It's not any different from a lab test.

Q Okay. Now -- and continue onto step three and what is its correlation?

A Step three is the preliminary examination, more questions, examination of the pupils and eyes. Clearly, the eye examination is an integral part of a physician's approach to a patient. In the DRE evaluation, it's a critical part, because the retina and the eyes, the retina is actually an

outgrowth of brain tissue. Embryologically, the part that is the back of our eye actually moves forward from an out pouching of our brain. So with the examination of the eyes, we're getting some indication of the status of the central nervous system.

In addition, examining the eyes and pupils gives us information, gives the examiner information, that is beyond the ability of the individual to control. Normally, the examination -- our examination of our eyes is beyond our ability to change, as opposed to examination or palpation of our abdomen, where we're able to say, well, it doesn't hurt me, when in fact it could hurt you. We don't have significant control over the size of our pupil or the reactivity of our pupil or the motion, extraocular motion, of our eyes.

Part of step three also is the first pulse. Now if we could lump the temperature, blood pressure, and pulse, those are called vital signs, because they are in fact that. They are a critical part of our physiology and shows that for us to be in a stable state, we have to have stable vital signs. So I think the pulse, blood pressure, and temperature clearly have the correlation in the examination that a physician would perform for his purposes with a patient.

Q So that would be essentially steps three and step six. Is that correct?

A Well, and step seven, the dark room examination, as

well. Typically, a physician tailors his examination, the depth of the examination, and the degree of the examination, that it's pertinent to the presenting complaint and pertinent relevant to the history. So there would be times when a physician may in fact darken the room and look at the reactivity of the pupils in darkness and in direct light and indirect light, as well.

So I would lump number seven as part of the examination of the eyes, which also has its correlation with the physician's exam.

Q Okay. So that would include which tests then?

A Number seven, dark room, and the eye examination, number four, and the pupil and eyes part of three.

Q Okay.

A And injection -- no. Third check of the pulse would also fall in there.

Q Okay.

A The next part that comes up are psychophysical test, the Romberg walk and turn, one-leg stand, finger to nose.

Q Now I want to go into a little bit of detail with regards to these. And again, you indicated that it depends on the depth of the, you know, diagnosis or the depth of what it is that the doctor is looking for. Just from personal experience, I have never done a Romberg test going to the doctor. I have never gone to the walk-and-turn test. Just

generally speaking, when would this be applicable in the medical professional?

A It could be for a neurologic finding. If there is -- a simple complaint is, you know, I have numbness in my fingertips in my left toe. That would already inspire the physician and demand a complete evaluation of the central nervous system, which would include probably all, the Romberg and the finger to nose and the walk and turn, as well.

So those are typically part of the neurologic examination. But it would also -- the Romberg could also be used by any general physician who has an individual who has vertigo, may have hearing loss, dizziness, unexplained vomiting. So that is a -- it's a maneuver that has been part of the medical testing skills that are taught through schools throughout the country and throughout the world for physicians.

Q Okay. And you are doing a good job trying to focus on the judge. I am just going to remind you to be sure you are facing him and not me. I know it is kind of an unnatural position.

With regards to the Romberg, is there a difference in the way that -- well, strike that.

In the medical community, how is the Romberg performed?

A It's typically -- if you have ten physicians demonstrate the Romberg, you'll have probably ten variations.

But pretty much they'll all have -- the basics would be that you do not want to examine the individual for the Romberg with a broad gait, because that would negate the test value. You're checking to see if the person has the ability to coordinate his body and space and has coordination.

So what you want is you want to have them put their feet together toe to toe and heel to heel side by side. So what you're looking at is there are four main areas that could contribute to an abnormal Romberg. One could be in the frontal part of our cortex where we initiate and plan movement and cease movement. Another place where lesions could cause an abnormal Romberg test would be in our auditory system, in our cranial nerve, the vestibular system, which sends signals to the cerebellum and to the brain that tells us, that tells the central nervous system where our head is in space and which way it's rotating or moving forward or backward or rotating.

The next area that a lesion in this area could cause an abnormal Romberg would be the posterior part of our spinal cord, called the posterior columns, which send information from all our sensors in our extremities and throughout our body called proprioceptive sense that tells our central nervous where things are in the body, where is the body, where are the hands, are they forward, are they forward, are they back, are they moving, are they stationary.

So the Romberg test is done with the individual toe

to toe, heel to heel. And you watch their body to see if there is a significant amount of sway. If there is sway, the next question is, is it eliminated with -- is it altered by opening or closing one's eyes. Usually if there's a lesion in the forebrain or the frontal lobe or in the auditory system or in the posterior columns, if we open our eyes, that will mitigate and very often eliminate sway.

However, if there's an abnormality in the cerebellum, then even opening one's eyes will not diminish the amount of sway.

Q Okay. So am I correct in interpreting from what you are saying that they initially do the Romberg with the person's eyes open and then they do the Romberg with the eyes closed? Is that correct?

A Correct. Correct. Or the physician can choose to do it with the eyes closed first. But usually in preparing for that, they've already observed whether they have any coordination problems. And they sway even before he has them close their eyes.

Q Okay. And is that, with the eyes open, the concept called a baseline?

A You could think of it as a baseline. By baseline, some may argue and say, well, the baseline would be if you saw what his Romberg test results were before the pathology, before his complaint, before he became ill. So that would be a true

baseline. So --

Q Okay. Now with regards to the DRE protocol, do they do it with the eyes open first and then the eyes closed? And if they do or do not, can you explain how -- well, no. Just answer that first question. With regards to how it is trained and done in the DRE protocol, do they have their eyes opened, when they do the Romberg?

A Well, I think the focus is on the -- a lot of attention is given to the eyes closed. But the evaluator is also evaluating them while he's talking to them, giving instructions. And that gives an indication of what the Romberg is with the eyes open.

Q Okay. Previously to doing the ROmberg test and the psychophysical test, what was the fourth step that was done previously?

A The eye examination.

Q Okay. And specifically there is, what, the horizontal gaze nystagmus. Is that correct?

A Correct. So at that point you have the individual standing upright, heel to heel, toe to toe, feet side by side. So you're basically getting an idea of what the Romberg result will be like, as you're doing the horizontal gaze nystagmus or the eye examination itself.

Q And their eyes are open at that point in time. Is that correct?

A That's right.

Q Okay. So would that be fair to characterize that as also possibly setting a baseline for the DRE?

A If you want to think of it that way, yes.

Q Sure. And is that consistent? Would that be something which would be acceptable within the medical community?

A Yes.

Q Okay. Is it fatal to the observation made in the DRE protocol, the fact that they don't initially have the person stand there, again heel to heel, toe to toe, and sit there and wait to observe for sway solely at the beginning of the Romberg before doing it with the eyes closed?

A No. There's -- I don't think the procedure is tainted by the -- there are times when one has to accommodate the situation at hand. And during the eighties, we saw individuals that were -- there were necessary alterations to the pattern of the examination because of the situation. There were times when we had to do modified DRE tests, evaluations with individuals hogtied and hallucinating, so that the reality is there. You want to get some information. And if the situation limits and doesn't allow you to do the perfect 12 steps in that entire -- in that order, then that's simply the reality.

Q With regards to -- maybe it will make it a little

easier, if I'm standing over here so I am not directly behind you. I think I need to be closer to the microphone, if I am directly in front of you. Thank you.

Now with regards to the other tests that we have -- the other psychophysical tests, is there a medical correlative, if that is even a word, with regards to the walk and turn and the one leg stand? Is that something which is used within the medical profession?

A Well, the walk and turn is a classic part of the neurologic exam. And it's called tandem gate, when it's in the medical world or when neurologists are discussing it. And it's done, performed, in a similar manner, the only difference being, you know -- when it was demonstrated to me the first time, I remember one of the medical students asked, "How will we know it's abnormal?" And the physician demonstrating and teaching us said, "Well, you'll know it when you see it."

And --

Q Repeat that. I'm sorry?

A He said, "Well, you'll know it's abnormal when you see it." So he's implying that you'll develop your own observations, and you'll be able to tell, based on your evaluations of your patients over time, you'll develop the ability to evaluate and critique a tandem gate or walk-and-turn test to determine if it's done -- if it's abnormal.

And in the DRE protocol, the indications for

abnormality seem to be quantified and more objective than what we heard as medical students, that you'll know it when you see it as being abnormal.

Q So the DRE protocol with regards to quantifying and objectifying, at least for -- was it just the walk and turn or was it also the one leg stand and the other tests?

A For all the tests.

Q It is more objective?

A And of out of necessity, because we're dealing with a layperson. And I think also for reporting purposes, if we know that it's done the same for every evaluation, then literally when the paperwork and the opinion is perhaps reviewed or critiqued, we're basically reading from the same piece of music, same sheet of music, that we know that the same routine is done, so that allows the information to be shared with sort of a less loss of signal, so to speak.

Q Sure. Now with regards the one that I always initially was most incredulous about for any of the psychophysical tests, the finger-to-nose test, is that really very useful? I mean, explain that to the Court. Because when you first hear of it, can you touch your finger to your nose, it just frankly, in my opinion, sounds kind of ridiculous.

A Yes. It seems intuitive to think that almost everyone should be able to do that. But in fact, it's even more of a sensitive indicator very often than the Romberg.

Since the Romberg has the additional variable of lesions of the posterior columns of the spine, it can add to the abnormal findings on that test. We've eliminated that posterior column, because the arms are higher up on the spine. So there's less area of spine to cause -- to have a lesion that would contribute to an abnormal finding. And it's --

Q I apologize, Doctor. I know some of this is technical and hard to understand. But can you rephrase that in a little more laymen's terms?

A Okay. When you find an abnormal Romberg test, one of the possibilities is an abnormality or lesion in the entire length of the spine. Whereas if you have an abnormal finger to nose, the innervations for your finger and your shoulder and your arm movements are so much higher up on the spinal cord that you've eliminated that set of train tracks.

Q From there down.

A Exactly.

Q Got it. Okay. That makes sense.

A And also because of the nature of the movement of finger to nose, that it is more purely a test of antagonist muscles, meaning you have to have one muscle contract as the other relaxes, contract, relax, contract, relax. So you have to -- and there's purely a cerebellar function.

Q Okay.

A Controlling when opposing muscles one relaxes and

one contracts is purely a cerebellar function. So the inability to stop it at the right point is a much more sensitive indicator of an abnormality or inability to coordinate your movements or your body in space than an abnormal Romberg.

Q Okay. Now with regards to the psychophysical tests, these are essentially tests of, I guess, generally impairment. Is that correct?

A They are indicators, I believe, and could be -- abnormal performance could be a sign and contributes to the spectrum of what could be called impairment, yes.

Q Now as we've been discussing up to this point with regards to the psychophysical tests, we've been talking about how it works and how it relates to specifically with medical conditions. That is not what the DRE program is involved in, is doing, when they are performing the evaluations, is it?

MR. DeLEONARDO: Your Honor, I know this is a Friday and --

MR. WELLS: I can rephrase.

MR. DeLEONARDO: -- and I have tried to give some leeway, but we are getting awfully leading. And I think instead of suggesting what the answer should be, I think the doctor ought to be able to just given answer to a direct question. I am not trying to nitpick, but the introductions to the questions are getting in paragraph form. And that is the

only reason I am saying something.

THE COURT: All right.

BY MR. WELLS:

Q I forgot what my question was. Briefly with regards to that, is there correlation between drug impairment and a person's ability to perform the psychophysical test?

A Absolutely. If one is not able to control their body in space or control their movements, that is certainly an indicator of an abnormal finding, of an abnormal performance of the central nervous system or the neuromuscular system, which in fact very often is part and parcel of a physical impairment. And that has an impact on our ability to safely drive a vehicle.

MR. WELLS: The Court's indulgence.

(Pause.)

BY MR. WELLS:

Q And I believe you have already touched upon the vital signs, step six and step seven. So step eight, what is step eight?

A Well, I think, if you don't mind --

Q Sure.

A -- I should have also mentioned that in addition to performing these tests, there is an additional multi-tasking that is part of the DRE version of the application of the Romberg test, walk and turn, one leg stand, and finger to nose,

such that when -- you know, it may be easy for you to perform these psychophysical tests, but when you are asked to at the same distract yourself and estimate time, such as can you estimate the time of 30 seconds, or, instead of just walking and turning, to count for me, that -- it's like asking your computer to multi-task, to do more than just a simple computation.

And what that -- the purpose of that is to unmask an abnormality, which would show up, be more likely to show up, if it's asked to multi-task, as opposed to ask -- to perform the classic Romberg or the walk an turn.

Q Okay. I believe that takes care of step five. The next I believe we are on to was step eight. Is that correct?

A Yes.

Q Okay.

A Muscle tone is a part of the neuromuscular examination. It's not the easiest to interpret. You need quite a back load of experience in putting your fingers on a muscle and testing for muscle tone. Because the range of normal is so wide, that the appreciation for abnormal muscle tone comes with time and a lot of examinations.

Q Now with regards to the medical profession, how is it done in the medical profession?

A There is no standardized way that it's done in the medical profession.

Q When is it done in the medical profession? What is the purpose behind this?

A It's part of a neuromuscular exam. In my -- in our office, very often we're -- I'm testing for muscle spasm for lower back, for example. So I'll take the pair of muscles, the pair of spinal muscles, and dig my fingers into it. Obviously, if I sense there is a tremendous amount of spasm, I -- it feels almost rock solid. So it may be part of a muscular examination or a neuromuscular evaluation.

There are times at the bedside, examining someone's muscle tone in the ICU is a relevant part of the examination. There, more often than not, you're feeling flaccid muscle tone instead of intense muscle tone.

Q Now with regards to the DRE protocol, when they are feeling for muscle tone, how is it performed in the DRE protocol?

A I think the skill is taught to palpate with your fingertips the muscles of the forearm.

Q Okay. And why is that, do you know?

A Well, it's probably less threatening than -- you know, in an arrest environment or a DRE examination environment, when you're behind someone, as I would be tempted to, because I have a sense of what a normal back muscle feels like in terms of tone, that when you're behind the individual, you may feel threatened. So I think when you're standing in

front of them, holding their arm, that's disarming in itself. And as you're looking at their eyes, so they get a feedback from your intentions, as you're squeezing your forearm, they sense -- they don't sense that they're threatened at all, from my experience.

Q Now with regards to --

THE COURT: How about the neck?

THE WITNESS: About the neck?

THE COURT: Yes.

THE WITNESS: Very commonly will -- but I think in our practice, when we look at spasm of the neck, we get as much information by asking them to gently flex to see how much you can do, if you can touch your chin to your chest without any discomfort, or if they start going sideways and you can actually see the bulge. So very often you can get an idea of the tone just by having them do that maneuver. And you don't have to poke.

THE COURT: I actually do exercises for my neck that --

THE WITNESS: Inversion boots.

THE COURT: I do this. I do this. I do -- I have arthritis just about everywhere.

All right. We are going to recess for today, adjourn for the day.

Now, we are back here tomorrow in this courtroom.

MR. WELLS: Really?

THE COURT: Yes. That will be a novel experience. So this room will be secure, if you want to leave your materials here. Let's figure on starting at 9:45.

Now, Doctor, where are you staying?

THE WITNESS: At the famous -- where is this?

MR. WELLS: Best Western?

THE WITNESS: No.

MR. WELLS: Days Inn?

THE WITNESS: Days Inn.

THE COURT: Which one?

THE WITNESS: Days Inn. Days Inn.

THE COURT: Let me tell you the State's Attorney's Office has a lot of money. They could have done better than the Days Inn.

THE WITNESS: I told them I'm a Detroit ghetto kid. I don't need to be pampered.

THE COURT: How about you, Ms. Spirk? Where are you staying?

MS. SPIRK: I am at the Best Western.

THE COURT: You are at the Best Western.

MS. SPIRK: Yes.

THE COURT: I would be interested to see how the rooms, what condition the rooms are at the Best Western, particularly the rooms that the Ravens occupied when they were

here for training camp. They actually have their training camp here in Westminster. And I think they stay at the Best Western.

All right. Everyone, thank you very much. Everyone have a good evening. Now let me ask a question: What kinds of time constraints do we have for Dr. Zuk tomorrow?

MR. WELLS: Dr. Zuk, Your Honor, I believe his flight is out of BWI at, I believe, 6:00 o'clock. Is that correct? So we would want him out of here, I'd say, by --

THE COURT: 3:00?

MR. WELLS: -- 3:00.

THE WITNESS: 3:45 probably.

THE COURT: Yes. You can, depending on traffic, you can get to, many times get to, BWI very quickly. But you never know what traffic is going to be like.

All right. Now, everybody understands that we are going to get Dr. Zuk out of here in time for him to -- so keep that in mind.

All right. Thank you, everyone.

THE CLERK: All rise.

(Whereupon, the hearing was adjourned, to reconvene on September 23, 2010, at 9:45 o'clock, a.m.)

C E R T I F I C A T E

CompuScribe hereby certifies that the attached pages represent an accurate transcript of the electronic sound recording of the proceedings heard on September 22, 2010, in the Circuit Court for Carroll County in the matter of:

Criminal No. K-10-040259
STATE OF MARYLAND
v.
CHARLES DAVID BRIGHTFUL

Criminal No. K-10-040331
STATE OF MARYLAND
v.
HARVEY ALEXANDER CARR

Criminal No. K-10-040167
STATE OF MARYLAND
v.
JENNIFER ADELINE FLANAGAN

Criminal No. K-09-039370
STATE OF MARYLAND
v.
RYAN THOMAS MAHON

Criminal No. K-09-039569
STATE OF MARYLAND
v.
CHRISTOPHER JAMES MOORE

Criminal No. K-09-039636
STATE OF MARYLAND
v.
VALERIE ANN MULLIKIN

Criminal No. K-10-040300
STATE OF MARYLAND
v.
RONALD DALE TEETER

By:

Gail A. Williams, Transcriber

Date