

STATE OF WISCONSIN : CIRCUIT COURT : MANITOWOC COUNTY  
BRANCH 1

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STATE OF WISCONSIN,

PLAINTIFF,

JURY TRIAL

TRIAL - DAY 16

vs.

Case No. 05 CF 381

STEVEN A. AVERY,

DEFENDANT.

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**DATE:** MARCH 5, 2007

**BEFORE:** Hon. Patrick L. Willis  
Circuit Court Judge

**APPEARANCES:** KENNETH R. KRATZ  
Special Prosecutor  
On behalf of the State of Wisconsin.

THOMAS J. FALLON  
Special Prosecutor  
On behalf of the State of Wisconsin.

NORMAN A. GAHN  
Special Prosecutor  
On behalf of the State of Wisconsin.

DEAN A. STRANG  
Attorney at Law  
On behalf of the Defendant.

JEROME F. BUTING  
Attorney at Law  
On behalf of the Defendant.

STEVEN A. AVERY  
Defendant  
Appeared in person.

**TRANSCRIPT OF PROCEEDINGS**

Reported by Diane Tesheneck, RPR

Official Court Reporter

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1 THE COURT: At this time the Court calls  
2 State of Wisconsin vs. Steven Avery Case No. 05 CF  
3 381. We're here this morning on a motion hearing as  
4 part of the continuation of the trial in this  
5 matter. Will the parties state their appearances  
6 for the record, please.

7 ATTORNEY FALLON: Good morning, your Honor.  
8 May it please the Court, the State appears by  
9 Assistant Attorney General Tom Fallon, Assistant  
10 District Attorney Norm Gahn, and District Attorney  
11 Ken Kratz as Special Prosecutors for the State of  
12 Wisconsin.

13 ATTORNEY STRANG: Good morning, Steven  
14 Avery is in person, Jerome Buting and Dean Strang on  
15 his behalf.

16 THE COURT: In terms of the agenda today,  
17 it's the Court's understanding we're going to begin  
18 by hearing the State's motion to admit EDTA test  
19 results. Both parties agree that the State will  
20 make its offer of proof on the record today. The  
21 Court will then hear oral argument and make a  
22 determination as to whether or not the State's  
23 proffered evidence is admissible.

24 Should the Court determine that the  
25 evidence is admissible, the Court will then hear

1 the defendant's motion for sequential independent  
2 testing and funding. And there's also a motion  
3 that was filed, or made orally by the defense  
4 during trial, in which the defense renewed its  
5 fair testing motion. And the Court will hear  
6 oral argument on that at the end of the day  
7 today, time permitting. Counsel, is that your  
8 understanding of our agenda?

9 ATTORNEY GAHN: Yes, your Honor.

10 THE COURT: All right. The State may call  
11 its witness.

12 ATTORNEY GAHN: State would call Dr. Marc  
13 LeBeau.

14 THE CLERK: Please raise your right hand.

15 **DR. MARC LEBEAU**, called as a witness  
16 herein, having been first duly sworn, was  
17 examined and testified as follows:

18 THE CLERK: Please be seated. Please state  
19 your name and spell your last name for the record.

20 THE WITNESS: My name is Marc, M-a-r-c,  
21 LeBeau, L-e-B-e-a-u.

22 **DIRECT EXAMINATION**

23 BY ATTORNEY GAHN:

24 Q. What is your occupation?

25 A. I'm the unit chief of the Chemistry Unit at the

1 FBI Laboratory.

2 Q. And where is your laboratory located?

3 A. It's located in Quantico, Virginia.

4 Q. And how long have you been employed at that  
5 laboratory?

6 A. Since 1994.

7 Q. And how long have you been the unit chief of the  
8 Chemistry Unit?

9 A. Since September of 2000.

10 Q. And what are your duties within the FBI  
11 Laboratory?

12 A. I manage the day-to-day operation of the unit  
13 overseeing not only the cases that come into our  
14 unit for analysis, but also review the results of  
15 the scientists that work under me to ensure that  
16 all of the requirements are in place before the  
17 reports are released to our contributors.

18 Q. And what is your educational background, please.

19 A. I have a bachelor's degree in chemistry and  
20 criminal justice from Central Missouri State  
21 University in Warrensburg, Missouri. I have a  
22 master's degree in forensic science from the  
23 University of New Haven, in West Haven  
24 Connecticut. And I have a doctorate in  
25 toxicology from the University of Maryland in

1 Baltimore.

2 Q. And, Doctor, would you please describe any  
3 experience and special training that you have in  
4 your field?

5 A. Well, when I started with the FBI Laboratory, I  
6 was thoroughly trained in the relevant areas of  
7 forensic chemistry and forensic toxicology, as it  
8 pertains to the types of examinations that we are  
9 typically asked to perform in our laboratory.

10 I worked for four years before I started  
11 with the FBI Laboratory. I worked as a  
12 laboratory supervisor at a medical examiner's  
13 office in St. Louis, Missouri. Before that I was  
14 a chemistry instructor for the University of New  
15 Haven. I worked as a laboratory intern for a  
16 private toxicology laboratory and I have also  
17 worked as a laboratory technician for Monsanto  
18 Chemical Company in St. Louis, Missouri.

19 Q. Do you belong to any professional or scientific  
20 organizations in your field?

21 A. Yes, I do.

22 Q. And what are they, please?

23 A. I'm an active member of the Society of Forensic  
24 Toxicologists in which I serve on the Board of  
25 Directors in that organization and also chair one

1 of their professional committees. Likewise, I'm  
2 a member of the International Association of  
3 Forensic Toxicologists and, again, I'm on two  
4 committees in that organization. I'm also an  
5 active member of the American Academy of Forensic  
6 Scientists.

7 Q. Do you attend conferences within your field?

8 A. Yes, I do.

9 Q. And are you ever asked to present or speak at the  
10 conferences in your field?

11 A. Yes, I am, quite frequently.

12 Q. Could you describe some of those for his Honor?

13 A. I'm asked quite often to be a speaker in a number  
14 of workshops for these different organizations  
15 and I'm also often invited to lecture in areas of  
16 forensic toxicology, specifically with drug  
17 facilitated crimes. I often get invitations for  
18 that.

19 Q. Would you explain a little bit of what you mean  
20 by drug facilitated crime.

21 A. Yes, these are crimes in which, as the name  
22 implies, the crime itself is helped out by the  
23 fact that an individual has slipped a drug and  
24 that drug usually incapacitates an individual so  
25 that the crime can occur.

1 Q. Is the FBI Laboratory accredited?

2 A. Yes, it is.

3 Q. What does that mean to be accredited?

4 A. It's that an outside expert body will come into

5 your laboratory and inspect its practices to

6 ensure that it's following the standards that

7 have been set up by that outside body.

8 Q. And do you undergo proficiency testing at the

9 FBI?

10 A. Yes, we do.

11 Q. And do you yourself undergo proficiency testing?

12 A. Yes, I do.

13 Q. And have you passed all your proficiency tests?

14 A. Yes, I have.

15 Q. Have you ever testified as an expert before?

16 A. Yes, I have.

17 Q. And how many times?

18 A. I don't keep track of the numbers, but it's

19 roughly 40 or 50 times I have testified.

20 Q. Have you ever been rejected as an expert in your

21 field?

22 A. No, I have not.

23 Q. Have you authored or coauthored any peer review

24 journals or articles?

25 A. Yes, I have.



1 Q. And could you explain some of those to the Court?

2 A. I have authored or coauthored approximately 20  
3 scientific articles for chapters in books. These  
4 have ranged in various areas of forensic  
5 chemistry and forensic toxicology.

6 Q. Have any of these articles dealt with the use of  
7 a technique called LC/MS/MS?

8 A. Yes, they have.

9 Q. And could you describe for the Court some of the  
10 articles that you have coauthored or perhaps if  
11 there are any textbooks that you have been  
12 involved in?

13 A. Yes, I have authored an article that analyzes for  
14 a drug called Rohypnol using LC/MS/MS techniques.  
15 I have coauthored an article that talks about a  
16 drug called Mivacurium, also using LC/MS/MS  
17 techniques.

18 ATTORNEY BUTING: Could you -- Could you  
19 just spell, when you get to names of drugs like  
20 that, could you spell them, please.

21 A. Yes, Rohypnol is R-o-h-y-p-n-o-l. Mivacurium,  
22 M-i-v-a-c-u-r-i-u-m. And then, additionally, I  
23 coauthored an article on another drug that's  
24 called Doxacurium, D-o-x-a-c-u-r-i-u-m. And,  
25 again, that's using LC/MS/MS techniques.

1                   I recently was an invited guest reviewer  
2                   for a textbook on the topic of LC/MS and LC/MS/MS  
3                   techniques. And then I have also coedited a book  
4                   on drug facilitated sexual assault that involved,  
5                   within the chapters, the topic of LC/MS and  
6                   LC/MS/MS techniques.

7       Q.     And when you talk about the LC/MS/MS techniques,  
8                   is that the technique that you used in the  
9                   analysis in this case?

10    A.     Yes, it is.

11    Q.     Would you describe how your lab became involved  
12                   in this case?

13    A.     Well, I received a phone call from the District  
14                   Attorney's Office asking if we had a method that  
15                   would allow us to determine if EDTA was present  
16                   in a bloodstain or not. Through the course of  
17                   the conversation, we were asked if we would be  
18                   willing to work this case for the State. And we  
19                   agreed to do the work on this case.

20    Q.     And were you informed of the nature of this case,  
21                   basically that there were accusations of  
22                   planting, by law enforcement officers, of  
23                   evidence?

24    A.     Yes, I was.

25    Q.     And why would the FBI be concerned about a case

1           that involves allegations of planting evidence by  
2           law enforcement officials?

3       A.   Well, one of the many type of cases that the FBI  
4           investigates are corruption by public officials.  
5           So it's one of the areas we consider to be a very  
6           serious accusation for two reasons.

7                        If there's a crooked public official out  
8           there, we want to make sure they get off the  
9           streets. And, likewise, if an innocent public  
10          official is being wrongly accused of something,  
11          we want to at least try to set the record  
12          straight to ensure the public's trust in that  
13          organization or that individual.

14       Q.   Before we go any further, Doctor, I have marked  
15           that Exhibit as 433; is that correct?

16       A.   Yes.

17       Q.   Could you please describe what that exhibit is.

18       A.   This is a copy of my curriculum vitae describing  
19           my experiences, my education, etcetera.

20       Q.   And does that basically summarize what you  
21           testified today about your qualifications?

22       A.   Yes, it does.

23       Q.   Now, you were sent samples to test in this case;  
24           is that correct?

25       A.   Yes, I was.

1 Q. And could you tell the Court what it was that was  
2 sent to you?

3 A. We received a number of different items. They  
4 were swabs, collected from a vehicle, a RAV --  
5 Toyota RAV4, as well as control swabs, and a tube  
6 of blood from Steven Avery.

7 Q. And what type of instrument did you use in  
8 testing these items?

9 A. We used the LC/MS/MS instrument.

10 Q. And could you describe for the jury just exactly  
11 what this instrument is and what it tests for?

12 A. Well, the LC/MS/MS instrument is actually three  
13 different instruments that are linked together.  
14 The LC stands for liquid chromatograph. And what  
15 this does is it allows us to take a mixture of  
16 chemicals and separate them into individual  
17 components so that they are presented to the mass  
18 spec portion, the MS portion, individually.

19 So a good example of this would be if  
20 you had a sack full of marbles, if you will, and  
21 you had small marbles, medium size marbles and  
22 large marbles. And if you even complicate it  
23 more and suggest that the large marbles were both  
24 red -- some were red and some were blue.

25 If you would pass the marbles,

1       simplifying it, through this instrument, it would  
2       separate them out so that initially the small  
3       marbles would come out, and then maybe a minute  
4       later the medium size marbles, and then a minute  
5       later maybe the large blue marbles, and then 30  
6       seconds after that, the red large marbles. So it  
7       allows those to be separated and then introduced  
8       to the next instrument, which is your mass  
9       spectrometer.

10               The mass spectrometer is an instrument  
11       that gives you detailed information about the  
12       weight of the chemical that it's analyzing, as  
13       well as it applies energy to fragment that  
14       chemical into many pieces that presents a very  
15       consistent fragmentation pattern, that forms what  
16       we call a chemical fingerprint, if you will.

17               It allows us to, then, search against  
18       data bases for what chemicals give you that  
19       particular fingerprint, and make the unequivocal  
20       identification of the actual chemical. By  
21       linking two mass spectrometers together, you are  
22       able to do very complex and sophisticated  
23       experiments that improves the specificity and  
24       selectivity of the analytical procedure.

25   Q.   And is this instrument something that is used in

1 the field of analytical chemistry?

2 A. Yes, it is.

3 Q. Would you explain to his Honor exactly what the  
4 field of analytical chemistry is.

5 A. Analytical chemistry is simply a subset of the  
6 overall field of chemistry. And it involves  
7 analyzing matter for specific chemical  
8 characteristics.

9 The most simple form of analytical  
10 chemistry that we consider is, you are doing one  
11 of two things, you are either given a material  
12 and asked to figure out what that material is,  
13 try to identify it, or at least characterize it  
14 chemically; or you might be given a second -- a  
15 separate material and asked to identify the  
16 presence of a specific chemical in that material.  
17 Both of those are different forms of analytical  
18 chemistry.

19 Q. This LC/MS/MS instrument, basically, is this  
20 designed to identify chemicals?

21 A. That's exactly right. It's an instrument that is  
22 designed to identify the presence of chemicals.

23 Q. And does it make any difference what the chemical  
24 is that you test for in this machine?

25 A. Generally, no, as long as the instrument is able

1           to detect that chemical, it can do the  
2           identification.

3       Q.   How long has this LC/MS/MS technology been  
4           around?

5       A.   It's been around for decades.

6       Q.   And who would use this type of technology?

7       A.   Well, mainly chemists; although, it's starting to  
8           get more and more into the biology area, but  
9           primarily chemists are the ones employing it.  
10          These could be chemists in not just forensic  
11          applications, but also in food science; in  
12          agriculture and the petroleum industry; in  
13          athletic steroid testing; in medicine, when they  
14          are looking at proteins and things like that,  
15          trying to map out proteins. Those are just some  
16          of the examples of where it is used.

17      Q.   Are there publications available within the  
18          scientific community about the LC/MS/MS  
19          technique?

20      A.   Yes, there are.

21      Q.   Could you describe for his Honor some of those --  
22          or how many publications there are.

23      A.   There are quite a few. I did a search of what's  
24          called the National Library of Medicines Data  
25          Base. And in the last 20 years there were over a

1           thousand specific articles in just their data  
2           base. These are published journal articles that  
3           dealt with the topic of LC/MS/MS and then there  
4           are many, many more that deal just with the  
5           simpler LC/MS technique.

6   Q.   Are there any text books on this technology?

7   A.   Yes, there are.

8   Q.   Do any particular ones come to mind for you?

9   A.   Well, as I indicated earlier, I was asked to  
10       review one of those textbooks. It's called  
11       applications of LC/MS in toxicology. It's a  
12       textbook that was published by a scientist from  
13       Italy; his name is Aldo Polettini.

14   Q.   And do you take advantage by reading publications  
15       and textbooks just to keep up to date in your  
16       field?

17   A.   Yes, I do.

18   Q.   And, again, I would like you to explain to the --  
19       and I think you touched on this for the Judge  
20       but, again, any articles that you have coauthored  
21       or peer reviewed, publications or textbooks in  
22       this area.

23   A.   Yes, there are many that I have coauthored or  
24       primary authored.

25   Q.   Could you give the Judge an idea of how many and



1           what it means to peer review, and some of your  
2           coauthor experience?

3    A.   As far as numbers that I have authored or  
4           coauthored, I believe there's about four or five  
5           different articles. As far as peer review, which  
6           peer review is simply where a scientist sends a  
7           manuscript of their research into a professional  
8           journal and the editor of that journal then  
9           reviews what -- what they are writing about and  
10          then goes out to the field to find experts in  
11          that particular area, and asks those experts to  
12          critique the work that was done by that scientist  
13          that submitted the manuscript.

14                 They usually have a number of  
15           suggestions that they send back to the editor who  
16           passes them on to the original author. And then  
17           they respond to those critiques and ultimately a  
18           decision is made whether or not it's worthy of  
19           being published in that particular scientific  
20           publication.

21                 I'm often asked to be a peer reviewer  
22           for a number of the professional journals in my  
23           field of study. Usually I have one on my desk at  
24           every moment, essentially, to peer review.

25    Q.   Have any of these dealt with the LC/MS/MS

1           technology?

2    A.    Yes, quite a few have.

3    Q.    And I think you spoke about the availability of  
4           publications and the use of this technology, but  
5           is it widely used throughout the scientific  
6           community, this technology?

7    A.    It is very widely used throughout the analytical  
8           chemistry community.

9    Q.    And what other fields -- and I know you touched  
10           on this, but I would ask you to amplify a bit on  
11           what other fields, besides analytical chemistry,  
12           would find use for this LC/MS/MS technology?

13   A.    Well, as I indicated, in environmental chemistry,  
14           an area where they have used this technique to  
15           test water, soil, or perhaps agriculture  
16           products.

17                   It's also used in food chemistry to  
18           analyze different foods for contaminants, for  
19           example, or to verify that certain things that  
20           are supposed to be in that are there at a  
21           particular level.

22                   It is used in the pharmaceutical  
23           industry when they are looking for new drugs;  
24           drug discovery trials, when they are trying to  
25           identify new metabolites from drugs.

1                   Again, with proteinomics, which is  
2                   studying proteins, it is probably the most widely  
3                   used instrument for that.

4                   And it's used to test athletes for the  
5                   use of steroids.

6                   It is used to look for residues of  
7                   explosives after a suspected bomb has gone off.

8                   Pretty much any organic chemical can be  
9                   analyzed using this technique.

10       Q.       And has the LC/MS/MS technology been subject to  
11               any validation studies by the FBI?

12       A.       Yes, it is has.

13       Q.       Could you describe those for his Honor.

14       A.       Well, whenever we have a new technique that's  
15               introduced into the laboratory, a new instrument  
16               into the laboratory, we basically verify that it  
17               performs at the same level that the manufacturer  
18               claims it performs at. And then we do a number  
19               of studies in which we shoot standards that we're  
20               used to seeing, chemicals we're used to seeing on  
21               other instruments, to ensure that it gives the  
22               appropriate response.

23               Then we employ, when it's time to  
24               actually use that particular instrument for a  
25               procedure that we're going to apply to

1       evidentiary material for a case, we go through a  
2       validation study that verifies things such as  
3       detection limit. It may verify interferences to  
4       that instrument, any matrix affects from the  
5       material that we're going to analyze, and a  
6       number of other parameters, depending on what  
7       type of method we're developing.

8   Q.   Basically, what did the validation studies  
9       demonstrate?

10  A.   The validation study simply demonstrates the  
11       method's fitness, or the instrument's fitness to  
12       be used in the laboratory. It identifies the  
13       limitations, if you will, to that particular  
14       procedure, so, you, as a scientist can understand  
15       where it may not perform at the level that you  
16       had hoped it to, or in contrast, it kind of  
17       supports that it works in the way that you  
18       expected it to work, so.

19  Q.   And has this LC/MS/MS technique been subject to  
20       validation studies by other colleagues in your  
21       field?

22               ATTORNEY BUTING:  Objection, clarify as to  
23       what technique he's referring to, LC/MS --

24               ATTORNEY GAHN:  MS.  The LC/MS/MS.

25               ATTORNEY BUTING:  -- generally, you're

1           talking about, as an instrument?

2                   ATTORNEY GAHN:   Yes.

3                   ATTORNEY BUTING:   Okay.

4   Q.    (By Attorney Gahn)~ Has the LC/MS/MS technique  
5           been subject to validation studies by other  
6           colleagues, within the scientific community?

7   A.    Absolutely.  Part of validation, in a way, is the  
8           fact that it's published.  And as I indicated, in  
9           the last 20 years there are well over a thousand  
10          different articles published by scientists  
11          throughout the world, that have used the LC/MS/MS  
12          technique.

13   Q.    And do you believe that this technique is a  
14          reliable and accurate technique and accepted  
15          within the scientific community?

16   A.    Absolutely, it is, yes.

17   Q.    And does the FBI maintain quality assurance  
18          measures and procedures to ensure that the  
19          testing results are reliable?

20   A.    Yes, we do.

21   Q.    Could you describe some of those for his Honor.

22   A.    We use a number of controls to verify that the  
23          instrument is working properly, as well as that  
24          any procedures that we use on that particular  
25          instrument are performing as they are expected to

1 perform. For example, before we use the  
2 instrument each day, we inject into it a -- what  
3 we call a test mix, which is simply a standard of  
4 either a group of analytes that we're used to  
5 looking at, or in cases in which we're looking  
6 for a targeted analyte, looking for a specific  
7 chemical, we will shoot just a standard of that  
8 chemical daily, to ensure that we're getting a  
9 consistent response, day after day on that  
10 instrument.

11 When we're actually running evidentiary  
12 material, we introduce negative controls which  
13 are simply closely matched to the evidence, the  
14 same type of material that we put through the  
15 procedure. We know those are supposed to be  
16 negative before we start and we make sure they  
17 are negative when we finish, in order to accept  
18 those results.

19 Likewise, we run positive controls.  
20 These are samples that we know are to be  
21 positive, before we start the examination, and we  
22 ensure that they are positive when they are  
23 finished in order to accept the data that came  
24 out of that run.

25 Q. And you have used the term analyte a few times,

1           could you please describe for the Court, what you  
2           mean by analyte?

3       A.    The analyte is simply the chemical that we're  
4           looking for.

5       Q.    And did you use the LC/MS/MS technique to test  
6           for the presence of EDTA in the samples that were  
7           sent to you in this case?

8       A.    Yes, I did.

9       Q.    What is EDTA?

10      A.    EDTA stands for ethylenediaminetetraacetic acid.  
11           And what it is, is it's a chemical.  It's a  
12           chemical that is known as a chelating agent,  
13           which simply means it takes metals out of the  
14           environment that it's in and, basically, attaches  
15           to those metals so they can't be used as they  
16           normally would in their free form.

17      Q.    Could you give an example for his honor about  
18           this chelating of this chemical?

19      A.    Well, one place that we see EDTA used is in  
20           poisoning cases where, for example, if someone is  
21           suspected of having lead poisoning, they will  
22           give EDTA into the body to bind up the lead so it  
23           can't be absorbed into the body to minimize the  
24           toxic effects of that poison.

25      Q.    Where is EDTA found?

1 A. Well, it's -- it's pretty much found everywhere  
2 these days. And I say that because it's the most  
3 abundant manmade chemical that's present in the  
4 environment. We have a really big problem with  
5 it in -- particularly in soil, and in waste water  
6 and streams and such, because it's been used so  
7 much in so many projects over the past few  
8 decades that it's become a real environmental  
9 concern.

10 Q. Why does it pose a problem?

11 A. Because of the stability, it doesn't go away very  
12 easily once it's, you know, as itself. But,  
13 then, in particular, when you bind it with a  
14 metal, it becomes very persistent.

15 Q. What is EDTA used for?

16 A. It's used in a number of products, commercial  
17 products such as shampoos, detergents, where it's  
18 trying to take the metals out of the water that  
19 make your water hard. It will help remove those  
20 metals so you get a better cleaning action with  
21 those detergent or shampoos.

22 It is found in the paper industry, to  
23 help in the bleaching process, to make the paper  
24 whiter. It's found in agriculture products such  
25 as some fertilizers. You see it in foods as



1           preservatives. And, then, of course, we use it  
2           in laboratory settings.

3   Q.   Is its chemical composition known?

4   A.   It is, yes.

5   Q.   And have there been scientific techniques or  
6        methods available within the scientific community  
7        to analyze or test for the presence of EDTA in  
8        substances?

9   A.   Yes, there have been.

10   Q.   Could you describe some of those for his Honor.

11   A.   Again, they are in all those different areas, so  
12        there are methods that are related to food  
13        chemistry that talk about EDTA and the analysis  
14        of it in foods, same with water and in soil, in  
15        commercial products such as shampoos and  
16        detergents; so there are quite a few.

17                Again, if you do a search on -- in data  
18        bases of published articles for methods for EDTA,  
19        there are -- I'm trying to -- I believe there are  
20        over 20 that deal with just LC/MS techniques.  
21        There are over a hundred that have been used that  
22        are published methods that are out there in the  
23        literature for a variety of techniques.

24   Q.   Now you used the LC/MS/MS technique to test for  
25        the presence of EDTA, correct?

1 A. That's correct.

2 Q. Are there other techniques available which could  
3 also test for the presence of EDTA?

4 A. Yes, there are.

5 Q. And would you please describe some of them.

6 A. Well, the LC/MS/MS is a very advanced instrument.  
7 There are simpler forms of the same technique  
8 that could be used. For example, the LC is what  
9 is known as an HPLC, a high pressure liquid  
10 chromatograph. That instrument, attached to a  
11 simpler detector than a mass spectrometer, which  
12 is called a diode, d-i-o-d-e, array detector,  
13 could be used.

14 Then, you could also use a technique  
15 that's called capillary electrophoresis. There  
16 are techniques for using gas chromatography.  
17 There are techniques for doing what is called  
18 nuclear magnetic resonance spectroscopy and --

19 COURT REPORTER: Excuse me, could you  
20 repeat that one more time?

21 THE WITNESS: Nuclear resonance,  
22 r-e-s-o-n-a-n-c-e -- I'm sorry, I misspoke. Nuclear  
23 magnetic resonance spectroscopy.

24 COURT REPORTER: Thank you.

25 A. And, then, you can take any of those -- nearly

1           any of those instruments and link them to a mass  
2           spectrometer to get the information about the  
3           identity of that chemical. It doesn't require,  
4           essentially, the LC/MS/MS to do this particular  
5           analysis. But, I mean, we did employ it because  
6           I think it provides specificity and selectivity  
7           that is important in a legal proceeding like  
8           this.

9   Q.   Who would have these types of instruments that  
10       you described?

11   A.   Any -- Any chemistry laboratory, analytical  
12       chemistry laboratory, is going to have at least  
13       one of those instruments I talked about.

14   Q.   Have other scientists tested substances for the  
15       presence of EDTA?

16   A.   Yes, they have.

17   Q.   And have they published their techniques and  
18       findings in peer review articles?

19   A.   Yes, they have.

20   Q.   Could you describe a few of those for his honor.

21   A.   Well, again, we get into the different areas.  
22       There are publications in the environment.  
23       Environmental studies that have been done looking  
24       at the analysis of water, soil. There's  
25       agriculture products that have been analyzed by

1           EDTA.

2                   The commercial products that have been  
3           analyzed for EDTA using a variety of different  
4           instrumental techniques, the whole gamut: HPLC,  
5           GC, capillary electrophoresis and, then, any of  
6           those techniques linked with a mass spectrometer.

7   Q.   And did you say that these findings and  
8           techniques have been published in peer review  
9           articles?

10   A.   That's exactly right.

11   Q.   And, again, please describe for his Honor, what  
12           is a peer reviewed article?

13   A.   A peer reviewed article is one --

14                   ATTORNEY BUTING: Asked and answered.

15                   THE COURT: Sustained, I have got that.

16   Q.   (By Attorney Gahn)~ Could someone replicate those  
17           testing processes?

18   A.   Yes, they can.

19   Q.   And can the instruments that test for EDTA, shall  
20           we say in agriculture or soil, also be used to  
21           test for EDTA in biological substances like  
22           blood?

23   A.   Yes, absolutely.

24   Q.   What is a blood collection tube?

25   A.   Well, a blood collection tube is the actual

1 vessel, that when you get blood drawn from you,  
2 that's what usually a nurse or a medical  
3 professional will put the blood into. It's a  
4 small, usually glass tube that is under vacuum.  
5 And that vacuum helps draw the blood out of your  
6 vein into the tube.

7 Q. Are there different kinds of blood collection  
8 tubes?

9 A. Yes, there are.

10 Q. Now, Dr. LeBeau, you prepared a short PowerPoint  
11 demonstration; do you believe that would be  
12 helpful for the Judge?

13 A. Yes, it would be.

14 Q. And would you please describe the different kinds  
15 of blood collection tubes available?

16 A. Well, there are a number of different tubes that  
17 are available. And they may or may not have  
18 preservatives and anticoagulants in them. We can  
19 tell what's in a tube simply by looking at the  
20 color of the cap on top of that tube.

21 The red-stoppered tube, for example, has  
22 nothing in it. So when blood goes into it, it's  
23 simply blood with nothing added to it. A  
24 yellow-stoppered tube has citric acid or citrate  
25 in it. Gray-stoppered tubes have potassium

1 fluoride as well as usually potassium oxalate.

2 And, then, we also have the lavender or  
3 purple-topped tube that has EDTA in it.

4 Blood is put into those tubes. They are  
5 mixed up so that any preservative in them is  
6 equally distributed throughout the blood. And  
7 the reason that we have these preservatives and  
8 anticoagulants present in the tubes is that,  
9 because of this, this is what's called the  
10 clotting pathway.

11 We know that when we cut our hands or  
12 something that the blood will clot to stop the  
13 bleeding, most of the time. And that's, in part,  
14 largely due to the presence of calcium throughout  
15 this cascade that leads to the actual clotting.  
16 What the anticoagulants tend to do in the tube of  
17 blood is tie up that calcium to prevent it from  
18 participating in this clotting pathway.

19 So, again, if we go back to the  
20 red-stoppered tube that does not have any  
21 anticoagulant or preservative in it, what happens  
22 after some time of that blood sitting around in  
23 the tube, with calcium that's present from our  
24 natural diet and just normal metabolic pathways  
25 in our body, is the calcium helps make those red

1 blood cells clump together, or clot. And that,  
2 of course, makes it very difficult to use that  
3 blood sample in a laboratory setting for doing  
4 laboratory testing.

5 So that's why we have tubes like the  
6 lavender-top or purple-topped tube containing  
7 EDTA. The EDTA structure is listed down on the  
8 bottom portion of the screen and simply what EDTA  
9 does, as I mentioned earlier, is it binds metals.  
10 Takes metals that are present in that blood  
11 sample, such as calcium, to stop the clotting,  
12 and iron, which is normally present in our diet,  
13 and, again, through metabolic processes binds  
14 them up so that those metals are no longer  
15 available to work as they normally would. And by  
16 binding it up, it -- it stops the blood from  
17 clotting.

18 Here we have the EDTA in the red blood  
19 cells. Again, the iron is floating freely  
20 throughout the blood, initially, as is the  
21 calcium. And once those are mixed up, the EDTA  
22 grabs on to those metals, calcium and iron, and  
23 binds them and forms a metal complex or a  
24 chelate, as I mentioned earlier.

25 But you will notice that there is -- in

1           that tube, there is still EDTA present, what we  
2           call the free acid form of EDTA. That's because  
3           they put much, much more EDTA in those tubes than  
4           what's actually needed for a standard specimen,  
5           for it to work as an anticoagulant and  
6           preservative. So you will have excess EDTA  
7           present.

8   Q.   And I believe you testified that you received  
9           bloodstains from Teresa Halbach's RAV4 to test?

10  A.   That's correct.

11  Q.   And you also received a tube of blood from Steven  
12           Avery?

13  A.   Yes.

14  Q.   And was that a purple-topped tube?

15  A.   It was a purple-topped tube, yes.

16  Q.   And that's the type of tube that you just  
17           described?

18  A.   That's right.

19  Q.   And did you subject those samples to your  
20           LC/MS/MS technology?

21  A.   Yes, we did.

22  Q.   And did you test those samples for the presence  
23           of EDTA?

24  A.   Yes, we did.

25  Q.   Would you describe the steps that you took to



1       validate the method that you used in this testing  
2       process.

3    A.   Well, initially, we -- we had to develop the  
4       method or we had to ensure that the method would  
5       work on the instruments that we were employing  
6       for this particular technique. Once that was  
7       done, we performed four different validation  
8       experiments.

9               One is what we call our detection limit  
10       study. It's simply to determine how low of a  
11       concentration, of EDTA, we can detect using our  
12       method. We did this two ways. The first way was  
13       by taking a solution of EDTA in water and making  
14       dilutions of it until we reached a point that we  
15       could no longer detect EDTA in that aqueous  
16       solution.

17              Then we took a sample of blood not  
18       related to this case, but this blood sample had  
19       EDTA in it. It was a standard purple-topped tube  
20       that had been filled to the standard level,  
21       shaken up. And then we took drops, measured  
22       amounts of blood, out of that tube. And, again,  
23       we measured to the point that we could no longer  
24       detect EDTA.

25              And as it turns out, with this

1 particular technique, the smallest volume of  
2 blood that we can measure out is one microliter,  
3 one microliter is one 1 millionth of a litre. At  
4 that one microliter drop, we were still able to  
5 find presence of EDTA, using this technique.

6 Q. And that would be EDTA in a purple-topped tube?

7 A. That's exactly right. So that was the one step  
8 of the validation we performed, which is our  
9 detection limit study. We also looked for  
10 interferences in normal blood samples that would  
11 interfere with this particular analysis, to cause  
12 confusion when it came time to interpreting the  
13 results. And we did this by analyzing 10  
14 different blood samples, that were collected in  
15 tubes that contained other preservatives than  
16 EDTA; for example a yellow-stoppered tube, or a  
17 gray-stoppered tube, or perhaps a red-stoppered  
18 tube.

19 These are blood samples that were just  
20 ran -- from random individuals. And, again, we  
21 analyzed that, following this procedure and  
22 determined that none of those samples, those  
23 other blood samples, had interferences in them  
24 that would confuse the results.

25 Another part of that study was to ensure

1       that our internal standard, which is simply a  
2       control that we put into every sample that we're  
3       going to analyze, to ensure that that didn't  
4       cause any interferences with our ability to  
5       detect EDTA in the samples.

6               The third step was what we called a  
7       matrix suppression study. And this is something  
8       that is very well known with the use of the LC/MS  
9       technique, especially when you use what's called  
10      electrospray ionization mode, which we did in  
11      this case. And simply what that means is that  
12      there are -- it's a well-known phenomenon that  
13      there are other analytes present in a sample,  
14      that can suppress the signal of the analyte that  
15      you are interested in.

16             So what could potentially happen is, it  
17      makes it look like there's less there than what  
18      is actually there. We evaluated that to ensure  
19      that we weren't getting any significant matrix --  
20      matrix affect. And at the very worse we got was  
21      a 33 percent suppression in matrix -- caused by  
22      the matrix, which is fairly insignificant.

23             And then the final study that we did  
24      was -- I can't think what the final study was,  
25      I'm drawing a blank. Can I refer to my notes?

1 Q. Sure, please.

2 A. Oh, yes, also a very important study is the

3 carryover study, which was essentially to

4 determine whether or not, if you analyze a sample

5 of EDTA, does it show up in the next sample

6 that's analyzed. So we evaluated that as well.

7 We did not see any significant carryover effect

8 using this particular technique. And those are

9 the steps that we used in the method validation.

10 Q. And these steps that you used in the method

11 validation, are these the steps that you normally

12 use in the FBI Laboratory to perform method

13 validation?

14 A. Yes, exactly, they are.

15 Q. Would you describe for his Honor, the analysis

16 that you and others under your supervision

17 performed on the specimens, actually in this

18 case.

19 A. Well, the analysis, your Honor, is simply that we

20 focused our instrument to look for two of the --

21 two of the products that are on the screen. We

22 looked specifically for the presence of EDTA that

23 was bound to the iron in the blood. And we chose

24 iron over calcium because it is naturally present

25 at about a 10 to 30 times higher amount than is

1 calcium.

2 And, then, we also looked for the  
3 presence of the free acid form of the actual  
4 EDTA. Again, that is because there's so much  
5 there in an EDTA tube, that's what you should  
6 expect to see the most of, unless it's a case of  
7 like a poisoning or something, a metal poisoning.

8 Q. Did you develop a protocol or standing operating  
9 procedure for the analysis you performed in this  
10 case?

11 A. Yes, we did.

12 Q. And what is a protocol or a standing operating  
13 procedure -- standard operating procedure?

14 A. A standard operating procedure is simply the  
15 steps that you take in order to complete the  
16 analysis. And it's done to ensure that you --  
17 that it's done consistently time after time. It  
18 includes the information, the background  
19 information, and all the materials that you need  
20 to perform the analysis, much like a recipe in a  
21 cookbook. It tells you what you need and, then,  
22 the stepwise procedure to actually carry it out.

23 But it also includes important things  
24 like references you relied upon in developing the  
25 procedure and includes the limitations of the

1 method or the results of the validation study.

2 Q. I'm going to ask if Officer Fassbender would,  
3 please, bring you an exhibit, which has been  
4 marked Exhibit 434, and ask you to identify it.  
5 Thank you.

6 A. All right. Exhibit 434 is the standard operating  
7 procedure that we developed for the analysis of  
8 EDTA in dried bloodstains, specifically for this  
9 case.

10 Q. And, again, during this analysis, what were you  
11 looking for?

12 A. Looking for the presence of EDTA in both the free  
13 acid form and in the form that's complexed to the  
14 iron in the bloodstain.

15 Q. And did you follow this protocol or standard  
16 operating procedure that you developed?

17 A. Yes. Yes, we did.

18 Q. Is it unusual for the FBI Chemistry Unit Lab to  
19 receive requests to analyze some substance for a  
20 chemical and that you have to develop a protocol  
21 for?

22 A. Not at all. Many of the cases that we receive in  
23 our unit, in particular, would normally be worked  
24 by a state laboratory. But, for a number of  
25 reasons, they are sent to our laboratory;

1 primarily because, either it would be very taxing  
2 on that state laboratory to take people off of  
3 their normal casework in order to develop a  
4 method, validate the method, and then put it into  
5 use; or they may -- in other cases, they may not  
6 have the expertise or the personnel in order to  
7 do that.

8 So many of our requests that come in are  
9 to analyze for unique or new drugs, or to apply a  
10 new technique to a particular analyte. And so  
11 we're very, very familiar and it's a normal  
12 course of business for us to have to develop a  
13 method, validate it, and then apply it to a case.

14 Q. Was there anything in the literature that helped  
15 you develop this standard operating procedure  
16 that you used in this case?

17 A. Yes, there certainly was.

18 Q. I'm going to have handed to you two exhibits  
19 which have been marked Exhibits 436 and 437. I  
20 ask you to look at those and I ask you, do you  
21 recognize those?

22 A. Yes, Exhibit 436 is a manuscript out of the  
23 *Journal of Analytical Toxicology* published in  
24 November/December of 1997, that's entitled *The*  
25 *Analysis of EDTA and Dried Bloodstains by*

1           *Electrospray LC/MS/MS and Ion Chromatography.*

2           And this is one of the -- this is the primary  
3           article that we relied upon in order to develop  
4           the method in our particular -- in this  
5           particular case.

6                     The second article, Exhibit 437, is from  
7           a journal that's entitled *Analytical Chemistry*.  
8           And the title of the article is *Determining EDTA*  
9           *in Blood*. And, again, we relied upon this  
10          article to help us along the way as we were  
11          developing and analyzing specimens in this case.

12       Q.   Do you consider those articles or publications to  
13           be peer reviewed articles?

14       A.   Absolutely.

15       Q.   And could someone take those articles and develop  
16           a testing procedure for EDTA in blood?

17       A.   Yes, they could.

18       Q.   And if someone wanted to, could they make  
19           improvements to the methods addressed in those  
20           two articles?

21       A.   Yes, they can.

22       Q.   Could you again just state, what was the date of  
23           the second article, Exhibit 437?

24       A.   Yes, that is August of 1997.

25                     THE COURT: For my benefit, these are the



1 first two listed items under Item 16, references on  
2 the -- looks like page eight of the attachment to  
3 your submission?

4 ATTORNEY GAHN: That is correct, your  
5 Honor.

6 Q. (By Attorney Gahn)~ And were the instruments used  
7 in those articles similar to the instruments that  
8 you used in your testing in this case?

9 A. Yes, they are similar, but not exactly the same.

10 Q. Could independent researchers, university  
11 research facilities, or other forensic labs,  
12 adopt those procedures and develop a protocol for  
13 testing of EDTA in blood?

14 A. Yes, they could.

15 Q. Did you make any improvements to those articles?

16 A. We did.

17 Q. Please describe for his Honor the improvements  
18 that you made to the existing protocols.

19 A. All right. Probably the most significant  
20 improvement I think we undertook when we  
21 developed our method is, we introduced what's  
22 called an internal standard as I alluded to  
23 earlier. This is simply, for each sample we're  
24 adding a positive control to that actual sample.

25 It's a chemically modified version of

1 the same analyte that we're looking for. It's  
2 simply made a little bit heavier than the normal  
3 analyte. And it allows us to get a very accurate  
4 assessment as to if the actual sample itself  
5 worked, not just the batch run of samples, but it  
6 allows you to assess each individual sample as to  
7 whether or not it should pass or fail your  
8 quality assurance protocols and quality control  
9 protocols you have set up.

10 We introduced that, which neither of  
11 these papers did. We also -- We looked for the  
12 presence of the free acid form of EDTA in one of  
13 the techniques that -- that the first reference,  
14 Exhibit 436, did not look for. So we added an  
15 additional test, if you will, to our protocol,  
16 that allowed us to kind of take a three prong  
17 approach to looking for EDTA in these samples.

18 And we used -- Furthermore, we used a  
19 different LC/MS/MS instrument than what was used  
20 in this -- the 1997 article in the *Journal of*  
21 *Analytical Toxicology*. The instrument we used is  
22 newer than the one they used in this particular  
23 procedure. And improvements have been made that  
24 I believe helped us eliminate one of the concerns  
25 that they reported in this particular paper, and

1           that is of carryover of the samples from one  
2           sampling to the next.

3   Q.   What is a scientific hypothesis?

4   A.   Well, it's -- it's -- it's an idea that a  
5        scientist has that, then, they are going to apply  
6        research, if you will, to either show that their  
7        idea is accurate or if it's inaccurate.

8   Q.   Did you develop a scientific hypothesis for this  
9        case before you did your testing?

10  A.   Well, we did, yes.

11  Q.   And what was that?

12  A.   Again, if I can go to this presentation, the idea  
13        was, what we were asked to do is determine if  
14        someone took a purple-stoppered tube of blood  
15        that has EDTA in it, takes the cap off that tube,  
16        and then pours a drop, or many drops out, onto  
17        the surface, if someone comes along at a later  
18        date, swabs up that dried bloodstain, are we able  
19        to, then, find, on that swab, from that stain,  
20        the presence of EDTA and EDTA linked with iron.

21                That's the scientific hypothesis, is  
22        that we should be able the find the presence of  
23        free acid EDTA, as well as the EDTA that's bound  
24        to iron, off of that stain that's on the swab,  
25        that's collected from a bloodstain.

1 Q. And were you able to do that in this case?

2 A. We were able to perform that analysis, yes.

3 Q. And what was your conclusion?

4 A. Well, we -- we did not find any EDTA, or EDTA  
5 bound to iron, on the swabs that we received in  
6 this case.

7 Q. Were controls run with each analysis that you ran  
8 with the bloodstains submitted to you?

9 A. Yes, they were.

10 Q. Explain what controls are.

11 A. Again, we ran negative controls, these were blood  
12 samples that were not put into an EDTA tube and  
13 then they were -- samples of the blood were  
14 applied to swabs. Those swabs were carried  
15 through the whole extraction procedure. They  
16 were to be negative from the start and at the end  
17 of the analysis they were indeed negative.

18 We ran positive control samples. We did  
19 this two ways. We ran a positive control sample  
20 of blood from a lab volunteer who, again, their  
21 blood sample was put into a purple-stoppered tube  
22 that contains EDTA. That blood sample we  
23 expected to be positive at the end of the run and  
24 it was indeed positive.

25 But, additionally, we took the blood

1 sample that was provided to us from Steven Avery.  
2 We put that on a swab and ran that through as a  
3 positive control. It should have had EDTA in it  
4 because it was in a purple-topped tube, and it  
5 did, indeed, have EDTA in it, served as a  
6 positive control.

7 And, then, as I alluded to, the internal  
8 standard that we introduce into every sample,  
9 that is another control that allows us to assess  
10 that that actual sample worked as expected. So  
11 that was a third type of control we used.

12 THE COURT: I would like to stop because  
13 I'm not following something. I thought in the  
14 exhibit up on the PowerPoint, you said that you took  
15 some blood out of a purple-topped tube, spilled some  
16 of it out, tested it with the swab, and did not find  
17 EDTA or EDTA --

18 THE WITNESS: I'm sorry, your Honor, if I  
19 could just go back. I was asked about the  
20 scientific hypothesis that we had for this  
21 particular case. And the hypothesis being that, if  
22 someone, anyone, were to take a tube of blood that  
23 contains EDTA and put it somewhere, put some of that  
24 blood somewhere, and then someone else comes along  
25 and samples that blood, that EDTA blood should

1 transfer onto that swab.

2 THE COURT: It should.

3 THE WITNESS: Should, yes.

4 THE COURT: Okay.

5 THE WITNESS: And the idea is, the whole  
6 premise behind our protocol that we developed was  
7 that we should be able to find EDTA and EDTA bound  
8 to iron on that swab. And our validation showed  
9 that we can do that. We absolutely can do that.

10 Then I was asked about the results in  
11 this particular case. And the results in this  
12 particular case, with the swabs we received, we  
13 did not detect EDTA and EDTA with iron linked to  
14 it. So this is specifically for the results on  
15 our -- on the case at hand today.

16 THE COURT: When you say the swabs you  
17 received, what swabs are we talking about?

18 ATTORNEY GAHN: He was sent three swabs,  
19 the three that Sherry -- three of the ones that  
20 Sherry Culhane testified to, A-8, the swabbing from  
21 the ignition, by the dashboard by the ignition.

22 (Court reporter asked him to repeat.)

23 ATTORNEY GAHN: A-8.

24 ATTORNEY BUTING: You want to let him  
25 testify as to what he tested?

1 Q. (By Attorney Gahn)~ Would you tell him?

2 THE COURT: I think if this line of  
3 questioning was designed to elicit that, I didn't  
4 get it, so I think you better go back and do it  
5 again.

6 ATTORNEY GAHN: All right.

7 Q. (By Attorney Gahn)~ What did you receive to test  
8 in this case?

9 A. Okay. We received three swabs, ones that were  
10 collect from the RAV4: One swab was reported to  
11 have been collected from near the ignition switch  
12 in the car, another swab was off of a door pan --  
13 door panel area, and the third was off of a CD  
14 case.

15 Q. And those were sent to you and you subjected  
16 those to the LC/MS testing; is that correct?

17 A. That's correct.

18 Q. And what were you looking for in those swabs?

19 A. We were looking for the presence of EDTA in the  
20 free -- the free acid form of EDTA, as well as  
21 EDTA that's bound or complexed with iron.

22 Q. And were you also sent a tube of blood from  
23 Steven Avery that came from the Manitowoc County  
24 Clerk of Court's Office?

25 A. Yes, I was.

1 Q. And what -- Did you test that tube of blood?

2 A. Yes, we did.

3 Q. And what did you test it for.

4 A. Presence of EDTA and EDTA bound to iron.

5 Q. Did you find EDTA in the tube of blood of Steven

6 Avery?

7 A. Yes, we did.

8 Q. Did you find EDTA in any of the three

9 bloodstained swabs from Teresa Halbach's RAV4?

10 A. No, we did not.

11 Q. Now, would you just relate to his Honor, how that

12 testing process fit in with your original

13 hypothesis in this case that you developed.

14 A. Well, the idea was, as part of the validation of

15 the method, is that you can actually still find

16 the presence of EDTA, even if it's collected onto

17 a swab and then sent into the laboratory,

18 essentially.

19 Q. So you were either going to find EDTA, or not

20 EDTA, in the swabs from Teresa Halbach's car?

21 A. Exactly.

22 Q. And you did not find?

23 A. We did not.

24 Q. Would you tell his Honor about your experience --

25 No, I take that -- Strike that. Are their



1 articles about the degradation of EDTA?

2 A. Yes, there are. There are numerous articles.  
3 There's even chapters in books talking about the  
4 degradation, or conversely, the stability of  
5 EDTA.

6 Q. And tell the Judge about your experience with the  
7 stability of EDTA and any tests you may have run  
8 in conjunction with this case?

9 A. Well, specifically, in this article that we  
10 relied upon, *The Journal of Analytical*  
11 *Toxicology*, they talk about it in relation to old  
12 bloodstains. They -- They looked at bloodstains  
13 that were two years old and were still able to  
14 identify EDTA after two years of storage at room  
15 temperature.

16 Likewise, we performed a similar  
17 analysis in our lab in which we looked at  
18 bloodstains that had been put onto cards, spot  
19 cards, EDTA blood that had been placed on the  
20 spot cards in May of 2004 and stored at room  
21 temperature up until they were analyzed, just  
22 last week. And we were able to identify the  
23 presence of EDTA in every single one of those.

24 Q. I'm going to have handed to you an exhibit which  
25 has been marked as Exhibit, I believe, 435. And

1           could you explain to the Court what that exhibit  
2           is.

3       A.    This is a copy of the laboratory I -- laboratory  
4           report that I issued for this case.

5       Q.    And I would like you to explain to the Court a  
6           little bit about the detection level, how low  
7           could you go in detecting EDTA in this case?

8       A.    Well, I can explain it two ways. One way is  
9           talking about concentration of EDTA. And as I  
10          explained earlier, we were able to do  
11          decreasingly lower and lower concentrations of  
12          EDTA in a water solution.

13                   At that -- Using that technique, we  
14          could identify 13 micrograms per milliliter of  
15          EDTA. And that's -- it's a number. It doesn't  
16          necessarily mean a whole lot unless you are a  
17          scientist. But likewise, what we did is we took  
18          a tube of EDTA blood and we did spots of that  
19          blood, to the lowest volume that we can  
20          accurately measure out which is one microliter.  
21          And even that one microliter drop of EDTA blood,  
22          which is the equivalent of about 1/20 of a drop  
23          of blood, even that little amount, we were able  
24          to find the presence of EDTA in.

25       Q.    Based upon your training and experience, and

1 based upon your test results using the LC/MS/MS  
2 technique, and based upon all of the data and  
3 compilations that you reviewed, and basically the  
4 entire case file that you have; do you have an  
5 opinion, to a reasonable degree of scientific  
6 certainty, whether the bloodstains from Teresa  
7 Halbach's RAV4, that you tested, came from the  
8 vial of blood from Steven Avery, which was in the  
9 Manitowoc County Clerk of Court's Office?

10 A. I do have an opinion on it.

11 Q. What is that opinion?

12 A. My opinion is that the bloodstains did not come  
13 from that tube of blood.

14 Q. Thank you.

15 ATTORNEY GAHN: That's all I have.

16 ATTORNEY BUTING: Do you want to take a  
17 break now or do you want to start.

18 THE COURT: Let's take a 10 minute break  
19 and then we'll come back to your cross.

20 ATTORNEY BUTING: Okay.

21 (Recess taken.)

22 THE COURT: And, Mr. Buting, at this time  
23 you may begin your cross-examination.

24 ATTORNEY BUTING: Thank you, your Honor.

25 **CROSS-EXAMINATION**

1 BY ATTORNEY BUTING:  
2 Q. Good morning, Mr. LeBeau.  
3 A. Good morning.  
4 Q. Let's talk a little bit about your background.  
5 Do you have the CV in front of you?  
6 A. Yes, I do.  
7 Q. As I look at it, it -- if you turn to page -- Do  
8 you have anything in here that shows research  
9 interest? Do you have a heading that says that,  
10 or am I wrong? Do you have a heading like that,  
11 a sub-heading that says research interests?  
12 A. I don't notice one.  
13 Q. Well, let's go ahead and mark this.  
14 (Exhibit 438 marked for identification.)  
15 Q. I'm going to show you Exhibit 438, can you look  
16 through that and identify it for us.  
17 A. Yes, this is a declaration that I made in another  
18 case involving EDTA.  
19 Q. Okay. And that's a case called **State of**  
20 **California vs. Cooper**?  
21 A. That's correct.  
22 Q. We'll talk about that in more detail later, but  
23 attached to this declaration, you had also a CV I  
24 believe. And this was filed in -- declaration is  
25 dated April 28th of 2004?

1 A. 2004, that's correct.

2 Q. Okay. And I recognize that CVs can change from  
3 time to time, right?

4 A. That's right.

5 Q. And the one that you filed here today, it being  
6 2007, is going to be somewhat different than the  
7 one you filed in 2004, right?

8 A. That's correct, yes.

9 Q. But in this particular one, you did have a  
10 section called research, areas of research,  
11 right? Highlight it for you there.

12 A. Yes, I did.

13 Q. Okay. And at least as of 2004, you described  
14 your -- you listed six areas of research  
15 interest, okay? Would you agree with me?

16 A. Yes, I do.

17 Q. The first one, which you dated as 1987 and '88  
18 only, was Trace Elemental Analysis of Hair,  
19 right?

20 A. That's correct.

21 Q. 1989, Statistical Analysis of Suicide Deaths,  
22 right?

23 A. Yes.

24 Q. 1991, Nebulizer Administration of Cef -- can you  
25 pronounce that for me?

1 A. Ceftriaxone.

2 Q. That's C-e-f-t-r-i-a-x-o-n-e to follow, right?

3 A. That's correct.

4 Q. Some antibiotics for chickens or something?

5 A. Yes.

6 Q. Okay. And then, 1991 to 1994, you put Postmortem  
7 Redistribution of Drugs?

8 A. Yes.

9 Q. And then, at least as of 2004, the only one --  
10 research interest that you put as still present  
11 was 1998 to the present, Detection of Drug  
12 Facilitated Rape, right?

13 A. That's correct.

14 Q. And 1999 to present, GHB and Drug Facilitated  
15 Sexual Assault?

16 A. That's correct.

17 Q. More or less the same.

18 A. One's a broader topic than the other, but, yes.

19 Q. Okay. And would it be true to say that if you  
20 were to add this section to your CV right now,  
21 updating it to 2007, these would probably say  
22 1998 to present, still?

23 A. No. No, the research section of that old CV from  
24 three years ago, were different topics of  
25 research that I had engaged during my course of

1 study at different universities. So, for  
2 example, the last two items, Detection of Drug  
3 Facilitated Sexual Assault and GHB in Drug  
4 Facilitated Sexual Assault, those were my  
5 dissertation topic for my doctorate.

6 The topic about Trace Elements and Hair,  
7 that was an undergraduate research project I did  
8 at the Central Missouri State University in  
9 Warrensburg, Missouri, was part of a senior level  
10 project. The Ceftriaxone in Foul was a graduate  
11 research project I was employed upon at my job  
12 when I was working at the St. Louis County  
13 Medical Examiner's Office. It was a side project  
14 that my supervisor asked me to work on with him.  
15 And --

16 Q. So let me just stop you for a second, then. So  
17 what you are saying is those research areas we  
18 just described are only research that you did  
19 while you were engaged in some educational  
20 pursuit?

21 A. In an academic -- towards an academic degree,  
22 that's what those specific research projects  
23 listed in that old CV.

24 Q. So in 2004, when you list the Detection of GHB  
25 Drug Facilitated Rape as a research area, you

1       said, 1988 to present, you were still working on  
2       your Ph.D at that time?

3     A.    Yes, I was.

4     Q.    Okay. And you have since completed it?

5     A.    Yes, I have.

6     Q.    So, you no longer are involved in any research at  
7       all?

8     A.    I'm not involved in any research in an academia  
9       type setting. Certainly, we do research to a  
10    small scale with cases as we're asked to be  
11    involved with them.

12    Q.    Sure. But --

13    A.    Not long term research like you would expect  
14    towards a degree.

15    Q.    And when we're talking about academic research,  
16    we're talking about publications, peer review,  
17    things of that sort, right?

18    A.    Well, that's one part of doing research in  
19    academia, that's correct.

20    Q.    Doesn't help much if you are in a laboratory  
21    doing some experiment on your own and devising  
22    something, if you don't publish it and tell other  
23    people what it is, right?

24    A.    Well, I mean, you can't publish everything you  
25    do, that's certainly true. But we do publish



1        methods, for example, that we developed that are  
2        unique and not already out in the scientific  
3        literature. We will publish --

4    Q.    Okay.

5    A.    -- and put it through the peer review process.

6    Q.    Okay. We'll get into that in a minute. But, as  
7        I look at your presentations, the talks that you  
8        give, from 1998 to now, looking at the new CV,  
9        the huge, huge majority of those presentations  
10       are on this topic of GHB and drug induced rape  
11       things, situations, right?

12   A.    That's correct.

13   Q.    In fact, you are speaking in just a couple of  
14        weeks at a Women's Sexual Violence Seminar,  
15        aren't you?

16   A.    I may be, I don't know my schedule that far out,  
17        actually.

18   Q.    You don't know that you are speaking on  
19        March 23rd?

20   A.    I could very well be.

21   Q.    You haven't written a paper on it yet?

22   A.    I may have. I do quite a bit of training on that  
23        particular topic.

24   Q.    So, do I understand, though, that you don't even  
25        know that you are giving a talk in -- March 23rd

1           now?

2       A.    No.  What you understand is, I don't know my  
3           calendar three weeks out.

4       Q.    Okay.  And when I say the great majority of your  
5           talks are on that one topic, would you agree  
6           probably over 90 percent of the talks that you  
7           have given since 1998 are focused on that one  
8           issue?

9       A.    It's a topic that I am well recognized in this  
10          country for being an expert and so I am invited  
11          to do a --

12      Q.    Sure.

13      A.    -- whole lot of training on that particular  
14          topic.

15      Q.    And that has been -- As far as peer review of any  
16          of your research, that's been it; that's where  
17          you have gotten the recognition and the most peer  
18          review is on your work on the detection of GHB in  
19          sexual assault cases?

20      A.    No, I would disagree with that.  It's certainly  
21          an area that I have done a considerable amount of  
22          publication on and personal research towards my  
23          doctorate, but there are numerous other  
24          publications that I have been involved with that  
25          fall outside the area of GHB in drug facilitated

1 crimes.

2 Q. Okay. Let's talk about your -- your experience

3 with EDTA. You have never tested for EDTA before

4 this case, have you?

5 A. Yes, I have.

6 Q. When?

7 A. Approximately 1998.

8 Q. And was that the O.J. Simpson case?

9 A. No, it wasn't.

10 Q. Were you working for the FBI?

11 A. Yes, I was.

12 Q. And were you using a protocol?

13 A. Yes, I was.

14 Q. And Mr. Gahn forwarded you a letter that I sent,

15 requesting copies of information?

16 A. Yes.

17 Q. One of those was a request for any and all

18 protocols that you have ever used testing EDTA?

19 A. Yes.

20 Q. You didn't provide that, did you?

21 A. No, we did not.

22 Q. All you provided was your current protocol,

23 right?

24 A. That's correct. Because this is the protocol we

25 used for this case.

1 Q. Well, how many times have you tested for EDTA  
2 before this case?

3 A. One other time.

4 Q. One other time. And it was a protocol that you  
5 no longer use; is that right?

6 A. I believe we still use a revised version of the  
7 protocol I used in the previous testing for EDTA,  
8 but it was not the same type of scenario. We  
9 weren't --

10 Q. No.

11 A. -- looking for EDTA in a bloodstain, which would,  
12 in my opinion, require a little bit different  
13 approach --

14 Q. It sure does.

15 A. -- to analysis.

16 Q. What were you testing for in that case?

17 A. EDTA.

18 Q. In what?

19 A. I'm sorry?

20 Q. In what?

21 A. In a buffer solution.

22 Q. In a buffer solution?

23 A. Yes.

24 Q. Why would you find EDTA in a buffer solution?

25 A. Well, as I indicated, it's used in laboratory

1 settings and it was a case involving allegations  
2 of a wrongdoing by a forensic lab employee  
3 purposely mixing up a buffer, contaminating it  
4 with EDTA, switching buffers. So, we were asked  
5 to investigate the buffers to see if they had  
6 indeed been switched --

7 Q. Okay.

8 A. -- and that's what it involved.

9 Q. And were they? Did you find evidence of it?

10 A. I don't recall, actually.

11 Q. Really. What lab was that?

12 A. I don't recall.

13 Q. Wasn't that right around the time when the FBI  
14 Lab itself was being challenged and audited for  
15 the very same sorts of concerns?

16 A. No, not at all. We were not audited for  
17 purposely mixing up buffers and to -- as a  
18 disgruntled employee trying to get back at the  
19 organization.

20 Q. I see.

21 A. Not at all.

22 Q. Well, you were audited by the Inspector General  
23 of the United States?

24 A. Yes, we were.

25 Q. And that was in 1999?

1 A. I don't recall the date, but it was in the late  
2 90s, you're right.

3 Q. And it was part of an evaluation of the whole FBI  
4 Lab, not just your unit?

5 A. It was -- It was overall, the practices within  
6 our organization and in our laboratory.

7 Q. And how many different units do you have in the  
8 FBI Laboratory?

9 A. Today?

10 Q. Or back then.

11 A. It's going to be a different answer, so.

12 Q. Well, give me back then.

13 A. Approximately 25 units.

14 Q. Okay. How about today?

15 A. Probably around 30 units today.

16 Q. Okay. And of those 25 units, the Chemical Unit  
17 was one of the units that was audited by the  
18 Inspector General, isn't it?

19 A. Well, all the units were looked at and the  
20 practices of the FBI Laboratory were looked at.  
21 Our unit was one that the Inspector General came  
22 in and specifically was looking at allegations  
23 made by the individual that initiated the  
24 complaint. His allegations against one employee  
25 within our unit.

1 Q. And --

2 A. That's how we were looked at.

3 Q. And the allegation involving that employee

4 concerned a test very similar to what you are

5 doing today, or what you did in this case, that

6 is, a test for EDTA in bloodstains, right?

7 A. Could you repeat that.

8 Q. The individual and the reason that your unit was

9 audited by the Inspector General concerned an

10 EDTA test and a bloodstain that was done by your

11 lab, right?

12 A. That's not my understanding of why our unit was

13 one that was looked at by the Inspector General.

14 You would have to actually ask the Inspector

15 General why they looked at our unit.

16 Q. Well, you are the unit chief?

17 A. I am now, yes.

18 Q. And you are responsible for quality control?

19 A. I am, yes.

20 Q. And if the Inspector General audits your lab and

21 comes up with some recommendations or

22 suggestions, you are going to know that, aren't

23 you?

24 A. Well, when the Inspector General was looking at

25 our unit, I was still an examiner, I was a

1 bench --

2 Q. Okay.

3 A. -- scientist. Since that, there was another unit  
4 chief and then I became unit chief. So there  
5 were -- there was a number of other managers  
6 prior to me.

7 Q. So you have never read the Inspector General's  
8 report auditing your unit?

9 A. I read the Inspector General's report in -- you  
10 know, it was a very large report. I read the  
11 executive summary of that report. And I read  
12 specific allegations against the individual in  
13 the Chemistry Unit --

14 Q. Right.

15 A. -- to see what their criticisms were towards him,  
16 as a educational lesson.

17 Q. And that individual -- Which exhibit is this,  
18 437?

19 A. That is Exhibit 436.

20 Q. Exhibit 436, that individual is one of the  
21 authors of this exhibit, 436, correct?

22 A. That's correct.

23 Q. That is Mr. Roger Martz, right?

24 A. That's correct.

25 Q. And the audit and the allegations that were



1           investigated concern Mr. Martz's involvement in  
2           an EDTA test on a bloodstain, in a case; isn't  
3           that right?

4       A.    One of the areas that the Inspector General did  
5           look at was how Mr. Martz testified in the O.J.  
6           Simpson case in regards to EDTA --

7       Q.    Fine. Thank you.

8       A.    -- the presence of blood, amongst a number of  
9           other things that were allegations made by  
10          Mr. Whitehurst (phonetic) against numerous  
11          employees in the FBI Laboratory.

12      Q.    All right. The FBI Lab -- Exhibit 436, by the  
13          way, this article, that is supposedly a published  
14          peer review article?

15      A.    It is not supposedly, it absolutely is a  
16          published and --

17      Q.    Sure.

18      A.    -- peer reviewed article.

19      Q.    It is. Let's just get clear who wrote it. Okay.  
20          All of the authors are FBI Lab members, right?

21      A.    They were at the time of this --

22      Q.    Sure.

23      A.    -- publication, yes.

24      Q.    Okay. So this article was written by FBI people,  
25          correct?

1 A. Yes.

2 Q. And it was written after the O.J. Simpson case,  
3 right?

4 A. That's correct, it was.

5 Q. And in that case, the issue of a possible stain  
6 having EDTA in it came up in sort of the middle  
7 of the case, right?

8 A. It did, yes.

9 Q. And your lab developed a protocol kind of in the  
10 middle of that case, right?

11 A. Yes.

12 Q. And that was the first time your lab had ever  
13 tested for EDTA on a bloodstain, right?

14 A. I believe that's true, yes.

15 Q. And how many times after that did your lab ever  
16 test for EDTA in bloodstains?

17 A. Never.

18 Q. So until this case, the FBI has not tested for  
19 blood -- EDTA in bloodstains, again, since 1996,  
20 I think this was, right?

21 A. Yeah, I believe it was 1996 when the O.J. case  
22 was going on.

23 Q. So in -- So 10 years go by, even after the EDA --  
24 FBI publishes this peer review article, 10 years  
25 go by before E -- the FBI, again, tests for EDTA,

1           which is this case, right?

2       A.    That's correct.

3       Q.    And you, in fact, have -- As we indicated in that  
4           declaration, Exhibit 438, you have come out on  
5           the side of the government against defendants who  
6           seek EDTA testing of bloodstains in their cases;  
7           isn't that right?

8       A.    No, that's not right.

9       Q.    Didn't -- In the Kevin Cooper case, didn't you  
10          object to the testing of the EDTA stain in that  
11          case?

12      A.    No, I objected to the technique that was used in  
13          order to do the actual testing in regards to how  
14          an estimation of the size of the sample --

15      Q.    Okay.

16      A.    -- blood sample was obtained, as well as what  
17          appeared to me to be the lack of appropriate  
18          controls used by the scientist in this case.

19      Q.    All right. Well, we'll talk about that a little  
20          bit more in a minute. Let me -- So, let's get it  
21          clear then, ever since the O.J. case, O.J.  
22          Simpson case, until this case, of Mr. Steven  
23          Avery, the FBI has never tested for EDTA in a  
24          bloodstain on any other case in this country?

25      A.    The FBI Laboratory has not received a request to

1 test for EDTA in a bloodstain from O.J. -- the  
2 O.J. case until this case and it's been  
3 approximately 10 years; that's a correct  
4 statement.

5 Q. And Exhibit 437, maybe explains why. Do you have  
6 Exhibit 437 in there?

7 A. Yes, I do.

8 Q. Exhibit 437 points out that there was -- there  
9 was some problems in the EDTA test protocol that  
10 was used in the O.J. Simpson case, correct?

11 A. On what page are you referring to?

12 Q. Well, the bottom of the first page and top of the  
13 second, that paragraph, that says, What was wrong  
14 with the laboratory testing? Do you see that?

15 A. I do.

16 Q. What it says is, "What was wrong with the  
17 laboratory testing? First, it was not clear  
18 whether the method had ever been used before",  
19 right?

20 A. That's right.

21 Q. In fact, the method had never been used before  
22 that case, right?

23 A. That's correct. Not the method that we used in  
24 the O.J. case, it had never been used in that  
25 manner before.

1 Q. In that manner, correct, for EDTA stains, right,  
2 in blood?

3 A. That's correct.

4 Q. "Most likely", continuing the quote, "the method  
5 was developed quickly under a great deal of time  
6 pressure", okay?

7 A. Yes.

8 Q. And is that true?

9 A. Yes, that's true.

10 Q. And in retrospect, FBI chemists now believe that  
11 the EDTA detected may have been injection  
12 carryover in the LC/MS/MS instrumentation, right?

13 A. That's correct.

14 Q. And so that particular protocol that was  
15 developed and published and peer reviewed in --  
16 that you have in front of you as 436, the peer  
17 reviews found flaws in this protocol, didn't  
18 they?

19 A. No. Absolutely not. That is, this journ -- this  
20 analytical chemistry paper, published in August  
21 of 1997, was not -- cannot be considered a peer  
22 review of the article that was published in  
23 November of 1997.

24 Q. Well are you --

25 A. This one is published prior to this one and the

1 author of this would never have seen this until  
2 it was published.

3 Q. Have you seen any article, any peer review  
4 response, anywhere, to Exhibit 436, this FBI  
5 published protocol in the testing?

6 A. Yes, I have.

7 Q. Where, can you cite to it?

8 A. Yes, I peer reviewed that article --

9 Q. Oh, you --

10 A. -- internally --

11 Q. Internally.

12 A. -- because part of the FBI Laboratory's  
13 requirements, is before we publish any article --

14 Q. I see.

15 A. Excuse me, I'm not finished.

16 Q. Yes, you are, this is cross; you can explain  
17 yourself later, sir. Thank you.

18 THE COURT: Wait a minute, that's -- that's  
19 part of his answer to the question you asked; I'm  
20 going to let him complete it.

21 A. So, your Honor, as part of any publication that  
22 employees at the FBI Laboratory put out, we're  
23 required to have an additional peer review step  
24 conducted by employees, within our organization,  
25 to ensure that the science is valid, so we don't

1       embarrass ourselves before it goes out to a peer  
2       reviewer. I was an internal peer reviewer on the  
3       article that is in the *Journal of Analytical*  
4       *Toxicology* and I made comments on that article  
5       and sent it back to the researchers that were  
6       involved in it.

7               After my comments were addressed, it  
8       then went out to the actual journal and that  
9       editor of the journal employed some reviewers to  
10      look at it. Now, I don't know who those  
11      reviewers were and I never saw that review.

12   Q.   As a matter of fact, you mentioned, so the FBI is  
13       not embarrassed, the FBI was embarrassed by the  
14       EDTA stain test in the O.J. Simpson case, weren't  
15       they?

16   A.   I would disagree.

17   Q.   Well, they never did it again, did you?

18   A.   We were never asked to do it again. We don't  
19       control the cases that come into our laboratory.

20       A -- Law enforcement agencies ask us for their  
21       assistance and if we were able to provide that  
22       assistance, we will --

23   Q.   Do you know --

24   A.   -- but if we were not asked to do a test, we  
25       don't have control over that.

1 Q. And, of course, defendants can't ask you to do  
2 tests, can they?

3 A. That's -- That's correct. We are a law  
4 enforcement agency. And the funding that we get  
5 from the U.S. congress is to support law  
6 enforcement investigations --

7 Q. Okay.

8 A. -- with the results --

9 Q. You are aware, though, that, over the course of  
10 the year, the last decade, there have been some  
11 cases where defendants have sought to do some  
12 sort of EDTA test on bloodstains, right?

13 A. Yes, I am.

14 Q. Most often post-conviction cases, right?

15 A. Yes.

16 Q. Like the Kevin Cooper case?

17 A. Yes.

18 Q. And would you agree with me that in every one of  
19 those cases that you have heard of, the  
20 government has been opposing the use, or the  
21 protocols, or the methods that a defendant has  
22 used to try and get EDTA stain evidence in,  
23 bloodstain evidence in?

24 A. I don't -- I don't believe they were opposing the  
25 idea of testing a bloodstain for EDTA. My



1           understanding -- and I'm only aware of two  
2           cases -- my understanding is they were opposing  
3           the approach that was taken by the scientist,  
4           that he didn't use good science. The techniques  
5           that he employed, the instrumental techniques, as  
6           we talked about in direct, these are techniques  
7           to identify chemicals. So a chemical is a  
8           chemical.

9   Q.    Sure.

10  A.    But if you don't apply good science to getting to  
11       that answer, that's what becomes in question.  
12       They weren't his -- My understanding is, his  
13       approach was not a well validated approach.

14  Q.    And his approach, when you say his, we're talking  
15       about Dr. Kevin Ballard, right?

16  A.    That's correct.

17  Q.    At the National -- NMS, what's it called,  
18       National Medical Services Lab?

19  A.    That's correct.

20  Q.    And his -- You disagreed with his protocol?

21  A.    I didn't see his protocol; I disagreed with the  
22       approach --

23  Q.    Okay.

24  A.    -- that he testified to in the **Cooper** case, I  
25       believe it was.

1 Q. Okay. Can you tell us of any lab anywhere in the  
2 world that has ever used the protocol that your  
3 colleagues published in Exhibit 436?

4 A. There would be no way to know that. We don't --  
5 There's not a data base that people have to  
6 report to us if they are choosing to take a  
7 journal in a public -- an article out of a public  
8 journal and use it in their own laboratory.

9 Q. Well --

10 A. We would never know if they used it or not.

11 Q. Well, let me just give you an example. Often  
12 times, people publish, in fact, there are some  
13 articles you cited, on the use of LS/MS/MS for a  
14 particular technique, right?

15 A. LC/MS/MS.

16 Q. I'm sorry, LC/MS/MS, right?

17 A. Yes.

18 Q. And the -- by the way there's a slash between  
19 LC/MS/, that's the way it's written?

20 A. That's correct.

21 Q. And often times, in academia, what researches  
22 will do is, they will take one test that's  
23 published and they will test it, report back  
24 whether they get the same results, right?

25 A. That's common when you are dealing with, like, a

1           breakthrough in a new area of science.

2       Q.     Sure.

3       A.     You might have multiple researchers from  
4           different research teams working independently,  
5           yet together, to prove that a new scientific  
6           hypothesis is actually working as they expect.

7       Q.     Sure. That's what science is, right, the whole  
8           idea that you can replicate someone else's study?

9       A.     That is part of it, yes.

10      Q.     And can you tell me of any article anywhere, of  
11           anybody who ever studied and replicated, or tried  
12           to replicate, the test that's -- or the study  
13           that's reported in Exhibit 436?

14      A.     Yes.

15      Q.     Who?

16      A.     Me.

17      Q.     Oh, okay. Anybody besides you?

18      A.     Not that I know of.

19      Q.     Okay. And Exhibit 437, analytical chemistry  
20           article entitled, *Determining EDTA in Blood*, they  
21           used an entirely different method, didn't they?

22      A.     No, absolutely not. They used a very similar  
23           method. The only difference is the -- instead of  
24           using a liquid chromatograph on the front end, to  
25           do the separation of the components into their

1 individual components, if you will --

2 Q. They used a capillary --

3 A. They used capillary electrophoresis, which does  
4 the exact same thing and it's based in a very  
5 similar principle, just uses electrical currents  
6 and charges to cause the separation.

7 Q. But the protocol -- the test they did, is not the  
8 same as reported in the FBI Lab article, is it?

9 A. Well, they are doing mass spec, mass spec to  
10 actually do the identification of EDTA. And it  
11 is very similar to what is published in the  
12 independently done publication in the *Journal of*  
13 *Analytical Toxicology*.

14 Q. And we're talking about this article by Robin  
15 Sheppard and Jack Henion, who at that time were  
16 associated in some way with Cornell?

17 A. That's correct.

18 Q. Do you know them personally?

19 A. I do not know either of them personally.

20 Q. Do you know that neither one of them is with  
21 Cornell any more?

22 A. I don't know that.

23 Q. Okay. But their study was trying to do something  
24 more; their study was actually trying to  
25 quantitate, see if they could quantitate the

1 amount of EDTA, right?

2 A. They were, yes.

3 Q. And your protocol that you used in this case,  
4 which is Exhibit, what, 434? It's up there.

5 A. The protocol was -- I don't believe I have the  
6 protocol.

7 Q. Well, you're familiar with it. Oh, I have got it  
8 with me, I'm sorry. I thought it was just a  
9 copy. This protocol, 434, does not attempt to  
10 quantitate the EDTA if it's found, does it?

11 A. No, it does not.

12 Q. It's simply trying to see if there's any way you  
13 can detect the presence of EDTA.

14 A. That's exactly right.

15 Q. Okay. This protocol, which is Exhibit 434, has a  
16 date of February 15th, 2007, right?

17 A. That's correct.

18 Q. And until that time, until this protocol was  
19 developed for this specific case, the FBI had no  
20 existing protocol to test for EDTA in a  
21 bloodstain, correct?

22 A. I don't believe that to be correct, no.

23 Q. Well, let me go back for just a minute, because  
24 perhaps we have been misinformed. Maybe I have  
25 been misinformed. When were you first contacted

1 by any prosecutor, law enforcement agent, or  
2 whatever, involved with Mr. Avery's case?

3 A. In December of 2006.

4 Q. So between February of 2006 and December of 2006,  
5 nobody from the State contacted you, right?

6 A. Between February of 2006 and December 2006, not  
7 that I recall, no.

8 Q. Nobody called you to say, hey, we have got  
9 some -- a case where somebody is claiming that  
10 evidence was planted and we have some bloodstains  
11 in this vehicle we would like you to test for  
12 EDTA; is that right?

13 A. That's correct.

14 Q. It wasn't until December that somebody first  
15 contacted you from the prosecution team, right?

16 A. To my recollection, yes.

17 Q. That would be Mr. Gahn?

18 A. That's correct.

19 Q. Okay. Is there any reason why you would have  
20 been unable to develop a protocol like this any  
21 time between February of '06 and February 15th of  
22 '07 when you actually did develop it.

23 A. No.

24 Q. So if the State had contacted you a year ago and  
25 said, hey, we would like to test for these

1 stains, we know this guy is claiming that it was  
2 planted, we want to rule out this ridiculous  
3 defense; you could have developed a protocol any  
4 time within that year, right?

5 A. Yes, we could.

6 Q. Okay. Now, when you spoke with Mr. Gahn in  
7 December, what did you tell him about whether you  
8 could do this protocol?

9 A. I said we could.

10 Q. Did you tell him how long it would take?

11 A. I probably gave him a estimate about how long it  
12 would take us to get to it.

13 Q. And what was that estimate?

14 A. I generally say about four to six months.

15 Q. All right. And did he explain to you that, hey,  
16 we have got a trial date coming up on February  
17 5th, that's not going to work?

18 A. He did.

19 Q. And did the he ask you for your fastest -- we're  
20 talking December now -- did he ask you what's the  
21 fastest turn around you could possibly give us to  
22 get this test done?

23 A. I believe he did.

24 Q. And you told him three to four months at that  
25 time?

1 A. I don't know what my response is, but it was  
2 probably in that range, three to four months.

3 Q. And one of the reasons you told him that was that  
4 you had no working protocol that would be allowed  
5 to be used in your accredited lab?

6 A. I think that's the message getting a little mixed  
7 with an in between messenger. What I told him  
8 was, that since we had moved our laboratory in  
9 2003 from Washington D.C. to Quantico, Virginia,  
10 we had acquired a number of new instruments and a  
11 number of the instruments that we had at the old  
12 laboratory did not come with us.

13 So what that involved is, if we had not  
14 used any protocol that moved with us to the new  
15 laboratory, we had to essentially revalidate, to  
16 some extent, if we were putting it onto a new  
17 instrument that it, you know -- the instrument  
18 had never been used before, for this particular  
19 analysis.

20 So my message to Mr. Gahn was that we  
21 had not used the protocol since the O.J. case and  
22 that we would need to bring it up to standard  
23 with today's accreditation standards for our  
24 accrediting value; we would have to make sure  
25 that it met all of our internal quality assurance



1 requirements, because since the O.J. case we have  
2 gone through four different quality assurance  
3 systems in our laboratory, each one is another  
4 step up --

5 Q. Sure.

6 A. -- as far as requirements. So we had to insure  
7 that this protocol that was used in the  
8 mid-nineties met the standards of 2007. That's  
9 essentially what it was.

10 Q. Okay. And you told them, because of all of that,  
11 calibrating the instrument and validating a new  
12 protocol, it would take a matter of months,  
13 right?

14 A. Yeah, that's my general response to any time  
15 we're asked to develop a new method and validate  
16 it. I generally say four to six months because  
17 we never know what major cases are going to  
18 happen in this country that can, you know, divert  
19 our resources to other investigations.

20 Q. Okay. But then in January somebody else  
21 contacted you; is that right?

22 A. You will have to refresh my memory.

23 Q. Did anybody else, in January, contact you, again,  
24 to see if that whole time frame could be changed?

25 A. I really -- I don't know when it was, but I did

1           get a call from one of our special agents in the  
2           local field office asking me if we could help out  
3           on this case. But as I explained to him at the  
4           time is we had already agreed to help out on the  
5           case and that we were going to start doing  
6           something that's rather unprecedented for us. We  
7           were actually going to start working on the case  
8           before the evidence actually got to us, meaning,  
9           we were going to start doing the method  
10          validation work, anticipating that this evidence  
11          was actually going to show up.

12       Q.    So that -- unprecedented is the word you used,  
13              right?

14       A.    Unprecedented in that we actually start to do  
15              work on a case before it shows up into our  
16              laboratory.

17       Q.    And tell the Court what changed, how it is that  
18              in December it was going to take three to four  
19              months to develop a protocol, validate it,  
20              calibrate the instruments and suddenly, now, the  
21              time frame was shortened to a matter of three or  
22              four weeks?

23       A.    The time frame wasn't shortened, there were no  
24              guarantees that we would get it done, never made  
25              a guarantee that we would. But what changed was,

1           simply, we applied ourselves to that and no other  
2           case.  Myself and some of my staff, this is what  
3           we worked on.  And we worked long hours, there  
4           were weekends involved.  There were, you know,  
5           more than the standard normal hours of operation.

6                     That's what happened, you know, we  
7           decided that we would help out.  We committed  
8           that we would work out on the case and we would  
9           try our best to complete all of the work that was  
10          required in order for it to be here during this  
11          court proceeding.  But, again --

12   Q.    Okay.

13   A.    -- we could have failed, quite honestly.

14   Q.    And, by the way, you mentioned long hours, does  
15          the FBI Lab run 24 hours a day?

16   A.    No, it doesn't.

17   Q.    What are your normal hours?

18   A.    7:30 to 5:00.

19   Q.    In the month of February, did you ever arrive at  
20          the office or the lab before 7:30 in the morning?

21   A.    Yes, I did.

22   Q.    What time?

23   A.    Probably 7:15, 7:00.

24   Q.    So the earliest you ever arrived was 7:00 a.m.?

25   A.    The laboratory opens at 7:00 a.m.

1 Q. Okay. But in this case, there were actual  
2 analysts working even earlier than that, right?

3 A. No.

4 Q. Like 5:00 in the morning?

5 A. No.

6 Q. All right. We'll look at some of these sheets  
7 later, perhaps I'm just misinterpreting them.  
8 So, at any rate, when did you tell Mr. Gahn that  
9 you thought, hey, I can get this done quicker if  
10 we work weekends and apply ourselves?

11 A. I never told him that.

12 Q. You never told Mr. Gahn that you could get this  
13 test done before -- or in time for rebuttal of  
14 the State's case?

15 A. No, like I explained, I said we would try our  
16 best to get it done, but I never guaranteed we  
17 would.

18 Q. But while you were doing it, you knew that you  
19 had the time pressure of the trial already  
20 beginning, right?

21 A. Yes.

22 Q. In fact, the protocol wasn't validated until  
23 February 15th, right?

24 A. No, that's not -- that's not correct.

25 Q. Well, what's the date of February 15th on there

1 mean?

2 A. That's the date the protocol was issued.

3 Q. Okay.

4 A. If I can, I can explain the process we go through  
5 to bring our --

6 Q. Go ahead.

7 A. -- protocol on line. The first thing we have to  
8 do is we have to develop the method. And in this  
9 case we had the luxury of having a published  
10 reference to go to. So we didn't have to start  
11 from scratch. We simply went to that method, we  
12 used the same parameters that are published in  
13 this paper from the *Journal of Analytical*  
14 *Toxicology*, the same parameters.

15 Q. You're talking about -- So we're clear, you are  
16 talking about the form of protocol that the FBI  
17 used in the O.J. case, right?

18 A. Well, this isn't exactly the protocol that was  
19 used in the O.J. case. This is not exactly,  
20 there are things done in this paper that were not  
21 done in the O.J. case.

22 THE COURT: Exhibit number what?

23 ATTORNEY BUTING: 436.

24 THE WITNESS: 436, yes.

25 Q. (By Attorney Buting)~ Okay. So you looked at

1           that and then you worked off of that to develop  
2           this new protocol?

3    A.   Well, we essentially set up our instrument so  
4           that it was giving results comparable to what  
5           they were talking about in this paper, meaning,  
6           just injecting standards of EDTA into the  
7           instrument, not with blood or anything.

8    Q.   You can tell us when those first -- those first  
9           steps began?

10   A.   That was very late January into early February.

11   Q.   Okay.

12   A.   And then we -- after we have the instrument  
13           working the way it's supposed to work, set up, we  
14           start our actual validation steps. And this is,  
15           as I described earlier, these are the steps to  
16           ensure that the method is fit for it's intended  
17           purpose. For us to identify any limitations in  
18           that particular procedure that we can then use if  
19           we're trying to interpret data --

20   Q.   And on -- And on what date was that protocol  
21           validated, in your opinion.

22   A.   All of the validation work was done before the  
23           middle of the month, before the 14th of February.

24   Q.   Okay.

25   A.   And then it has to go through a review process --

1 Q. All right. So --

2 A. -- by scientists that are not involved in the

3 actual validation study. So an independent group

4 of scientists looks through all the validation

5 data and to sign their name that they agree with

6 the work that was done and the findings of the

7 validation study.

8 Q. Let me stop you there for one second. A group of

9 independent scientists, you are talking about FBI

10 people?

11 A. That's right.

12 Q. Not outside independent labs, right?

13 A. That's correct.

14 Q. Not other academic researchers, right?

15 A. Yes, that's right.

16 Q. And this protocol, for instance, has not been

17 peer reviewed like it would be if it's published

18 like -- like our Exhibit 436, right?

19 A. Well, the changes were very minor from off the

20 published --

21 Q. Sir.

22 A. -- protocol.

23 Q. This protocol, Exhibit 434, was -- has not been

24 peer reviewed by anybody outside of the FBI Lab;

25 is that right?

1 A. Sir, very few of our protocols are reviewed by  
2 anybody --

3 ATTORNEY BUTING: Judge --

4 A. -- outside the FBI Laboratory.

5 THE COURT: He's entitled to an answer to  
6 his question.

7 A. No, this was not peer reviewed by anyone outside  
8 of the FBI --

9 Q. Thank you.

10 A. -- as it's written here.

11 Q. That's right. And that protocol did not arise  
12 out of any kind of ongoing research, independent  
13 of this litigation, right?

14 A. I'm not sure I understand your question.

15 Q. The development of this protocol was not  
16 something that just came out of independent  
17 research your lab was doing on determining  
18 whether or not you could find EDTA in  
19 bloodstains.

20 A. That is correct. This was generated specifically  
21 by the request to do the analysis of evidence in  
22 this case. That's why we developed this --

23 Q. Sure.

24 A. -- protocol.

25 Q. So it's specific to this litigation, right?



1 A. And then future cases, if we get the request.

2 Q. And there were no industry standards that bound  
3 you to this particular protocol, right?

4 A. No, I disagree. There are certainly standards  
5 that we have to employ that are based on the FBI  
6 Laboratory's quality assurance program.

7 And those are very stringent protocols  
8 and requirements that are, in essence, based upon  
9 our accrediting body's requirements. And that,  
10 we have actually stepped up to a more stringent  
11 accreditation program where we're following  
12 what's called the International Standards of  
13 Operation or ISO protocols. And --

14 Q. Let me stop you there for a second, because  
15 most -- a lot of your testimony on direct was  
16 about this LS/MS/MS technique -- I'm sorry --  
17 LC/MS/MS technique, right?

18 A. That's correct.

19 Q. Just so we're not confused, I'm not attacking  
20 that particular instrument, okay?

21 A. Okay.

22 Q. I'm not challenging the ability of that  
23 instrument to find, in some circumstances,  
24 certain chemicals, okay.

25 A. Okay.

1 Q. Are you with me?

2 A. Yes.

3 Q. So, what I'm trying to focus on here is the use  
4 of that instrument to attempt to find EDTA in a  
5 bloodstain, all right?

6 A. Yes.

7 Q. And that's what your protocol, 434, was developed  
8 to do, right?

9 A. Yes, it was.

10 Q. And you were not bound by any kind of industry  
11 standards in the development of that protocol's  
12 hypothesis that you were trying to find EDTA in a  
13 bloodstain?

14 A. I'm sorry, but I'm not sure I follow you.

15 Q. It's probably a bad question, I apologize. It's  
16 my fault. Let me go at it this way. As far as  
17 you know, is there anybody else in the country  
18 who is doing testing for EDTA stains -- I'm  
19 sorry -- EDTA in bloodstains.

20 A. Yeah, I believe that the lab you referred to  
21 earlier, National Medical Services, is offering  
22 that.

23 Q. And that's Mr. Ballard, right?

24 A. He's at least one of the scientists that perform  
25 that analysis. I'm not aware if any others do or

1 not.

2 Q. Okay. And you are not aware of any other lab  
3 that does?

4 A. I'm not aware of any that do, and the only reason  
5 I'm aware that National Medical Services offers  
6 it is because of the **Cooper** case, as we talked  
7 about earlier.

8 Q. Would you agree there is a rather conspicuous  
9 void of research in the last 10 years, since  
10 Exhibits 436 and 437 were published?

11 A. A void in the research, there certainly have not  
12 been any articles that I'm aware of, published in  
13 the last 10 years --

14 Q. Okay.

15 A. -- specifically looking at EDTA in bloodstains.

16 Q. We talked earlier about how I asked, did you  
17 produce any other protocols that you used for  
18 testing EDTA; why did you refuse to do that?

19 A. We have an attorney that's employed in our  
20 laboratory and I was instructed to not turn over  
21 any other protocols, other than the one that was  
22 used in this particular case, because according  
23 to the attorney, that's the only one that's  
24 relevant to this case.

25 Q. Okay. So you had some internal attorney make the

1 decision for you?

2 A. That's correct.

3 Q. All right. We talked about, I think you agreed  
4 that the protocol that was used in the O.J. case  
5 was developed rather hurriedly, mid-trial, right?

6 A. It was -- Again, it was taking a procedure that  
7 we had in place, which is simply looking for  
8 chemicals, specific chemicals in a material, and  
9 we do this all the time at the FBI Laboratory.  
10 We -- Many, many cases, we are asked to look at a  
11 stain -- I'll keep it very simple -- a stain, and  
12 determine if a specific chemical is in that  
13 stain. So, in that general line of thought, we  
14 took our general procedure that we would use to  
15 identify an unknown chemical in a stain, and  
16 apply that in the O.J. case.

17 Q. And --

18 A. Now --

19 Q. Would you agree --

20 A. I'm sorry, what had to be done quickly, to finish  
21 the answer is, we had to look specifically for  
22 EDTA, so we had to set the instrument up so that  
23 it was targeting EDTA.

24 Q. And in doing that, quickly, in order to be used  
25 in the O.J. Simpson case, you didn't employ all

1 of the four -- I forget what you called it --  
2 factors in validation?

3 A. Well --

4 Q. Have I confused you or --

5 (Court reporter couldn't hear.)

6 Q. (By Attorney Buting)~ Have I confused you? Do  
7 you know what I'm talking about?

8 A. I do.

9 Q. Okay. You went through four, what do you call  
10 those, factors?

11 A. Well, they are different variables in the  
12 validation protocol.

13 Q. And one of them you forgot today until you looked  
14 it up, right? Do you know what I'm talking about  
15 now?

16 A. Yes I drew a blank, that was carryover. But --

17 Q. Those are four experiments, I think, is what you  
18 called them, right?

19 A. Yes, four different areas that we're evaluating  
20 on the procedure.

21 Q. Detection limit, right?

22 A. Yes.

23 Q. Interferences from normal blood?

24 A. That's correct.

25 Q. Matrix suppression?

1 A. Correct.

2 Q. And carryover?

3 A. Yes.

4 Q. And, in fact, in the O.J. Simpson protocol that

5 was used, as you went back and looked at it, you

6 discovered, oops, there might have been some

7 carryover that was affecting the results in that

8 case?

9 A. That's not entirely accurate.

10 Q. Well, didn't -- Well, okay. Let me ask -- Why

11 don't you explain; didn't you, in fact, conclude

12 that there -- that carryover was a factor in some

13 of the results that you were getting?

14 A. For this case, or for --

15 Q. For the O.J. Simpson protocol.

16 A. No, I didn't work on the O.J. Simpson case, so I

17 didn't --

18 Q. Well, you just studied it in order to develop

19 this protocol, right?

20 A. No, I did not look at the O.J. Simpson case and I

21 did not look for EDTA in the bloodstain from that

22 case.

23 Q. But you looked at Exhibit 436?

24 A. Yes, I did.

25 Q. And 436 expresses concerns about possible

1           carryover affect in the protocol, right?

2       A.    That's correct, it does.

3       Q.    And it's your testimony that you don't know that  
4           that was, alternately, the FBI's explanation for  
5           the results that they got showing EDTA in the  
6           O.J. case?

7       A.    No, that's not my testimony. My testimony was  
8           that I didn't -- you said, when I looked at the  
9           O.J. Simpson case; I didn't work on the O.J.  
10          Simpson case.

11      Q.    Right. What I'm saying is, your testimony today  
12           is that you don't know that scientists went back  
13           and looked, after the O.J. case, try and explain,  
14           hey, why are we getting these EDTA results and  
15           concluded it was probably carryover?

16      A.    Well, you know, to be accurate about it, it was  
17           discovered in the middle of the trial, when the  
18           evidence was being presented in the case. There  
19           was a break over the weekend and the scientist  
20           that was doing the work, came back to Washington,  
21           and did some additional tests and realized that  
22           what he was seeing as a very small blip of EDTA  
23           in the bloodstain, was actually instrument  
24           carryover --

25      Q.    Okay.

1 A. -- from a previous sample, showing up in the next  
2 sample. And he did experiments and he proved  
3 that to be the case, that was in the middle of  
4 the trial --

5 Q. Okay.

6 A. -- not for this paper.

7 Q. Okay. But --

8 A. This paper supported those findings that he had  
9 during that case.

10 Q. And in that trial, your laboratory offered  
11 evidence, based on a protocol, that in the middle  
12 of the trial, your own scientist determined was  
13 flawed, right?

14 A. Could you repeat that?

15 Q. In that trial, your laboratory, the FBI, offered  
16 a brand new protocol, never used before, and in  
17 the middle of the trial, your own scientist  
18 discovered that it was flawed.

19 A. No, absolutely not. In the O.J. trial, I don't  
20 know that we offered a protocol. I have no  
21 reck -- I have no knowledge of that, whatsoever.  
22 I don't believe that he said it was flawed; he  
23 was explaining the result. That doesn't mean he  
24 did not identify EDTA, or the lack of EDTA, but  
25 he did some additional validation studies in the



1 middle of the trial.

2 Q. Correct.

3 A. That's correct. And he reported that back to the  
4 Court.

5 Q. And so he -- So, your laboratory offered evidence  
6 and opinions, on a test, that later validation  
7 studies, in the middle of the trial, proved to be  
8 not completely accurate, because there was  
9 carryover; isn't that right?

10 A. Again, I -- I -- I disagree.

11 THE COURT: Hold on a minute. This isn't  
12 the jury, this is me.

13 ATTORNEY BUTING: Okay.

14 THE COURT: And I think I have got the  
15 drift here.

16 ATTORNEY BUTING: All right.

17 THE COURT: So we can move on.

18 Q. (By Attorney Buting)~ Well, there's another case  
19 that you were involved in in which a protocol was  
20 developed rather hurriedly; do you know which one  
21 I'm talking about already?

22 A. I -- There are many cases we --

23 Q. Okay.

24 A. -- we work on that the protocols develop quickly.

25 Q. Let's talk about the William Sybers case. Are

1           you familiar with that one?

2       A.    Yes, I am.

3       Q.    **Sybers** is S-y-b-e-r-s **vs. State**, the citation is  
4           841 Southern 2d, 532, 535 to 40, Florida App.  
5           2003, just giving the cite for the Judge and the  
6           record, okay.

7       A.    Yes.

8       Q.    And this was a case in which a medical examiner  
9           was accused of having poisoned his wife with a  
10          certain chemical. And the accusation was that  
11          the charge arose about nine years after she had  
12          died, right?

13      A.    That's correct.

14      Q.    And her body was exhumed and tested for this  
15          particular chemical, right?

16      A.    Yes, it was.

17      Q.    And, I'm sorry, but maybe you can pronounce it  
18          for me?

19      A.    It's called succinylmonocholine,  
20          s-u-c-c-i-n-y-l-m-o-n-o-c-h-o-l-i-n-e.

21      Q.    So this succinyl drug was tested by you -- I'm  
22          sorry, some embalmed tissues and organs were  
23          tested by you?

24      A.    Ultimately, they were tested my me, yes.

25      Q.    Based on a protocol -- You had never tested for

1           that particular drug before, had you?

2   A.   No, I had not.

3   Q.   So, you developed a protocol to test for that  
4       particular drug and that particular case -- for  
5       that case?

6   A.   At the request of a court, yes, we did.

7   Q.   Much like today, where you developed a test for a  
8       particular case?

9   A.   Well, it was a little different; in that  
10       particular case another laboratory had initially  
11       found this chemical in the remains of the alleged  
12       victim in that case.  And --

13   Q.   And just tell the Judge which laboratory that  
14       was?

15   A.   That was National Medical Services.

16   Q.   And let's tell the Judge which doctor or  
17       scientist.

18   A.   It was Dr. Kevin Ballard was the scientist on  
19       that particular case.

20   Q.   And what he did, and you then, also, tried to  
21       replicate, with a slightly different test, right?

22   A.   Well, it was -- it was significantly different.

23   Q.   But in both instances, Doc -- you basically came  
24       to the same conclusion as Dr. Ballard, which was,  
25       there was evidence that this woman had been

1           poisoned with this drug; isn't that right?

2       A.   Not exactly what -- the conclusion I came to was,  
3           we were asked to verify if this chemical, which I  
4           will just call SMC, was present in her specimens.  
5           And National Medical Services had found this  
6           chemical in every specimen they collected from  
7           her, from the heart, to the kidney, the liver,  
8           the brain, and fat tissue.

9                       We were not able to confirm it in any of  
10          them, except for one or two specimens. So we did  
11          confirm that this chemical was present in those  
12          specimens that were collected from an exhumed  
13          body.

14       Q.   Let me stop you there for a second. Because you  
15           weren't able to find everything -- you weren't  
16           able to find this chemical in as many tissues and  
17           fluids as Dr. Ballard had found, right?

18       A.   That's correct.

19       Q.   And when you were challenged about that, in  
20           court, you said, well, it's probably because  
21           there -- he had different detection limits than I  
22           did.

23       A.   Exactly. Exactly.

24       Q.   Which means that you can set up these tests in  
25           machines in a way that -- that you set the

1 threshold as to when something is considered  
2 detected and when it's not?

3 A. No. No. I mean, you could, theoretically, but  
4 what that means is, in analytical chemistry, our  
5 instrumentation that we use, we have a pretty  
6 significant break through about every three years  
7 in the quality of instrumentation. And what that  
8 equates to is, how low we can go.

9 So, his instrument that he used in that  
10 particular test was very state-of-the-art  
11 instrumentation. In fact, we didn't even have  
12 one at the time and got one at a later date. But  
13 his instrument was much more sensitive to these  
14 things. It had nothing to do with any settings  
15 that we do in the laboratory. It's just the  
16 technology --

17 Q. Technology --

18 A. -- you are using at the time. And what he used,  
19 it was a much more sensitive technique than what  
20 we had.

21 Q. And when you developed whatever protocol you did  
22 use in that case, you did so knowing that there  
23 had never been a study of how this particular  
24 chemical works, reacts, breaks down in a body  
25 that's nine years old, right?

1 A. No, no. I disagree again. There were studies  
2 and, I mean, you are calling up on memory from a  
3 number of years ago here, but there were studies  
4 that were published that dated back decades  
5 before that case, in which they did demonstrate  
6 the breakdown of the parent drug, which is called  
7 succinylcholine.

8 Q. Right. But none of them involved a test of what  
9 it would look like nine years later when you  
10 exhume the body, did it?

11 A. There would never be a study like that, so.

12 Q. Right.

13 A. Yes.

14 Q. And just like there is no study on what and how  
15 any EDTA would react or degrade or not degrade in  
16 a 9 or 11 year old blood tube, or blood vial, is  
17 there?

18 A. Well, again --

19 Q. Simple question.

20 A. I'm sorry, but I disagree about that. There  
21 are --

22 Q. Oh, there's a study that describes the  
23 degradation of EDTA in a blood vial that is 9 --  
24 or in your case -- 11 years old?

25 A. I'm not aware of any studies, no.

1 Q. Okay. That's fine. That was my question.

2 A. Okay.

3 Q. Now, in that **Sybers** case, there was a conviction,

4 right?

5 A. There was, yes.

6 Q. A man was convicted of poisoning his wife, right?

7 A. That's correct.

8 Q. After the conviction, it was reversed on appeal,

9 right?

10 A. I believe it was, yes.

11 Q. And after that, additional scientific tests were

12 done that proved, although you thought the

13 science was good at the time, subsequent tests

14 proved them no longer to be accurate and correct;

15 isn't that right?

16 A. Not exactly, no.

17 Q. I'm showing you Exhibit 439, take a moment and

18 look at them.

19 A. Okay.

20 Q. This is a filing notice; it is entitled notice to

21 the Court?

22 A. That's correct.

23 Q. **State vs. William** Syber -- **Sybers**, right?

24 A. Yes.

25 Q. And the -- You agree with me that this notice

1 states, and it has the case number, the notice  
2 states, the purpose of this filing is to notify  
3 the Court and the defendant that recent  
4 scientific testing conducted by National Medical  
5 Services and the Federal Bureau of Investigation  
6 Laboratories has discovered that the findings  
7 specifically related to this defendant and the  
8 testimony of the experts from each of these  
9 laboratories, though believed to be correct at  
10 the time of the testimony, can no longer be  
11 relied upon.

12 The findings of the presence of  
13 succinylmonocholine in the specimens tested are  
14 believed to be accurate and correct; however, the  
15 opinions that the succinylmonocholine proves to a  
16 scientific certainty the prior presence of or  
17 injection of succinylcholine are not correct,  
18 right?

19 A. That's what it says, yes.

20 Q. And that's what, ultimately, your own lab  
21 determined, after you convicted -- helped convict  
22 a man, right?

23 A. No.

24 Q. Okay. Let me ask, do you disagree with that  
25 finding?



1 A. I absolutely do.

2 Q. Okay.

3 A. Again, we were asked to confirm the findings of  
4 the first lab, and we did, in some of the  
5 specimens. And during that trial, one of the  
6 specimens that we did not find  
7 succinylmonocholine in was actually the only  
8 specimen that the first lab never touched. Are  
9 you following me?

10 Q. Yeah.

11 A. So, at that trial, I said, of any specimens that  
12 are of relevance here, because the allegation was  
13 that the first lab had contaminated everything  
14 with this drug, I said the one that is of most  
15 relevance is the one that was never in their lab  
16 and that's negative.

17 Now, we were able to find  
18 succinylmonocholine in the tissues from the  
19 victim in the case, the **Sybers** case. And as this  
20 -- As you clearly said, the finding of the  
21 presence of succinylmonocholine, in the specimens  
22 tested, are believed to be accurate and correct,  
23 and I stand by that.

24 What we did, years later, again, we had  
25 new technology come into our laboratory and in

1       applying that new technology to the same method,  
2       we were going through another validation study to  
3       ensure that with this new instrument we were  
4       still able to use this method, and in doing so,  
5       this more sensitive instrument was now picking up  
6       traces of this same chemical in specimens that  
7       were collected from people that had never been  
8       exposed to that drug. So this was a --

9   Q.   So you dug up bodies?

10  A.   No, I did not dig up bodies.

11  Q.   Well, you looked at other dead bodies, tissues  
12       from other dead bodies, and you found the very  
13       same chemical, right?

14  A.   We were provided specimens from Washington D.C.  
15       medical examiner cases. And all of those cases  
16       we had a very good history on what medications  
17       they may or may not have been given. And we used  
18       that information to come up with the end result  
19       that our laboratory was able to find traces of  
20       this particular chemical in non-embalmed --

21  Q.   Okay.

22  A.   -- non-embalmed specimens that were collected  
23       from people that had never been given the parent  
24       drug, succinylcholine.

25  Q.   People that had never been poisoned.

1 A. Well, it's not a poison, it's a drug that you  
2 use, clinically, to paralyze the muscles in the  
3 body so that you can intubate them.

4 Q. I understand that, sir.

5 A. People have to be on a respirator, normally, in  
6 order to live through that because the diaphragm  
7 gets paralyzed.

8 Q. I understand that there's a legitimate reason for  
9 the drug, but what Mr. Sybers was charged with  
10 and what you testified on behalf of the State  
11 about was that the presence of that drug, a  
12 metabolite of that drug, actually, proved that  
13 the drug itself had been given by Mr. Sybers?

14 A. That's right. And that was based on the science,  
15 the knowledge of the science at the time --

16 Q. Fine.

17 A. -- of the testimony.

18 Q. And the science changed a few years later. And  
19 you had to withdraw your findings in that case,  
20 your opinion in that case.

21 A. Yes, science always changes; that's part of it.

22 Q. All right. Let's go to the **Cooper** case for a  
23 moment. You filed the affidavit that we saw  
24 earlier, right? In that case, right?

25 A. I'm sorry, I don't --

1 Q. I may have taken --

2 A. -- have a copy?

3 Q. I'll bring that back to you in a minute. I'm not

4 actually going to refer much to it, but my point

5 is, in that case, you didn't actually do any

6 testing?

7 A. Oh, that's correct, yes.

8 Q. You were just brought in at the beginning to give

9 an opinion about whether or not Mr. Ballard's

10 tests were valid -- testing procedure was valid?

11 A. Yeah. And, again, I didn't even look at data

12 that he generated on that case. I was asked to

13 review his testimony and what he testified to as

14 his approach and then make a declaration as to

15 whether or not that I felt that that was an

16 appropriate approach that he took.

17 Q. Okay. So you disagreed with Dr. Ballard in that

18 case?

19 A. With the approach that he took, yes.

20 Q. Okay. But you agreed with Dr. Ballard in the

21 **Sybers** case?

22 A. Well, I guess I agreed and disagreed.

23 Q. Well, you confirmed some of his findings, didn't

24 you?

25 A. Yeah.

1 Q. And you rendered an opinion like he did, that  
2 that poor man, Mr. Sybers, had poisoned his wife  
3 nine years earlier?

4 A. I agreed that we were able to find  
5 succinylmonocholine in the specimens that we  
6 collected from the alleged victim in that case.

7 Q. And didn't you render an opinion that that  
8 finding, to a reasonable degree of scientific  
9 certainty, allowed you to conclude that  
10 Mr. Sybers had injected the parent drug in his  
11 wife?

12 A. I never said, in testimony, under oath, that  
13 Dr. Sybers injected his wife with  
14 succinylcholine.

15 Q. But you did say that the presence of the drug  
16 you -- the chemical you found, was consistent  
17 with someone having administered the parent drug  
18 to Mr. Sybers' wife before she died?

19 A. Yes, I believe that to be true.

20 Q. Okay. And, by the way, you interned with  
21 National Medical Services, S.C., right?

22 A. Yes, I did, for about three months in the summer  
23 of 1998 -- or I'm sorry, 1988.

24 Q. So you have worked quite a bit with Mr. Ballard?

25 A. I'm sorry, 1987.

1 Q. Okay. So have you worked quite a bit with  
2 Mr. Ballard?

3 A. I don't believe he was employed with National  
4 Medical Services when I did my internship there.

5 Q. All right. The Kevin Cooper case was a case  
6 similar to this in the sense that an allegation  
7 was made that a bloodstain of his, the  
8 defendant's, was placed on some kind of crime  
9 scene evidence, right?

10 A. Yes, that's correct.

11 Q. I'm showing you Exhibit 440, this is the EDTA  
12 testing order ultimately approved by the Court in  
13 that case, right? Take a minute and look at it.

14 A. Okay.

15 Q. Okay. And the test protocol developed there was  
16 sort of a compilation of testimony by a number of  
17 experts in front of this Judge Marilyn Huff,  
18 United States District Court, Southern District  
19 of California, right?

20 A. I haven't read this in detail, so I'm not sure.

21 Q. Well, are you telling me, then, that when you  
22 looked for resources in February of 2007, to rely  
23 on, or references to look at when you developed  
24 your own protocol from this case, that you did  
25 not review the protocol that was used in the

1 Kevin Cooper case?

2 A. That's correct, I did not.

3 Q. Instead, you relied just on the FBI's own  
4 protocol from 10 years earlier.

5 A. No, I relied upon my education and training, my  
6 experiences, to make a decision as to what was  
7 the most appropriate approach to take in the  
8 request that we had in front of us for this  
9 particular case.

10 Q. But in terms of protocols to detect EDTA in a  
11 bloodstain, you looked only at the FBI's own  
12 protocol from 1997?

13 A. No, I did a literature search as -- for published  
14 methods on EDTA, in particular for bloodstains,  
15 and the only two references I was able to find  
16 that were significant in my opinion were the two  
17 that we talked about earlier that are exhibits --

18 Q. 436 and 437?

19 A. Yes.

20 Q. Both written -- or published in 1997?

21 A. That's correct.

22 Q. And so this order, exhibit -- what are we up to  
23 -- Exhibit 440, is dated August of 2004, right?

24 A. Yes.

25 Q. And you were aware of the **Cooper** case because you

1           had provided an affidavit for it --

2       A.    Yes.

3       Q.    -- right?

4       A.    Yes.

5       Q.    But you are saying that when you developed the  
6           protocol for Mr. Avery, you did not consider the  
7           protocol as been developed, ultimately, with the  
8           Court's approval in the **Cooper** case?

9       A.    As far as I know, it was never a peer reviewed,  
10           published protocol.  And, as I stated earlier, my  
11           affidavit in this case said I disagreed with his  
12           approach, so that would imply I disagreed with  
13           the protocol he used.  So I'm not sure why I  
14           would --

15      Q.    Well --

16      A.    -- consult that as a reference to use in  
17           developing a protocol for ourselves.

18      Q.    Well, because, did it ever occur to you that the  
19           Court had taken your testimony or your affidavit  
20           or declaration, as well as the defense  
21           declaration, and then taken all this testimony  
22           and had gone through all this work for about a  
23           year to develop this testing protocol, and you  
24           never looked at it?

25      A.    No.



1 Q. All right.

2 A. I wasn't aware of that.

3 Q. Okay. And when you developed this protocol, you

4 never came to this Court and suggested, hey, this

5 is how we think we're going to do it, do you

6 think this is going to be a valid approach in

7 order to allow the evidence or the opinions to be

8 admissible?

9 A. No, we never do that, sir.

10 Q. You are the FBI, you do things your own way.

11 A. No, it's our job to independently develop a

12 procedure and put it through the required steps

13 of validation --

14 Q. Let's talk a little --

15 A. -- as -- I'm sorry -- as defined by our

16 accrediting body.

17 Q. Okay.

18 A. And, then, to present that in front of the Court,

19 who is the gatekeeper, as you know, as to whether

20 or not it should be allowed in.

21 Q. Okay. The exhibit in front of you describes a

22 protocol that's done under what's called double

23 blind procedure; are you familiar with double

24 blind?

25 A. I am, yes.

1                   ATTORNEY GAHN: Your Honor, I would just  
2                   like to make a clarification here. I understand  
3                   this to be an EDTA testing order. Could counsel lay  
4                   a foundation that this is a protocol. Seems to me  
5                   this talks about the order of testing, who gets it  
6                   first, what do they get, but to refer to this as a  
7                   protocol, I would like a bit more foundation.

8    Q.    (By Attorney Buting)~ All right. Well, I will  
9           accept the amendment of this, not as a protocol,  
10          but as a testing order prepared by a court in the  
11          **Cooper** case. All right.

12   A.    All right. But, again, I have never read this,  
13          so --

14   Q.    Okay.

15   A.    -- I feel like I should take time to read it if  
16          you are going to question me about any of the  
17          science and the specific steps in it.

18   Q.    Okay. Well, let's -- Rather than do that, let's  
19          just move on to this issue of double blind  
20          testing; what is double blind testing?

21   A.    Double blind testing is essentially a proficiency  
22          test or competency test that's done so that the  
23          person taking the test doesn't know the results  
24          while they are taking it, doesn't know the right  
25          answer, and also the person administering the

1 test doesn't know the right answer. It's an  
2 independent system.

3 Q. And what that's, in part, designed to do is to  
4 get rid of any kind of potential bias that the  
5 tester may have, right?

6 A. That's true.

7 Q. That if the tester thinks that he's being asked  
8 to find a particular chemical in a particular  
9 sample, there may be some examiner bias  
10 potential?

11 A. Yeah, that's true.

12 Q. And so, double blind means that they are given  
13 these examples, samples, they don't know whether  
14 it's a control, they don't know whether it's a  
15 swab from the RAV4; they don't know what it is,  
16 right?

17 A. That's true.

18 Q. They just test it for the presence of EDTA?

19 A. That's right.

20 Q. You didn't do that in this case, did you?

21 A. Yes, we did.

22 Q. You did double blind testing?

23 A. We did blind testing, not double.

24 Q. And blind being what --

25 A. Did blind testing. I'm sorry.

1 Q. Blind being in what manner?

2 A. Well, it was before we analyzed the evidence in  
3 this case, I had one of my employees prepare 10  
4 swabs. And some of those swabs had EDTA blood on  
5 them and some did not. And then myself and one  
6 other scientist were randomly assigned those five  
7 swabs.

8 Q. Are you talking about the validation test?

9 A. No, sir. I'm talking about a competency test,  
10 which was in that binder that we sent to you.

11 Q. Well, let me -- I'm directing you to the test in  
12 this case, on the evidence.

13 A. Well, you asked me if we did any blind testing on  
14 this case. And my answer is, yes, we did, and I  
15 was explaining that.

16 Q. Go ahead then.

17 A. So we did not know the answers upfront. We just  
18 knew that the swabs had blood on them and that  
19 they either had EDTA on them or they did not.  
20 Some did, some didn't. Two different scientists  
21 were assigned, five and five.

22 And we ran the tests, we reported those  
23 results back to an independent person, that  
24 wasn't even involved in giving the test in the  
25 first place. The independent person was handed a

1           sealed envelope that had the results in it, the  
2           right answers.

3                       After we gave our answers to her, she  
4           then graded our results and prepared a memo back  
5           to our training files to show that we  
6           successfully identified correctly 10 out of 10 of  
7           those swabs.

8   Q.   Let's clarify for the Court, those swabs and  
9       samples you are talking about were not the RAV4  
10      swabs, or the blood vial in Mr. Avery's case?

11   A.   No, there was -- No.

12   Q.   Okay.  So, when you tested the evidence in this  
13      case, the blood swabs, the swabs from the  
14      vehicle, the control swabs from the vehicle and  
15      the blood vial that was sent to you, they were  
16      not -- those tests were not done in any blind  
17      fashion?

18   A.   Well, no, I mean we knew what we received.  We  
19      had to check it in.  We had to follow our  
20      standard forensic practices of looking through  
21      the evidence, documenting things --

22   Q.   Sure.

23   A.   -- and then we had to apply it to the protocol.

24   Q.   Right.

25   A.   So, I don't believe you can do it blindly.

1 Q. Well, how many chemists do you have, working for  
2 you?

3 A. I have a number of chemists, but they are not all  
4 qualified to do this type of examination.

5 Q. How many qualified chemists do you have to do  
6 this exam?

7 A. Three, counting myself.

8 Q. Okay. You could have had yourself, or one of  
9 them, go through, log in the evidence, identify  
10 it, give it a cue number, or whatever, right?

11 A. Yes.

12 Q. And, then, you could have had another chemist  
13 test it, who didn't know what those numbers and  
14 designations meant, apply to.

15 A. Yes. That could have happened, yes.

16 Q. But you didn't?

17 A. No, that was -- we don't normally do that.

18 Q. You had the same chemist who -- who tagged and  
19 booked -- or -- the items, also do the test?

20 A. That's correct.

21 Q. And just so we're clear, you didn't do the tests  
22 in this case?

23 A. No, I did not.

24 Q. A Mr. Brewer, what's his name?

25 A. Jason Brewer.

1 Q. Jason Brewer, B-r-e-w-e-r.

2 A. Dr. Jason Brewer.

3 Q. Dr. Brewer. Why isn't Dr. Brewer here?

4 A. Because he is a -- in this case, he served the

5 role as a laboratory technician.

6 Q. So when Mr. Brewer was doing the tests, when he

7 was putting, you know, running a test to see if

8 there was EDTA in item Q-46, he knew that item

9 Q-46 was a swab from the vehicle?

10 A. Yes, he did.

11 Q. Okay. Now, the question of whether or not you

12 are seeing a particular chemical in one of these

13 LC/MSS (sic) tests, requires some subjective

14 interpretation by the examiner?

15 A. Well, as the protocol indicates, there are a

16 number of criteria that must be met in order

17 to -- to make the call that it is a positive

18 finding, that it's truly identified, so if all

19 those criteria are met, then it's clearly there.

20 And if they are not met, then we determine that

21 it's negative.

22 Q. Well, talking about these mass spectrum

23 instruments, there are limitations on what they

24 can tell you, right?

25 A. Can you be more clear on that?

1 Q. Well, you can't just run a sample, then open up  
2 the door, put the sample in, close the door,  
3 thing beeps a bunch of times and out spits a  
4 result.

5 A. Only on CSI.

6 Q. All right. Not, certainly, in real life?

7 A. Not in real life, but it is -- the mass  
8 spectrometer is considered to be the gold  
9 standard of instrumentation that's used in  
10 analytical chemistry, so.

11 Q. Sure, but even it has limitations?

12 A. Well, yes, everything has a limitation, that's  
13 right.

14 Q. Okay.

15 A. And that's why we put into our protocol, this  
16 SOP, we write what those limitations are.

17 Q. All right. But you also have what's called  
18 guidelines for comparison of mass spectra?

19 A. That's correct.

20 Q. And that was issued June 21st of 2006.

21 A. That's correct.

22 Q. You are familiar with that?

23 A. Oh, yes, I am.

24 Q. And it talks about, basically, what kind of  
25 guidelines you are supposed to follow before you



1       make a call that something is or isn't present,  
2       right?

3   A.   That's exactly right.

4   Q.   Okay.  And do you agree with this statement, that  
5       the definition of what makes any given ion  
6       characteristic, quote unquote, of a particular  
7       chemical structure, is somewhat nebulous?

8   A.   Can I see where you are referring to.

9   Q.   Sure.  Sure.  This would be on guideline 9.3?

10  A.   Okay.  But -- It does say that, but you have to  
11       put it in context --

12  Q.   I understand that.

13  A.   -- with what's around it.

14  Q.   Sure.  But what it's telling you is that  
15       something called diagnostic ions, right?

16  A.   Yes.

17  Q.   And that's something that, you know, you put  
18       these things in and it spits out -- the computer  
19       spits out these graphs and spikes and whatnot, I  
20       can show you that later, but, right?  I'm  
21       simplifying, but?

22  A.   Very much so, but, yes.

23  Q.   Okay.  And what this is telling you is, that  
24       there does not appear to be any universally  
25       accepted standard in the field.  This means that

1           good and consistent judgment by the examiner is  
2           essential.

3    A.    That's true.

4    Q.    Okay.  And it's also telling you, though, that  
5           you have to be careful about the interpretation  
6           of the results, even with this wonderful  
7           instrument, LC/MC/MS/MS, or just the MS part?

8    A.    That's exactly right, you have to have experience  
9           and training in order to interpret the data.

10   Q.    Did you, by the way, approve this guidelines?  I  
11          believe you did.

12   A.    Yes, I did.

13   Q.    Would you take a minute and look at limitations,  
14          item 14, in that list of guidelines.  Okay?

15   A.    Yeah, absolutely.

16   Q.    Did you write this?

17   A.    No, I did not.

18   Q.    You just signed off on it?

19   A.    I reviewed it and signed off on it.

20   Q.    Maybe we'll mark this -- Well, I will mark it and  
21          then I will get a copy that's not highlighted,  
22          over lunch.  Just identify for the record, now,  
23          this Exhibit 441?

24   A.    All right.

25   Q.    That's entitled what?

1 A. It's entitled, Guidelines For Comparison of Mass  
2 Spectra.

3 Q. Okay. And this is a document that is -- that the  
4 FBI Laboratory Chemistry Unit follows.

5 A. For the -- Specifically for the toxicology,  
6 sub-unit of the Chemistry Unit.

7 Q. Okay. And so would you agree or disagree with  
8 this statement? The mere fact that an unknown  
9 mass spectrum matches well to the spectrum of a  
10 known standard will rarely, by itself, be  
11 sufficient grounds to claim the presence of that  
12 compound in the question sample.

13 A. Absolutely, that's a correct statement.

14 Q. And quote, similarly, the fact that an unknown  
15 mass spectrum fails to match that of a known  
16 standard, will generally, not by itself,  
17 constitute grounds for concluding that the  
18 compound is not present in the questioned  
19 specimen?

20 A. That's right. In simple English, what that is  
21 saying, is you have to consider all the data that  
22 you have generated in order to make a call that  
23 something is there or not there. You can't just  
24 pick the data that matches your hypothesis; you  
25 have to take the totality of the information --

1 Q. Sure.

2 A. -- and apply it in your interpretation.

3 Q. So it's not just what comes out on these graphs,  
4 you have to interpret them?

5 A. Exactly.

6 THE COURT: I think, Mr. Buting, if you are  
7 moving on to another line of questioning, it might  
8 be a good time to take our lunch break.

9 ATTORNEY BUTING: Sure.

10 THE COURT: Are you done with the  
11 Exhibit 441?

12 ATTORNEY BUTING: Actually, I am. This  
13 would be a good time to break.

14 THE COURT: All right. Let's report back  
15 at 1:00, then.

16 (Noon recess taken.)

17 ATTORNEY GAHN: Before Mr. Buting  
18 continues, could I just make one observation for the  
19 Court, about the admissibility hearing?

20 THE COURT: Sure.

21 ATTORNEY GAHN: At one point, I believe Mr.  
22 Buting stated that he is not challenging or  
23 questioning whether the LC/MS/MS test can test for  
24 EDTA in blood with this instrument.

25 ATTORNEY BUTING: No, that's not what I

1           said.

2                   ATTORNEY GAHN: Even if not challenging  
3           that, I would think that the admissibility --  
4           everything so far he's been questioning on really  
5           goes to weight of evidence as opposed to  
6           admissibility. And if he is not going to challenge  
7           the underlying scientific principles of LC/MS/MS,  
8           aren't we over with this hearing?

9                   ATTORNEY BUTING: We most certainly are  
10          not, because it's the application of this to this  
11          particular instrument, which may be perfectly  
12          acceptable and reliable in the field, but it's the  
13          application of this instrument to this test, to its  
14          ability to determine EDTA in a bloodstain that's  
15          being challenged here.

16                  THE COURT: One of the elements that the  
17          Court has to address in determining whether expert  
18          testimony is admissible is whether the evidence will  
19          assist the trier of fact in determining an issue of  
20          fact; I'm assuming that that's what --

21                  ATTORNEY BUTING: Yes.

22                  THE COURT: -- Mr. Buting's line of  
23          questioning is directed at, so, I'm going to allow  
24          it.

25                  ATTORNEY STRANG: The Court's microphone is

1 a little -- sometimes we aren't getting it at all  
2 and sometimes it seems soft.

3 THE COURT: All right. Unfortunately, it's  
4 glued to the desk, so, I do my best. Thank you.  
5 Mr. Buting, you may proceed.

6 ATTORNEY BUTING: Thank you, very much.

7 **CROSS-EXAMINATION CONTD**

8 BY ATTORNEY BUTING:

9 Q. All right. Mr. LeBeau, let me just go back to  
10 one thing for a moment, the FBI's attorney, his  
11 refusal to produce the prior protocols that your  
12 lab has used for EDTA tests? Okay?

13 A. That's correct. I was instructed that the only  
14 protocol to turn over, for this case, based on  
15 the letter that was sent to our laboratory, was  
16 the protocol that we applied for this particular  
17 case.

18 Q. Well, would you agree that if we looked at the  
19 old protocols that you used and we saw any  
20 differences between those protocols and the one  
21 that you devised, we could ask you about those  
22 differences, right, if we had those old  
23 protocols?

24 A. Potentially, if there were significant  
25 differences, you could ask.

1 Q. Okay. And we could ask about what the reasons  
2 were for you to make any changes between what you  
3 have got now and what you had previously, right?

4 A. Yes.

5 Q. And we could ask about what studies you have done  
6 or relied on in order to make those changes in  
7 protocol -- this protocol from any prior ones?

8 A. Yes.

9 Q. And if we saw that there were any internal  
10 critiques of those prior protocols, we could  
11 learn even more about possible weaknesses with  
12 this protocol?

13 A. Well, there are no records of internal critiques  
14 about the former protocol.

15 Q. And why are there not any internal critiques  
16 about that?

17 A. There was no reason to critique it.

18 Q. Then why didn't you use it in this case?

19 A. Well, as I indicated earlier today, we moved our  
20 laboratory from Washington D.C. to Quantico,  
21 Virginia. And in doing so, we acquired a number  
22 of new instrumentation that we did not have when  
23 we were in Washington D.C.

24 Q. Well --

25 A. And as part of that move, we had to, in essence,

1 revalidate, or at least reconfirm, that every  
2 protocol that we moved with us was actually  
3 working the same way in the new facility. Now,  
4 as I had --

5 Q. But --

6 A. -- also indicated earlier, we had not had any  
7 request to do this particular analysis since we  
8 worked in the O.J. Simpson case. Our laboratory  
9 moved in 2003, so over that course of period in  
10 2003, we essentially did not take with us that  
11 old protocol. I mean, it's an electronic  
12 document, so it's not that we didn't have it  
13 available, but it's something that we chose not  
14 to bring online in the new laboratory, because we  
15 weren't getting requests to perform this  
16 analysis.

17 Q. But my point is, you do have it, you are just not  
18 turning it over because your attorney won't --  
19 doesn't want you to?

20 A. I honestly do not know that we have a protocol in  
21 this format, as I turned over for this case, for  
22 what was done in the O.J. Simpson case. That was  
23 under a completely different quality assurance  
24 program and, at the time, we weren't even  
25 required to have written protocols like this.



1           There was a protocol in existence, as I said  
2           earlier, that would allow you to identify  
3           chemical in a stain, not specifically EDTA in a  
4           bloodstain.

5   Q.   Well, are you saying that you think scientists  
6           from your lab came into the O.J. Simpson case  
7           with all the publicity and national television  
8           and presented results of testing for EDTA in a  
9           bloodstain and didn't have a written protocol?

10  A.   I have no idea if they did or did not.  I'm sure  
11           there was a written protocol, but at the time of  
12           the O.J. case, this is the mid-nineties,  
13           completely different set of rules for  
14           laboratories in the mid-nineties.

15  Q.   Sure.

16  A.   And at that time, it was acceptable -- by the  
17           standards at the time, it was acceptable to write  
18           your protocol, just in your notes for that  
19           particular case.  As long as you wrote what you  
20           did, that was fine.  So that wouldn't be a  
21           document that's generated like this today.

22  Q.   All right.

23  A.   So it could simply be the notes from the O.J.  
24           Simpson case that would have the protocol.

25  Q.   But, if we had those notes, we would be able to

1           look at the differences between that protocol and  
2           yours, today?

3   A.   Yes, if you had a protocol from the O.J.  
4       Simpson --

5   Q.   Just so we're clear, that machine, their  
6       instrument, even though you may have new  
7       versions, the very same test that you used in the  
8       O.J. case, that also involved LC/MS/MS, did it  
9       not? Tandem mass?

10  A.   I don't know. I didn't -- I didn't review the  
11       O.J. Simpson case. I didn't do the original work  
12       in the O.J. Simpson case.

13  Q.   Okay. But you have read the proto -- the  
14       published Exhibit 436, right?

15  A.   Yes, I have.

16  Q.   And that was done very shortly after the O.J.  
17       case, right?

18  A.   Yes, it was.

19  Q.   And the method that's used in that report  
20       involves LC/MS/MS, does it not?

21  A.   Yes, it does.

22  Q.   Okay. So, maybe a different instrument, but the  
23       whole idea of being able to do these with one of  
24       those combination liquid chromatography and  
25       tandem mass spectrometry -- metry, that part is

1           the same; you are using -- the idea of using that  
2           instrumentation is the same?

3    A.   That's correct.

4    Q.   It's other things that we can't tell that have  
5           changed because we don't have that protocol,  
6           right?

7    A.   Yes, you can't distinguish if there's any  
8           differences unless you had, probably, the case  
9           file, the actual case notes from the O.J. Simpson  
10          case. That's where you would be able to  
11          differentiate between what was done in that case  
12          and what I did in this case.

13   Q.   All right. Now, going to this February 15th,  
14          2001, protocol, for a moment, that's 434?

15   A.   Yes.

16   Q.   Are there any internal critiques or comments  
17          about that protocol or the -- you know, from the  
18          approval process?

19   A.   If there are, they are in the packet that I  
20          provided you.

21   Q.   Who approved that protocol?

22   A.   Approved it in what manner? We have three levels  
23          of approval --

24   Q.   Right.

25   A.   -- on issuance.

1 Q. And the ultimate approval for a new protocol is  
2 the unit chief, right?

3 A. Well, it's a combination of myself, as the unit  
4 chief, and the quality assurance unit chief who  
5 oversees quality for the whole laboratory.

6 Q. Sure. But were you involved in the actual  
7 development of this protocol?

8 A. As a supervisor I was, yes.

9 Q. And, then, you were also there in the position  
10 where you also had to sign off on it?

11 A. Yes. And it's for every protocol in our unit, as  
12 the supervisor, I oversee the development of the  
13 protocol and then assure that all the steps have  
14 been met for a quality program. And then a  
15 second check to that is our quality assurance  
16 unit chief that does the same thing.

17 Q. So -- But in other cases, let's say if someone is  
18 developing a protocol of a test, some other  
19 chemical, you know, in a routine, not a hurried  
20 manner, not a specific trial date and all that,  
21 he may not be involved in the development of that  
22 protocol at all, right?

23 A. Well, it depends on who the case is assigned to.  
24 If it's assigned to another examiner in our unit,  
25 then I wouldn't be as heavily involved with it.

1 But in this case, it was assigned to myself and I  
2 had more incite into the development of the  
3 method and the validation.

4 Q. But in those cases where you are not involved,  
5 where it's not assigned to you, someone else  
6 develops the protocol first, right?

7 A. Yes.

8 Q. Without your involvement?

9 A. They may come to me for guidance.

10 Q. Okay.

11 A. I am their supervisor, so.

12 Q. But, then, it comes to you after someone else,  
13 another examiner completes it, then it goes to  
14 you for approval at the unit level, the unit  
15 chief level?

16 A. Well, I wish it was quite that simple. Actually,  
17 there's a -- when a method is developed, we have  
18 the validation steps that have to be drawn to, be  
19 adhered to. As part of that validation, there is  
20 a check list that is completed. That check list  
21 helps the scientist doing the validation assure  
22 that they are completing each of the required  
23 steps of that validation. That validation study  
24 is reviewed by an independent scientist that had  
25 nothing to do with the validation and then I do a

1 review of that on top of it. That's for every  
2 protocol that's issued into our -- in our unit.

3 Q. Right.

4 A. In this particular case, because I was involved  
5 in the validation, I didn't do the validation  
6 review. I assigned that to another employee to  
7 do the validation review and she reviewed all of  
8 the validation data and signed that she agreed  
9 with the work that was done there.

10 Q. Right. But then it gets to the next level of  
11 unit chief approval and you are basically  
12 approving yourself. You are approving your own  
13 protocol at that level, in this case?

14 A. Well, I suppose, technically, yes.

15 Q. I'm just trying to distinguish how, in some  
16 cases, when it gets to the unit level, the unit  
17 chief approval level, it really is another  
18 independent review by you, who wasn't involved in  
19 the development?

20 A. Yes.

21 Q. But this case worked differently because it was  
22 assigned to you, to begin with?

23 A. Slightly different.

24 Q. Okay. All right. Let me talk about some of the  
25 assumptions that I think you are making as you do

1           this test, okay. I call them assumptions, you  
2           may disagree. But, for instance, in doing this  
3           test where you are trying to see if there is EDTA  
4           in bloodstains that may have come from a blood  
5           vial that is now 11 years old, you make an  
6           assumption that the EDTA that was originally in  
7           that blood tube has not degraded in the 11 years  
8           to the point where it's not detectable, right?

9   A.    I did not make that assumption, no.

10   Q.   Okay. Well, if in fact the EDTA had degraded in  
11       11 years, then it wouldn't be detected, would it?  
12       Simple question.

13   A.    If -- If the EDTA -- EDTA had degraded, then it  
14       would not. Completely degraded, I should add, to  
15       zero, then it would not be detectable.

16   Q.    Not really completely to zero, just to the point  
17       where it's below your limit of detection, right?

18   A.    That would be a very significant reduction in  
19       EDTA, because a standard tube has --

20   Q.    But, sir --

21   A.    -- approximately a thousand to 2,000 parts --

22   Q.    Sir --

23   A.    -- per million of EDTA --

24   Q.    -- please.

25                   COURT REPORTER: I'm sorry --

1                   ATTORNEY BUTING: Judge, I would direct the  
2                   witness --

3                   COURT REPORTER: I'm sorry, I didn't get  
4                   his answer.

5           A.    I said that standard tube has approximately 1,000  
6                to 2,000 parts per million of EDTA in it.

7                   COURT REPORTER: Thank you.

8           Q.    (By Attorney Buting)~ All right, sir, just follow  
9                with me, we'll get to that, all right. But the  
10               first step is this. If -- Would you agree with  
11               me, if the EDTA has degraded, not to zero, but to  
12               a point where it's below your limit of detection,  
13               then your tests would not show it, right?

14          A.    Well, it would have to degrade to a level below  
15                13 parts per million from that --

16          Q.    Whatever --

17          A.    -- original --

18          Q.    Whatever it is. Whatever it is. Whatever your  
19                limit is it, it could still be there, but not be  
20                detectable?

21          A.    To below 13 parts per million.

22          Q.    Right. And, so, when you say that -- when you  
23                express an opinion that there is no EDTA in those  
24                stains -- I'm sorry, let me rephrase that. When  
25                you express an opinion that the blood in those



1 stains in the Toyota could not have come from the  
2 blood vial, you are making the assumption that  
3 the EDTA that was originally in that tube 11  
4 years ago, has not degraded to the point where  
5 it's not being detected on those stains any more,  
6 right?

7 A. No, we tested the tube of blood and determined  
8 that it did have EDTA in it at high amounts.

9 Q. You quantitated it?

10 A. Did not quantitate it, but I compared it directly  
11 to a fresh tube of EDTA blood and the results for  
12 the same amount of blood analyzed gave very  
13 similar results.

14 Q. Wait a minute, are you telling us now that you  
15 quantitated the level of EDTA in that blood vial,  
16 yes or no?

17 A. No, I said we took the same amount of blood from  
18 a fresh tube of EDTA blood, compared to the blood  
19 sample from Mr. Avery, same amount of blood on  
20 the instrument gave the same comparable  
21 response --

22 Q. Okay. Let's talk about that.

23 A. That would indicate --

24 Q. Let's talk about that.

25 A. I'm sorry, I didn't finish. That would indicate

1           to me that there was no significant degradation  
2           of EDTA in that tube.

3       Q.    Are you testifying then that your mass spec test  
4           quantitates the level of EDTA?

5       A.    It's certainly capable of doing that, yes.

6       Q.    Did you do that here?

7       A.    No.

8       Q.    All right.  Now, if what you found when you do  
9           this test is that -- we'll get to that in a  
10          minute -- but whatever your mass spec printout  
11          graphs show, were some peaks that would be  
12          consistent with EDTA, right?  In the blood vial?

13      A.    Which blood vial?

14      Q.    The blood vial.

15      A.    The blood vial from Mr. Avery?

16      Q.    Yes.

17      A.    It had peaks in it that were identified,  
18          unequivocally, as being EDTA.

19      Q.    And -- But those peaks don't tell you whether  
20          there is 1500 milligrams per liter or  
21          13 million grams per liter, do they?

22      A.    Oh, they do.  They give you an idea of how much  
23          is there.  And we do that.

24      Q.    So what's the idea, sir, where is it in your  
25          reports that you have any conclusion drawn about

1           what the quantity of EDTA is in that 11 year old  
2           blood vial, show me, you have got it right in  
3           front of you?

4    A.    In my report?

5    Q.    Show me where, anywhere in your reports, your  
6           stack of 6 inch lab sheets; show me where you  
7           express an opinion that there is a particular  
8           quantity of EDTA in the blood vial?

9    A.    No, I did not do a quantitative analysis, but the  
10          response on the instrument does allow an  
11          experienced chemist to assess if there is a --  
12          you know, you can tell, from the response, if you  
13          have 50 percent of what you are comparing to and  
14          you can tell if you have 10 percent.

15   Q.    Oh, yes.

16   A.    Because the instrument gives a certain peak size.

17   Q.    Show me.

18   A.    That -- it's not --

19   Q.    Show the Judge.

20   A.    -- in the report, it's in the data.

21   Q.    Show the Judge in the data.

22   A.    Okay. It will take me one minute.

23   Q.    And while you are doing that, show the Judge in  
24          your report where you say anything about the  
25          quantity of the EDTA that you found in that 11

1           year old blood vial.

2                   THE WITNESS: Can I approach?

3                   ATTORNEY BUTING: Can I see them, please?

4   Q.   Okay. What you are pulling out are all positive  
5       -- are all controls, positive controls that you  
6       did, right?

7   A.   That's correct.

8   Q.   Show me a test that you ran, not on a control  
9       extract, but on the Q-49, whether it's a spot,  
10      two microliters, one microliter, whatever?

11   A.   You are holding it in your hand. The Q-49 is  
12      positive control B, was the actual tube of blood,  
13      from Mr. Avery, that we prepared a second control  
14      to, for this very reason, to assess that the EDTA  
15      in that tube had not significantly degraded.

16   Q.   Well, where is the sample of Q-49, not the  
17      positive control that you ran through, where's  
18      the actual evidence sample?

19   A.   This is it.

20   Q.   That's it?

21   A.   Yes.

22   Q.   You ran no separate Q-49?

23   A.   Well, we also did a -- to another detection limit  
24      study with specimen Q-49 where we took a one  
25      microliter drop and a two microliter drop of that

1 same blood, from the tube from Mr. Avery, and we  
2 analyzed that with this protocol as well.

3 Q. Okay.

4 A. But that was a detection limit study --

5 Q. Right.

6 A. -- to verify that our instrument was capable,  
7 again, to see that level of EDTA.

8 Q. And that's important, because if your detection  
9 level isn't right, it may be there and you are  
10 just not seeing it.

11 ATTORNEY GAHN: Your Honor, at this point,  
12 could we back up and could you mark the exhibits  
13 that Dr. LeBeau pointed out to you and showed you  
14 where the EDTA testing was done? And why don't we  
15 show those on the ELMO?

16 ATTORNEY BUTING: All right.

17 ATTORNEY GAHN: And just, basically, go  
18 through what you just went through before with  
19 Dr. LeBeau.

20 THE COURT: Just to clarify a couple of  
21 things for the Court, I have, which was attached to  
22 the State's motion, a copy of the report of  
23 examination. I don't believe I have got the  
24 document that's being referred to here. Do I take  
25 it, was a copy of the document that's being referred

1 to, previously provided to the defense?

2 ATTORNEY GAHN: Yes.

3 ATTORNEY BUTING: On Friday, to me, without  
4 a chemist.

5 THE COURT: Okay. And can a copy of the  
6 entire document be marked as an exhibit? Is there a  
7 copy of the document available, or is that entire  
8 thing the document?

9 ATTORNEY BUTING: That's it.

10 ATTORNEY GAHN: Yes. This is the discovery  
11 which was provided by the FBI. And what Mr. Buting  
12 is talking to Dr. LeBeau about are a couple of pages  
13 from this discovery package.

14 THE COURT: All right. And so you are  
15 asking the pages be identified as an exhibit?

16 ATTORNEY GAHN: The ones that he just  
17 talked to Mr. -- Dr. LeBeau about on the stand,  
18 where Dr. LeBeau was pointing out the levels of  
19 EDTA. I think those should be marked and actually  
20 shown on the ELMO, so that everyone knows exactly  
21 what we're talking about here.

22 THE COURT: I think Mr. Buting, actually,  
23 was about to show them on the ELMO.

24 ATTORNEY BUTING: Yeah, I will. I'm going  
25 to show -- Maybe we should mark the whole thing.

1           The State can get us another copy, and at the end of  
2           this hearing, for any possible appeal record, we  
3           will have a whole copy.

4                   THE COURT: Any objection from the State?

5                   ATTORNEY GAHN: No, your Honor, we can have  
6           another copy made.

7                   THE COURT: All right. If that's going to  
8           occur, then I think as long as we identify what you  
9           are looking at by page number or some other fashion,  
10          when the entire exhibit is received, we should be  
11          able to identify the pages that are being  
12          referenced.

13   Q.    (By Attorney Buting)~ All right. I'm going to  
14          show you this first page which, at the top, I'm  
15          going to show this overall page first so you can  
16          see. This graph on the right side that you are  
17          referring to, where this is a peak, that you are  
18          saying is a -- well, actually, this is -- can you  
19          see the top?

20   A.    No, I can't.

21   Q.    All right. The date is February 16 of '07?

22   A.    That's correct.

23   Q.    The time is 4:00 a.m.?

24   A.    That's correct.

25   Q.    Somebody is doing this test at 4:00 in the

1 morning?

2 A. No, an instrument, a robot, in the lab, is doing

3 it.

4 Q. Oh, really, so there is nobody there to monitor

5 it at all?

6 A. No, it is set up as an auto sampler. It runs

7 itself once you put together a sequence list, it

8 shoots one sample. When that sample is finished,

9 the next sample is injected and so on and so.

10 Q. And it does that all night long?

11 A. It did in this case, yes.

12 Q. Okay. On a bunch of different -- whatever --

13 whatever samples are being tested, could be more

14 than one case?

15 A. No, just this case. It was the only one tested

16 on this instrument at that time.

17 Q. Okay. It says positive control A, MAL, EDTA

18 extract?

19 A. Yes.

20 Q. Is that you?

21 A. Yes, it is.

22 Q. Your own blood?

23 A. Yes, it is.

24 Q. So you are the lab volunteer who gave his blood?

25 A. Yes, I was.



1 Q. Okay. And then that was put into a tube with  
2 EDTA?

3 A. It was, yes, in a purple topped tube.

4 Q. Mixed up?

5 A. Yes.

6 Q. Then extracted and --

7 A. For clarification, five microliters of that blood  
8 were put onto a cotton tip applicator. And then  
9 it was carried through the procedure that's  
10 already in --

11 Q. Okay.

12 A. It's a court exhibit.

13 Q. And when you get these, goes through the --  
14 believe me, I'm not an expert, but as I  
15 understand it, it goes through this machine and  
16 it's bombarded with some kind of electrical  
17 charge so that ions are knocked free from the  
18 molecule?

19 A. Well, first, it separates the mixture of all the  
20 chemicals that are in the blood, into their  
21 individual chemicals. And they come out at  
22 different times. So it's probably easier if you  
23 look at the other side of the graph first. And  
24 if there's -- is there a laser pointer I could  
25 use, please. Is it possible to put that whole

1 side of that page up at one time?

2 Q. Sure.

3 A. Okay.

4 Q. Is that good enough?

5 A. Yes. Thank you. So, what we're looking at then  
6 is this is one peak, two peaks. These are  
7 different mass spec experiments that are going  
8 on, that are monitoring the time that it takes  
9 for that -- from that injection till that EDTA  
10 peak comes out and this is the EDTA peak right  
11 here. So, again, now, if you don't mind, just  
12 zooming in a little bit.

13 Q. That's your blood in that graph, the top one?

14 A. Yes, it is.

15 Q. All right.

16 A. Okay. So it took .89 minutes, roughly, .9  
17 minutes, for the EDTA to be injected and then  
18 come out of the LC to the mass spectrometer.  
19 That's what that's indicating. So that is an  
20 EDTA peak there and on the right side of the  
21 graph is the chemical fingerprint I told you  
22 about earlier, that the mass spec gives us.

23 Q. That's this one, 160 is at the top?

24 A. Yes.

25 Q. These are the ions you are looking for, three

1           ions, right?

2    A.   That's right.  Plus the -- the parent ion, 243,  
3           that's -- 293, I'm sorry, that's the weight of  
4           EDTA.  And then these, 247, the 163, and the 132,  
5           those are -- I'm sorry the 160 and the 132 are  
6           the fragments of EDTA.  And a real simple way to  
7           think of this is if you took a sheet of glass and  
8           we could hit it with a hammer and every time hit  
9           it exactly in the same place, at the same amount  
10          of energy, that sheet of glass is going to  
11          fracture the same way.

12                 And if we could catalog those fragments  
13           into a data base, and catalog it based on a  
14           different type of glass, we could say, okay, this  
15           is that type of glass, based on that  
16           fragmentation pattern.  That's what a mass  
17           spec -- a mass spec does with a chemical.  It  
18           fragments into a consistent fragmentation pattern  
19           that serves as a fingerprint.  This is the  
20           fingerprint for EDTA that you see up there.

21                 If you zoom out a little bit, you can  
22           get the whole picture.  And what's important is  
23           that not just that you have those four fragments  
24           there, but look at the relative ratio of those  
25           fragments.  The most abundant is the 160 at the

1           very top, that's what's called the base peak.

2   Q.   Right.

3   A.   And then we have, in the ballpark of around 15 to  
4       20 percent, the 132 and the 247. And below  
5       10 percent, we have the 293, which is the --  
6       that's what it originated as, the full EDTA,  
7       without being fragmented. Okay. So that is for  
8       my blood that was put into an EDTA tube, mixed  
9       up, five microliters of my blood were put onto a  
10      cotton tipped swab and run through the  
11      application.

12                Now, if you go back to the top of that  
13      particular graph, on the right side here, this is  
14      via signal. This is how much of a signal it  
15      gave, that's 1.3 times 10 to the 5th. That's the  
16      amount, in essence, that the instrument is  
17      reading. It's not -- I'm not telling you a  
18      quantity; I'm not putting a number on it.

19                But it's giving -- The more that's  
20      there, the higher that peak is going to go, the  
21      higher that number will go. So, if I had, in  
22      essence, twice as much EDTA in that sample, I  
23      would have 2.6 times 10 to the 5th, in that  
24      category. If I had a 10th of the amount of EDTA  
25      in that sample, I would have 1.3 times 10 to the

1           4th.

2   Q.    Okay.

3   A.    That's how I'm able to give you an approximate

4           amount.

5   Q.    Okay.

6   A.    Without doing a quantitative analysis.

7   Q.    Well, first of all, let me just make clear, you

8           don't express any opinion in your report about

9           the quantity of EDTA in that tube, do you?

10  A.    No, I don't.

11  Q.    Okay. Now, you say this is -- this is the

12           signature for EDTA, that 160 is way up in the

13           hundred and the 132 and 247 are about sort of

14           even amounts down here at 1500 or something,

15           right?

16  A.    That is the mass spectrum that we obtain on our

17           instrument in doing this experiment, which is

18           called positive mode electrospray ionization,

19           LC/MS/MS.

20  Q.    I'm going to show you one that is exactly the

21           same time, 2/16/07, 4:02:32?

22  A.    Mm-hmm.

23  Q.    Positive control, MAL; that's your initials?

24  A.    Yes, it is.

25  Q.    EDTA extract?

1 A. Yes.

2 Q. Got strong 160?

3 A. Yes.

4 Q. And down here, the 247 is only about half as  
5 intense as the 132, right?

6 A. Could you go back to the top, I'm just -- I want  
7 to make sure I'm looking at the same one.

8 Q. And, by the way, there's quite a few other little  
9 small peaks on the bottom of this one, right?

10 A. Yes.

11 Q. 175, 195; what do those mean?

12 A. Well, those are background ions, I mean, it's not  
13 always real clean.

14 Q. Contamination.

15 A. No. No, not contamination at all. The  
16 instrument has noise to it and what that means,  
17 essentially, is there's always going to be some  
18 signal in that instrument that's going to be  
19 recorded. So that's -- that's all we're seeing  
20 there. And we can -- we can display that by  
21 subtracting out the noise. We can display it  
22 including the noise. And what you are looking at  
23 is the same -- again, I didn't see what the top  
24 number was.

25 Q. I will get to that. I will go back. Don't worry

1 I will go back. But I want to go back to this --  
2 A. Well, I'm sorry, you asked me about that and I  
3 wanted to verify if --  
4 Q. I will get to it, sir.  
5 A. -- it was the same sample.  
6 Q. I'm just asking you now, do you see any noise in  
7 this first one we looked at? Do you see any  
8 other ions at the bottom of this -- you said the  
9 machine always has background noise?  
10 A. It does, yes. And as I said, there are different  
11 ways to display it, so that you can display it  
12 without the noise.  
13 Q. Okay.  
14 A. And I can tell you that by looking at the top of  
15 the sheet, that you don't want to show me, I  
16 guess.  
17 Q. The top, is that what you want?  
18 A. Yes. Okay. You switched to the other one now.  
19 Q. This is the one you wanted to see.  
20 A. Yes. This is the -- for the -- this is the mass  
21 spectrum across that whole peak, from .81 to .95  
22 minutes. So that would include --  
23 COURT REPORTER: I'm sorry, could you  
24 repeat that and slow down just a little. Thank  
25 you.

1 THE WITNESS: I'm sorry.

2 A. This is the mass spectrum in this column here, of  
3 this whole peak, essentially from this part of  
4 the peak where it is just starting, over to that  
5 side. So it's taking the average of the signal  
6 across that entire peak, which is taking, you  
7 know, roughly a 10th of a minute or so to  
8 completely come out.

9 Q. And so it gives a slightly different spectrum  
10 where -- where the 247 ion is only half as  
11 intense as the 132 ion?

12 A. That's exactly right.

13 Q. And that's actually more what it should be, isn't  
14 it?

15 A. Well, this is -- Yes, that's more what it should  
16 be, you're right. And that's why I used that  
17 particular display, that you just had up, to  
18 create this chart here. Which is, as I indicated  
19 earlier, your Honor, we have, in our protocol, a  
20 section entitled decision criteria. And this is  
21 a section that is to ensure that we have a  
22 consistent interpretation of the data, so that  
23 scientist A and scientist B are going to look at  
24 this same data and come to the same conclusion.  
25 And with that in mind, we have employed criteria



1           that must be met in order to call something  
2           positive, based on mass spectral data. And  
3           that's what you see here. This is --

4   Q.   Well, before we --

5   A.   -- applying that.

6   Q.   Before we turn to this --

7   A.   Yes.

8   Q.   So what you are saying is, when you get these --  
9           these two different looking spectrums of your own  
10          blood, one that has the 132 ion, the same signal  
11          response as the 247, you make some objective or  
12          -- I'm sorry -- subjective conclusion that the  
13          instrument is not completely right, that it's  
14          really supposed to be more like the second one I  
15          showed you, where there's actually a difference,  
16          a ratio between the 132 and the 247?

17  A.   Again, you failed to go back and show me the  
18          header on that one, which was what I was looking  
19          to do.

20  Q.   I did show you that.

21  A.   No, I'm sorry --

22  Q.   Do you want to see it again?

23  A.   -- you did not. It's the one that you are saying  
24          is clean, you failed to show me the header on  
25          that. But --

1 Q. Well, I can take a look at it. I believe we  
2 looked at it in the beginning, same date, same  
3 time.

4 A. As you will notice, it says right there,  
5 retention time is .91, so that's -- instead of it  
6 being an average, your Honor, across the whole  
7 peak, it is simply looking at what is the mass  
8 spectrum right at .91. This is the initial  
9 assessment of the data, right here, what you are  
10 looking at, the initial assessment where we're  
11 going through and we're trying to make an initial  
12 assessment as to whether or not there is  
13 something potentially there to go back and take a  
14 closer look at.

15 And in this case, it's a positive  
16 control. It seems obvious that there are ions on  
17 there that are characteristic of EDTA. So then  
18 we went back and looked at the data and displayed  
19 it under the proper conditions that allowed us,  
20 then, to assess it for the ion ratios, the  
21 requirement that's in our actual SOP.

22 Q. But in this --

23 A. And that's why there's a separate printout.

24 Q. All right. But wait a second, so the other one  
25 is an average, that's fine. But in this one, you

1 will agree with me that the signature, the  
2 spectrum signature is not exactly like the other  
3 one because you are getting an equal strength  
4 response from the 132 ion and the 247 ion?

5 A. And that's why we average across the whole peak,  
6 because the instrument is in each millisecond,  
7 it's do -- it's hitting this chemical and  
8 breaking it up. So you are going to get some  
9 fluctuation in the signal and we average across  
10 the whole peak, because that's -- that's a more  
11 characteristic of the signal. It really wouldn't  
12 be fair to anyone to base it on just looking at  
13 one point in time when the peak is composed of  
14 signals across about 15.15 seconds.

15 Q. Sure. So, a few minutes ago when we looked at  
16 this and you told the Judge this was the  
17 spectrum, this was the signature for EDTA; you  
18 want to correct that now?

19 A. No, I don't. I mean, that is the typical mass  
20 spectrum that you should expect to find, mainly  
21 looking at the fact that the base peak, which is  
22 the largest peak, is 160. And you have fragments  
23 of 132 and 247, with a small amount of 293  
24 present.

25 That's -- That's what we're looking for

1           with that initial assessment, as to make a  
2           determination whether or not we should look at it  
3           closer for the presence of EDTA.

4   Q.   All right.  Well, let's look at this other  
5           exhibit which is -- says at the top, tandem mass  
6           spectrum, positive ESI mode.

7                   Okay.  This is -- This is a chart now.  
8           And on the left it has got positive control A,  
9           positive control B at the top.  Then it has  
10          numbers that show the response.

11  A.   That's right.

12  Q.   And 160, in this column right here, is about  
13          91,000, right?

14  A.   Yes.

15  Q.   132 is like much, much less, 13,000.  247 is  
16          about half of that?

17  A.   Mm-hmm, yes.

18  Q.   And that's what it's supposed to be, isn't it?  
19          They're not supposed to be even or --

20  A.   Well, there -- Again, if you look at the protocol  
21          I provided, it does talk about this.  There's an  
22          acceptance range on those fragments and generally  
23          it's within -- it depends on the type of mass  
24          spectrometry we're doing.  It depends if we are  
25          doing this type of mass spec, mass spec.  But

1           there are pre-defined acceptance criteria for the  
2           mass spectral data, in order to get that  
3           consistent interpretation.

4                       What you are looking at here is the  
5           actual abundance of each of those ions plugged  
6           into a spread sheet that we generated in our  
7           laboratory to automatically apply the rules that  
8           we have in our protocol to the data.

9   Q.   All right.

10  A.   So that, you know, you don't have to sit there  
11       and manually do the calculations every time.  You  
12       plug it into the thing and it will tell you if  
13       the criteria is met in order to call it a pass or  
14       a fail.  So what you have for --

15  Q.   You review that too, right?  It's not just --

16  A.   Oh, of course.

17  Q.   -- pass fail by the computer?

18  A.   Of course.  Yeah, absolutely.  It's reviewed  
19       manually as well.  But I'm just saying, so that  
20       somebody doesn't have to sit down with a  
21       calculator and apply the calculations each time.

22                       But you can also tell, I mean,  
23       15 percent and 14 percent are very close to one  
24       another; 8 percent and 10 percent are very close  
25       to one another.

1 Q. Sure.

2 A. Where we have one that fails, though, is the next  
3 one down, if you would.

4 Q. Yeah, now, let's --

5 A. 41 percent is no where --

6 Q. Wait, wait, wait. Just -- Let's just --

7 THE COURT: Hold it. I want both of you to  
8 stop for a second.

9 ATTORNEY BUTING: Okay.

10 THE COURT: This is cross-examination, so  
11 don't go into explanations that he doesn't ask for.

12 THE WITNESS: Okay. Yes, your Honor.

13 THE COURT: Your attorneys will have a  
14 chance on redirect to follow up, if they wish. And  
15 let's each of you try not to talk over the other  
16 one.

17 ATTORNEY BUTING: All right.

18 THE COURT: Mr. Buting, if you think he is  
19 not being responsive, then let me know and I will  
20 rule on it, okay?

21 ATTORNEY BUTING: All right. Thank you,  
22 your Honor. I'm sorry.

23 THE COURT: Go ahead.

24 ATTORNEY GAHN: Could we mark this as an  
25 exhibit, if possible.

1                   ATTORNEY BUTING: Sure. Do you want to  
2 mark the whole book as like 442 and then have 442A,  
3 B, C, something like that?

4                   ATTORNEY GAHN: Well, I'm really interested  
5 in --

6                   THE COURT: Let's give -- Let's give this  
7 exhibit the next sequential number. And when the  
8 book comes in, we'll give the book a number.

9                   ATTORNEY BUTING: Okay.

10 Q. (By Attorney Buting)~ This is 442, right? This  
11 is a sort of chart that summarizes what the  
12 results on this particular test were, right? Is  
13 that fair?

14 A. Could you say that again.

15 Q. This is a chart that summarizes or prints out  
16 what the -- what the results were on this one  
17 particular test, or series of tests, whatever it  
18 is?

19 A. Yeah, that's a series of tests.

20 Q. Okay. All right. Now, Q-49 is the blood vial of  
21 Mr. Avery's blood, right?

22 A. Yes, it is.

23 Q. And, you know, your analyst knew that when he was  
24 doing the test, too, right?

25 A. Yes, he did.

1 Q. Okay. This particular one is Q-49, limit of  
2 detection one microliter?

3 A. That's correct.

4 Q. And then down below is Q-49, limit of detection  
5 two microliters, right?

6 A. That's correct.

7 Q. And what you are doing here when you test down to  
8 only one microliter, you find that this is the  
9 control and if we notice, these are the same, all  
10 the way down. Three times the positive control A  
11 is the same, right?

12 A. That's correct.

13 Q. Same number, same strength, same ratio,  
14 everything to the decimal point, right?

15 A. Yes.

16 Q. But one microliter, this one is showing no 132  
17 and a 247 shows up at like 1800?

18 A. That's correct.

19 Q. So that's considered a fail?

20 A. By that criteria I was describing, yes, that was  
21 ruled as a fail. It does not meet the criteria  
22 to call it positive.

23 Q. Okay.

24 A. For that one microliter drop, using that  
25 particular technique.



1 Q. So in that particular technique, that was what,  
2 too small of a sample then?

3 A. Yeah, it's right -- As I explained earlier,  
4 that's right at our detection limit, as we found  
5 in our validation study.

6 Q. So when you said it was valid to that one  
7 microliter, it's not exactly to that one  
8 microliter, because here it failed at one  
9 microliter, right?

10 A. Well, in this particular sample, yes. And in  
11 this particular analysis, yes, that failed.

12 Q. Okay. But, then, when you increased it a little  
13 bit to two microliters, we did get a pass because  
14 the ratios between the 160, the 132, and 247 are  
15 about within tolerance, right?

16 A. That's right.

17 Q. But we know --

18 A. I'm sorry. I'm sorry, to be clear, but I  
19 ultimately ruled that negative as well.

20 Q. That's right. That's what I want to show right  
21 now, because is that your handwriting and your  
22 signature on those?

23 A. Yes, it is. Well, I'm sorry the top two are not  
24 my handwriting, that's the reviewer, that  
25 reviewed the data before the report went out.

1 Q. Okay. Looks the same to me, but anyway. The  
2 handwriting that says, extra fragment ruled ND  
3 with a circle on it, that's yours?

4 A. Yes, it is.

5 Q. And despite what this chart says and despite what  
6 the machine says, when you looked at the actual  
7 graphs, there are too many extra peaks to make a  
8 call on that one?

9 A. Yeah, it was -- it wasn't as clean as I would  
10 like it to be to feel comfortable making that  
11 call.

12 Q. Okay. And this is at two microliters, right?

13 A. That's correct.

14 Q. You want to go back a few pages deeper into your  
15 book. There's a sequence that's run at -- run at  
16 different times, actually. Here's one that is  
17 run at 4:35 in the morning on the 16th of  
18 February, right? Would you agree with me? I  
19 will move it over so you can see what we're  
20 looking at. We're looking at a positive control  
21 B which you say is an extract from the tube of  
22 blood?

23 A. Could you -- Would you mind zooming out so I can  
24 see the whole picture a minute?

25 Q. Sure.

1 A. All right. I'm sorry, but I believe you took  
2 that from me, earlier, my copy of that.

3 Q. You're right, I did. We'll use yours and we'll  
4 mark this.

5 (Exhibit 433 marked for identification.)

6 Q. (By Attorney Buting)~ Now, we just saw your -- In  
7 that early example, we saw the signature for EDTA  
8 and the ratios. And this one is, again, it's  
9 very close in time, it's 4:35 in the morning on  
10 February 16th?

11 A. That's correct.

12 Q. It has the 160 peak there, which is always set up  
13 -- you set that up at a hundred, right?

14 A. The instrument normalizes itself, so the most  
15 abundant peak is set to a hundred and everything  
16 has been put relative to that.

17 Q. Okay. Sure. So this -- If it detects 160, it's  
18 always going to be up there at a hundred because  
19 it's adjusting it accordingly.

20 A. Not exactly, it has -- 160 has to -- has to be  
21 the most abundant --

22 Q. Oh, okay.

23 A. -- for it to be set at 100.

24 Q. Okay. Now, as we look down at this, bottom of  
25 this graph, this is Mr. Avery's blood, you can

1           see that the 132 ion is coming in at about half  
2           of what the 247 ion is?

3   A.   That's correct.

4   Q.   This is a retention time of .92 minutes; is that  
5           what that means RT 0.92?

6   A.   Yes.

7   Q.   So, similar to what it was with yours when it was  
8           .91?

9   A.   Yes, it's just one single look at that peak  
10          instead of the whole --

11   Q.   Right.

12   A.   -- peak.

13   Q.   And yet in this one you have the exact opposite  
14          of what you would -- should get for a signature  
15          ratio -- for a ratio of 132 to 247, you have the  
16          exact opposite of what you would expect to get in  
17          your signature for EDT?

18   A.   Well, I wouldn't assess this for the ratios and I  
19          did not assess this for the ratios. I would  
20          average across that whole peak, as I did with the  
21          positive control A, average across the whole peak  
22          in order to make that determination.

23   Q.   Okay. Tell me what the difference is between the  
24          positive DSI mode and the negative DSI mode?

25   A.   Well, it's simply flipping the electronics

1           around. In one mode you are looking at fragments  
2           that have a positive charge and in the other mode  
3           you are looking at fragments that have a negative  
4           charge to them.

5   Q. All right. So, not that we have had enough of a  
6       lesson to understand how these machines work, but  
7       certainly they do require some interpretation in  
8       order to make a call or not make a call, right?

9   A. Yes, it does.

10   Q. EDTA is biodegradable?

11   A. Not readily, no.

12   Q. But it is eventually, right; it is broken down?

13   A. Not significantly, no.

14   Q. Well, you said you apparently are aware of  
15       studies about how it is the most ubiquitous  
16       chemical in the environment now, right? Manmade  
17       chemical?

18   A. That's right.

19   Q. And there are many studies about how to deal with  
20       it in waste water treatment, for instance, right?  
21       In the environment?

22   A. That's correct.

23   Q. And they come up with methods to try and break it  
24       down to biodegrade it, right?

25   A. Harsh methods, yes.

1 Q. Okay. Well, it, for instance, has been found to  
2 breakdown more quickly if the PH is raised?

3 A. Yes, that is correct.

4 Q. So a more base or more al -- I always says  
5 alkaline PH level will make the EDTA degrade  
6 faster than a neutral?

7 A. That's correct.

8 Q. Okay. Now, you talked briefly about some kind of  
9 study that you did on the stability of EDTA,  
10 based upon pulling out some random blood card  
11 that you still had from 33 months ago; is that  
12 it?

13 A. Well, I didn't have them personally, our DNA Unit  
14 had a number of spot cards where they had put  
15 EDTA blood onto these cards and they were stored  
16 at room temperature from May of 2004.

17 Q. Okay. So you do recognize, then, that the whole  
18 question of whether ED -- just how stable EDTA is  
19 and whether it breaks down over time could affect  
20 your ultimate opinion in this case?

21 A. If EDTA was known to break down, or if our  
22 studies found EDTA to break down, then that would  
23 absolutely have an affect on my opinion.

24 Q. Okay. What study have you seen that's ever  
25 tested an 11 year old vial of blood to see how

1           EDTA breaks down or doesn't break down?

2   A.    I think the only study is the study that -- that

3           we did for this case with --

4   Q.    Oh, really?

5   A.    -- the actual blood itself.

6   Q.    Okay. And your report, by the way, is in front

7           of you -- what is that, 435 -- Exhibit 435, is

8           that still in front of you?

9   A.    Yes, it is, 435.

10   Q.   What is the date of that report?

11   A.    February 26th.

12           (Exhibit No. 444 marked for identification.)

13   Q.    I'm showing you Exhibit 444, which is two pages

14           of a section of discovery that you gave me.

15   A.    Yes.

16   Q.    Can you identify that?

17   A.    Yes, this is an EDTA stability study that we

18           conducted very late last week.

19   Q.    And it's -- put it up on the ELMO, so the Court

20           can see it. This consists of two pages, one of

21           which is one type written paragraph, right?

22   A.    Yeah, that's my brief summary --

23   Q.    Okay.

24   A.    -- of the results.

25   Q.    And the second page is a few handwritten notes

1 from whoever did that study. Who did that?

2 A. Dr. Jason Brewer.

3 Q. Same guy?

4 A. Yes.

5 Q. The date of that study?

6 A. 2/28/07.

7 Q. So you did these so-called stability study two

8 days after you actually filed your report?

9 A. Yes.

10 Q. So, if you had done this study and found out,

11 oops, this EDTA isn't as stable as we thought it

12 was, you may have to retract your report, or

13 amend it, right?

14 A. Well, again -- Well, yes.

15 Q. And this is the sum -- This first page of this

16 Exhibit 444, this one paragraph, is basically

17 your study. That's all that's written that

18 explains what your study is, right? Your EDTA

19 stability study, is this one paragraph?

20 A. No, it's that page and the other page you showed

21 with Dr. Brewer's notes.

22 Q. Handwritten notes?

23 A. Yes.

24 Q. You are not going to publish this study, I

25 assume, are you?



1 A. I -- I never even considered it. I don't know.

2 Q. Well, let's talk about it for a minute. What you

3 did is you pulled out 10 spot cards that were 33

4 months old, stored in room temperature, right?

5 A. Yes.

6 Q. And 4 of those 10 did not show the EDTA free acid

7 form at all, right?

8 A. No, that's not correct.

9 Q. Do I have it backwards? I'm sorry. Four of the

10 spot cards did not show the EDTA iron complex,

11 right?

12 A. That's correct, 4 of the 10 showed an indication

13 of it, but it didn't meet our criteria for

14 calling it.

15 Q. So you couldn't call it?

16 A. That's correct.

17 Q. So, in just 33 months, at room temperature, some

18 controlled environment you have, we see some

19 degradation going on with the EDTA, because four

20 of them you are not able to see the iron at all,

21 are you?

22 A. Well, I disagree with your statement there, that

23 you see --

24 Q. You don't know what --

25 A. -- degraded --

1 Q. You disagree with the degradation part.

2 A. I disagree with the degradation of EDTA. What

3 you can see here is either the EDTA iron is

4 becoming unbound, potentially.

5 Q. That's called --

6 A. -- the EDTA --

7 Q. -- degrading, right?

8 A. Well, it's dissociating is what it's called, not

9 degrading. It's called dissociation, back to the

10 free acid form. So that's one potential

11 explanation, because you can clearly see the EDTA

12 in every one of those spot cards, the free acid

13 form. So either that is taking place and that

14 could be environmentally occurring, or it has

15 decreased to a level that we're not able to

16 detect.

17 Q. Okay.

18 A. We can't tell, though, looking at that result,

19 which of those two scenarios are the actual

20 answer.

21 Q. All right. So one scenario is that it has

22 decreased to the level you can't detect, right?

23 A. That's true, yeah.

24 Q. And your study, if you want to call it that,

25 doesn't discriminate for one or the other, right?

1 A. For the EDTA iron complex, yes.

2 Q. And so, all you know is, that when you tested

3 these 33 month old spot cards that -- that 4 of

4 these 10 that you tested you were not able to

5 read or get a reaction, detectable level of the

6 iron, EDTA iron?

7 A. The iron complex, yes.

8 Q. Okay. Did you test for a calcium complex in any

9 of these?

10 A. No, as I indicated earlier, the amount of calcium

11 typically in blood is 10 to 30 times lower than

12 the amount of iron. So it made more sense to

13 focus on the iron complex.

14 Q. Okay. Now, your study is of 33 month old blood

15 on spot cards, right?

16 A. That's right.

17 Q. And the spot cards are paper?

18 A. Yes, they are.

19 Q. And they are -- they are supposed to be a stable

20 substrate so to speak?

21 A. They are exposed to the environment, to air, so.

22 Q. But there's not supposed to be anything on the

23 paper that would cause degradation, for instance,

24 or anything like that?

25 A. That's exactly right. They are sterile matrix

1           that the blood is placed onto.

2   Q.   And presumably some sort of stable PH.

3   A.   Yeah, the PH would really come from the

4        environment --

5   Q.   Okay.

6   A.   -- that it's exposed to.

7   Q.   Okay. But you don't know how the blood vial, in

8        Mr. Avery's case, was stored, right? For 11

9        years?

10  A.   No, I don't. I don't know if it was stored --

11        I'm going to make an assumption it was stored

12        with the cap on, otherwise it would have leaked

13        out. But other than that, I don't know if it was

14        stored refrigerated or at room temperature.

15  Q.   By the way when you -- you can tell that the cap

16        had been removed at some point, right?

17  A.   Yes.

18  Q.   That was obvious, from your examination you could

19        tell someone took that cap off?

20  A.   That's exactly right, yes.

21  Q.   And if there was less than what you would expect,

22        amount of blood in the vial, 10 milliliter vial

23        and it had only five and a half?

24  A.   I wouldn't -- Well, that's a two part question.

25        Yes, I did, certainly recognize that the cap had

1           been taken off. You can tell that it had been  
2           taken off. Was it less than I thought should be  
3           there; is that your question?

4   Q.   Well, I guess you wouldn't necessarily -- or  
5           would you know, I mean, is it normally filled  
6           when you see a ...

7   A.   No.

8   Q.   Okay.

9   A.   Typically --

10  Q.   Normally more than half filled?

11  A.   Typically, when they fill a blood tube, it is  
12           filled about two-thirds of the way to  
13           three-fourths of the way up.

14  Q.   So you don't know whether there was blood taken  
15           out because you don't know what the original  
16           volume was?

17  A.   Exactly, I don't.

18  Q.   But you do know the cap was removed?

19  A.   Yes, I could tell.

20  Q.   So it was no longer in a vacuum state inside the  
21           tube?

22  A.   That's correct.

23  Q.   And some sort of air and bacteria had been  
24           exposed to it by taking the top off and bringing  
25           it back on?

1 A. Sure, some limited air that would just basically  
2 replace --

3 Q. Right.

4 A. -- the area that was left in that tube.

5 Q. But you don't know anything about what conditions  
6 of heat it was stored in for 11 years, do you?

7 A. No, I don't.

8 Q. Or cold?

9 A. No, I don't.

10 Q. Or PH in the environment that it was stored,  
11 right? You would be guessing, but you don't  
12 know?

13 A. Well, the PH is going to be of the blood itself,  
14 so. It's not stored in an environment of PH.  
15 That was implied that it's being put into  
16 something else that has a PH.

17 Q. And the same thing as far as the storage of the  
18 swabs -- Let me make one thing clear here, the  
19 swabs that you tested were the swabs, as far as  
20 you know, that were taken on November -- in  
21 November of 2005, from the vehicle, right?

22 A. Those were some of the swabs we tested, yes.

23 Q. Three?

24 A. There were three swabs, yes.

25 Q. We'll get to controls later. If someone had used

1           that blood vial to plant blood in the RAV4, then  
2           those swabs, as of November of 2005, were about  
3           nine years old?

4       A.    I'm sorry, I was confused on what you just asked.

5       Q.    I'm sorry.  If the -- If someone used that blood  
6           vial, which was drawn in January of 1996, to  
7           plant blood in the RAV4, okay, then the swabs  
8           that were made from that blood would contain  
9           blood that was about nine years old?

10      A.    Yes, that's correct.

11      Q.    Okay.  That had been stored under conditions that  
12           you don't know, for that nine years, right?

13      A.    That's correct.

14      Q.    And then those swabs were taken and sent to  
15           various places.  And, again, you don't know how  
16           they were stored from November of 2005 until you  
17           received them in February of this year?

18      A.    That's correct.

19      Q.    Before you tested the vial Q-49, did you shake it  
20           up, mix it up?

21      A.    Yes, I did.

22      Q.    You don't know, whether or not, for nine years,  
23           that blood sitting the way it was, you don't know  
24           how that EDTA was reacting within the liquid, do  
25           you?  Bad question, let me phrase it this way.

1           You don't know whether, over a nine year period,  
2           the EDTA would remain homogenous, homogeneously  
3           distributed within that vial of blood, do you?

4       A.   Well, yes, I -- within a reasonable degree of  
5           scientific certainty I would expect that it would  
6           be equally homogenous throughout, because it --

7       Q.   Then why did you shake it up, sir?

8       A.   Just standard practice, I always do.  Always  
9           shake a tube of blood when I get it.

10      Q.   And that way you know it's going to be mixed  
11          evenly, right?

12      A.   Correct.

13      Q.   You don't know whether that blood vial that sat  
14          for nine years, up until November 5th, you don't  
15          know whether the EDTA was homogeneously mixed in  
16          that liquid, at that time, do you?

17      A.   If I could clarify my answer.  I think I do.  And  
18          the reason I say that is, because any time  
19          something goes into solution, which blood is  
20          essentially water, and these are things that are  
21          dissolving into the blood, just like if you put  
22          instant coffee into hot water, you're going to  
23          stir it up, it's going to dissolve into the hot  
24          water.  If you let it sit, the coffee doesn't  
25          start to recrystallize and sink to the bottom and



1           you have clear water and coffee. It's going to  
2           stay in solution and be distributed throughout  
3           that tube of blood.

4   Q.    But, sir, have you done -- this is your  
5           assumption, right?

6   A.    Well, it's -- it's based on my education.

7   Q.    Have you done any tests or are you aware of any  
8           studies that would describe how EDTA would act  
9           after nine years of just sitting in a tube?

10  A.    No, I have not personally done anything like  
11          that.

12  Q.    And have you noticed that when blood sits for a  
13          long while, there's some sediment, it sort of  
14          will separate, slightly, into the plasma, or  
15          the -- the red blood cells are heavier and tend  
16          to fall to the bottom?

17  A.    Especially in a tube that doesn't have a  
18          preservative in it, that's true.

19  Q.    Okay. Would the EDTA iron chelates, I think you  
20          called them, right?

21  A.    Yes.

22  Q.    Would they have a higher or greater specific  
23          gravity, such that they may -- than the rest of  
24          the blood, such that they may sink to the bottom?

25  A.    No, because, again, these are still water soluble

1           entities.

2   Q.    Sure.  But they have --

3   A.    So --

4   Q.    -- they have bound, the iron ones have combined

5           with the iron molecule, right?

6   A.    It has bound to the iron molecule, yes.

7   Q.    And so wouldn't you agree with me that specific

8           gravity of that isotope or chelate would be

9           different than let's say the free EDTA that's not

10          bound with anything.

11  A.    No.

12  Q.    Okay.  In any event, you don't know, if some

13          police officer was intending to use that nine

14          year old vial to plant blood, you don't know

15          whether that officer would have shaken it up or

16          not, before doing that?

17  A.    No, I don't.

18  Q.    And you don't know whether the portion that's

19          poured out might have a lower concentration of

20          EDTA than it would if it had been all mixed up,

21          do you?

22  A.    I don't believe that that's a realistic scenario.

23  Q.    But you haven't tested it?

24  A.    No, I have not.

25  Q.    And when this blood vial came in, you didn't do

1           that kind of a test before mixing it up?

2   A.   Well, it would have been mixed just getting to  
3       our laboratory. Any time its shipped or moved  
4       from location --

5   Q.   Sure.

6   A.   -- A to B, it's mixing. So that would be  
7       irrelevant, if I tested it in my laboratory,  
8       wouldn't answer your question.

9   Q.   Okay. You do know, from the **Cooper** case, I  
10       believe, at least, that EDTA on fabrics may  
11       migrate and distribute in a different  
12       non-homogenous manner, right?

13   A.   I read that was the opinion of one of the experts  
14       in the **Cooper** case. I don't know that I share  
15       that opinion.

16   Q.   Well, didn't you say that that was, in fact, one  
17       of your concerns was that a drop of blood on  
18       fabric might expand and migrate in ways such that  
19       the EDTA levels might be different?

20   A.   No, that wasn't what I testified to.

21   Q.   And you tested on the -- from the swabs that were  
22       taken from the RAV4, they were not spot cards,  
23       right?

24   A.   No, they weren't.

25   Q.   They were cotton, absorptive cotton, right?

1 A. They were cotton applicators, like Q-tip type?

2 Q. Okay. And a portion of it was cut off?

3 A. Yes.

4 Q. You don't know whether or not the EDTA that might

5 have been in that bloodstain, once absorbed by

6 the cotton, might have migrated in different

7 concentration levels, do you?

8 A. Sorry, I need you to repeat that.

9 Q. You don't know whether once that stain was

10 swabbed with cotton and gets absorbed into the

11 cotton, you don't know whether the EDTA, if there

12 was any in the blood, might have migrated

13 differently as it's absorbed into the cotton,

14 stronger in one place, weaker in another?

15 A. That would go against most principles in

16 chemistry, for that to happen.

17 Q. Let me go back to the peaks for just a moment.

18 You mentioned this -- one of the spikes was a 293

19 ion; do you recall that? I think you called it a

20 parent, the parent?

21 A. It's the parent ion in mass spectrometry, when

22 you are running it in positive electrospray

23 ionization mode.

24 Q. And how many other organic chemicals in the world

25 also share that parentage?

1 A. Have a molecular weight of 292?

2 Q. I think it was 293.

3 A. Well, the molecular weight is 292. It adds a --

4 (Court reporter couldn't hear.)

5 A. It adds a proton, p-r-o-t-o-n, onto it, to

6 increase the weight by one. I don't know how

7 many other chemicals in the world have a

8 molecular weight of 292.

9 Q. Do you know how many other organic chemicals in

10 the world have a parent peak of 293, a base peak

11 of 160, and also peaks of 132 and 247?

12 A. Just looking at the mass spectrum, I would think

13 that there is probably no other peak -- no other

14 compound in the world that gives that same mass

15 spectro profile.

16 Q. And have you compared it to any library of other

17 organic compound spectrum that you have in your

18 lab?

19 A. Yes, that spectrum is very characteristic of what

20 you would find in a library for EDTA. It's very

21 characteristic for what you find in publication,

22 your Honor, that's previously presented for EDTA.

23 Q. How many other organic chemical compounds would

24 have spectrums that would be close to that?

25 A. I don't know, there's over 12 million chemicals.

1           And there's no way that we can evaluate every  
2           single one.

3       Q.   Well, what is the machine's or instrument's  
4           tolerance for being able to detect, let's say, a  
5           292 from a 293?

6       A.   It's set up so that it can -- it's within one  
7           mass unit.  Essentially it can differentiate 293  
8           from 292.  It can differentiate 293.5 from 293.4.

9       Q.   Okay.  By the way, did you ever do any, or did  
10          Mr. Brewer ever do any presumptive test on these  
11          swabs, to be sure what he was testing was the  
12          swabs from the RAV4?  Did he ever do any  
13          presumptive test to be sure he's testing blood?

14      A.   No, we're not qualified to test for blood, for  
15          the presence of blood in the Chemistry Unit,  
16          that's done in our DNA Serology Unit.

17      Q.   Okay.  You know what I mean when I say substrate?

18      A.   Yes.

19      Q.   That's sort of like a surface, that a swab, in  
20          this instance, would be taken from.

21      A.   Yes.

22      Q.   And you don't know how the EDTA might be reacting  
23          to different substrates within that vehicle, do  
24          you?

25      A.   Not really, no.

1 Q. And there are different ones, one is a dashboard,  
2 around the ignition, right?

3 A. Yes.

4 Q. That's what you have been told?

5 A. Yeah.

6 Q. You haven't actually seen the vehicle?

7 A. I have not seen the vehicle, I have seen  
8 pictures.

9 Q. Okay. Another is like a -- some sort of a vinyl  
10 CD wallet, case?

11 A. Yes.

12 Q. And another is a metal surface?

13 A. Yes.

14 Q. And you don't know how the EDTA may bind with any  
15 of those chemicals that are on those various  
16 surfaces?

17 A. Well, the metal surface wasn't bare metal, it was  
18 painted metal, so it's not metal like what we  
19 have been talking about. Other than that, I  
20 wouldn't expect there to be a significant amount  
21 of binding.

22 Q. But you don't know, for instance, even though  
23 it's paint, there may also be some sort of wax on  
24 top of it?

25 A. That's right.

1 Q. Or other, you know, chemical cleaners that maybe  
2 leave a residue?

3 A. That's right.

4 Q. Such as Armor All, for instance?

5 A. Perhaps.

6 Q. Okay. Some of those substances like, for  
7 instance, Armor All has EDTA, right?

8 A. I don't know that to be true.

9 Q. Does paint?

10 A. No, it doesn't.

11 Q. So you did not, for instance -- Let me go back  
12 for a second. You weren't present when the  
13 November 2005 swabs were obtained, right?

14 A. No, I wasn't.

15 Q. So you don't know how the lab technician swabbed  
16 those particular stains?

17 A. No, I wasn't present.

18 Q. Neither were you present when the controls were  
19 taken in February of 2007?

20 A. No, I wasn't.

21 Q. And you don't know, for instance, how close to  
22 the stain itself the controls were taken, whether  
23 they were half inch, 4 inches, what, you don't  
24 know?

25 A. No, I don't.



1 Q. And by the way, each of those three stains had  
2 two controlled swabs sent to you, right?

3 A. Yes, they did.

4 Q. But you only tested one?

5 A. That's right.

6 Q. And you didn't ask the person who was going to  
7 send you the swabs to do an experiment where they  
8 actually poured some of the blood vial onto those  
9 same types of surfaces, that is, on the metal, on  
10 the CD case, and on the dashboard, and then  
11 swabbed those stains for testing, did you?

12 A. No, I would never recommend anything like that.

13 Q. So, if you had done that, for instance, then you  
14 would be able to say, hey, here's what this stain  
15 should look like, if it had come from the blood  
16 vial, right?

17 A. I don't know if you can jump to that conclusion,  
18 quite honestly. Pouring it on and then saying,  
19 well, this is what it should look like if it came  
20 from that blood vial. It's making a lot of  
21 additional assumptions here, I don't think --

22 Q. Such as what?

23 A. -- that I would jump to the conclusion.

24 Q. Such as time delay?

25 A. That it was poured on as opposed to droppers

1           being used to deliver it versus splattering it.  
2           That's probably the primary thing.

3   Q.   Why would that make a difference, if it's blood  
4       and it's supposedly got EDTA in it, why would it  
5       matter how it was put on the surface?

6   A.   It was simply your question you asked.  I didn't  
7       agree with the final conclusion, based on the  
8       question you asked.

9   Q.   Well, let me try rephrasing it, probably wasn't  
10       that clear.  If you wanted to be able to say that  
11       there's no way that those stains in the RAV4  
12       could have come from the 11 year old blood vial,  
13       you could have had someone create, with a  
14       dropper, or whatever, pipette, you could have had  
15       someone create stains deliberately with the blood  
16       vial, swabbed those and tested them and then  
17       compared them to the swabs that were taken in  
18       November of 2005, right?

19                ATTORNEY GAHN:  Objection, your Honor.  I  
20       believe we're really beyond the scope of an  
21       admissibility hearing now.

22                THE COURT:  I'm going to sustain the  
23       objection.

24   Q.   (By Attorney Buting)~ You mentioned the auto  
25       sampler running in the middle of the night, it

1        actually takes, if I understand your protocol,  
2        what the -- what the person does is take these  
3        samples, cotton swabs or whatever, put them in  
4        some sort of little test tube and then add 200  
5        microliters of a solution; is that right?

6        A.    Yes, it is.

7        Q.    And then that 200 microliters is allowed to sit  
8        and react for a period of time, right?

9        A.    Yes.

10      Q.    And then the whole tubes are centrifuged and the  
11      liquid is separated?

12      A.    It's filtered, essentially.

13      Q.    Okay. And the idea being, it's the liquid that  
14      you want because at that point you hope that it  
15      would have dissolved any EDTA that might be in  
16      solids.

17      A.    But not just hope, our validation demonstrated  
18      that it does --

19            (Court reporter asked him to repeat.)

20      A.    Our validation study demonstrated that it does  
21      dissolve any EDTA in the solid material.

22      Q.    Okay. And then, so there's approximately 200  
23      microliters of liquid in these vials?

24      A.    That's correct.

25      Q.    And the instrument only uses five microliters?

1 A. That's right.

2 Q. So there's another 195 microliters of liquid  
3 there that presumably would have the same result  
4 as the five that were taken out, right?

5 A. Approximately.

6 Q. Do you save that liquid to be retested?

7 A. No, we don't.

8 Q. You destroy it?

9 A. Yes, we do.

10 Q. So the defense has no opportunity to retest that  
11 solution that you have created, to determine if  
12 we would get the same results as you do, right?

13 A. No, instead we left half of the sample that we  
14 were provided with. We used half for our  
15 analysis and left half for defense retesting  
16 using your own protocol, not ours.

17 Q. Sure.

18 A. And your own controls, etcetera, to do their  
19 test.

20 Q. But if we wanted to test your protocol and your  
21 method, and not just the protocol, but the  
22 accuracy of the technician, Mr. Brewer, who is  
23 doing this test, that liquid would tell us  
24 exactly what it should. If we tested it, it  
25 should match what you did, if it was available,

1           right?

2   A.   Again, it's -- to me it's a complex question.

3           There's not a yes or no answer.  If you wanted to

4           test the work that was done by Dr. Brewer, you

5           can look at the data that's in the packet and the

6           controls.  The controls let us evaluate whether

7           or not the batch run operated as it was supposed

8           to.  It let's us assess whether or not the

9           individual sample operated as it was supposed to.

10                   Now, if you want to test our method,

11           then it's a far superior idea to take the method

12           and put it into the hands of another scientist

13           and let them run the samples, following the whole

14           protocol, as opposed to them taking our final

15           extract and putting it on their instruments.

16   Q.   But you don't keep the final extract?

17   A.   No, we don't.  We never do in chemistry.

18   Q.   So -- All right.  What is your error rate in this

19           protocol?

20   A.   The error rate, I would say, is zero.

21   Q.   Have you done a study?

22   A.   Well, yes.

23   Q.   Do you know what I mean by error rates?

24   A.   I absolutely do.

25   Q.   Okay.

1 A. I teach on this topic. The error rate is  
2 something that you generally talk about when  
3 you're talking about your ability to distinguish  
4 a false positive from a false negative. And  
5 that's usually talking about a single analytical  
6 technique. So if you were going to just look at  
7 the HPLC method, you might be able to assess an  
8 error rate, if you're just looking at the time it  
9 takes for the compound to come out of the end of  
10 that column.

11 Now, when you are running multiple  
12 techniques, it's what we call self-correcting.  
13 Self-correcting because, as I indicated earlier,  
14 you do not rely on a single analysis to make the  
15 call. You have to take all the pieces of the  
16 data that you have and make sure that it all  
17 supports the final answer. And if it doesn't,  
18 then, you know, you really shouldn't make that  
19 call.

20 Q. Well, then are you saying that this kind of test  
21 you can never attribute an error rate?

22 A. There's no numerical error rate that you can  
23 apply to something like that, when it's this  
24 complex of multiple experiments being done and  
25 you are taking all of that data and applying it

1 to a final answer.

2 Q. So there may be some error rate, but we just  
3 don't know what it is, can't be quantitated, is  
4 that what you are saying?

5 A. No. Maybe you could -- One way that people  
6 assess error rates are looking at the results of  
7 proficiency tests. And as I indicated earlier,  
8 we did give ourselves a test, a blind test. And  
9 we had 10 samples.

10 Q. Ten samples.

11 A. Ten samples, that had either EDTA blood on them  
12 or did not, and we correctly identified them  
13 100 percent of the time. So I -- I would --  
14 that's -- if you want to put a number on it, I  
15 would say we have zero percent error.

16 Q. All right. And you teach on this, so tell me,  
17 when you -- when you devise a method of trying to  
18 validate a test and trying to figure out what the  
19 false positive or false negative rate is; is 10  
20 samples considered sufficient?

21 A. For that technique of determining the error rate,  
22 yes, it is.

23 Q. When you are validating tests that can give you a  
24 known error rate, is 10 samples enough?

25 A. Generally, when we're talking about error rates,

1 we're talking about, again, techniques that are  
2 not as specific as mass spectrometry. We're  
3 talking about non-specific techniques that just  
4 give you a simple positive negative result,  
5 without a lot of data for the analyst to look at.

6 So that is a technique -- that is a  
7 value, a numerical value that let's another  
8 scientist know, how good is that particular  
9 method, if I stand on those results alone, and it  
10 doesn't have some expert looking over those  
11 data -- data points in order to make that call.

12 Now, you are taking that and putting it  
13 into a completely different realm with LC/MS/MS  
14 techniques, and especially when you are talking  
15 about multiple techniques being used to get that  
16 final answer.

17 Q. So if I understand your answer, then, is that  
18 this LC/MS/MS technique just -- you can't  
19 attribute an error rate to it?

20 A. I think you can by applying proficiency samples.  
21 That's probably the best way to --

22 Q. All right.

23 A. -- assess an error rate and that's what we have  
24 done in the past when we're asked to determine an  
25 error rate on a complex method.



1 Q. Okay. You said that EDTA --

2 THE COURT: Mr. Buting, can I ask about how  
3 much longer you think you have?

4 ATTORNEY BUTING: It's a while, half hour  
5 at least.

6 THE COURT: We'll take a break at this  
7 time, then, and resume at quarter to three.

8 ATTORNEY BUTING: Okay.

9 (Recess taken.)

10 THE COURT: Mr. Buting, you may resume.

11 ATTORNEY BUTING: Thank you, Judge.

12 **CROSS-EXAMINATION CONTD.**

13 BY ATTORNEY BUTING:

14 Q. All right. You told us that EDTA is very  
15 commonly found, right, in the environment?

16 A. Yes, it is.

17 Q. It's used in a lot of different, like household  
18 products, for instance?

19 A. Yes, it is.

20 Q. Detergents?

21 A. Yes.

22 Q. Some things like make-up, shampoo?

23 A. Yes.

24 Q. Some auto care products?

25 A. Yes, I'm sure there are some.

1 Q. I'm going to show you Exhibit -- First of all,  
2 are you familiar with the National Institute of  
3 Health?

4 A. Yes, I am.

5 Q. National Library of Medicine?

6 A. Yes, I am.

7 Q. Okay. I'm going to show you Exhibit 445, which  
8 is something just in the public domain as sort of  
9 a list of products that contain EDTA; would you  
10 just take a look at it for a moment.

11 A. Yes.

12 Q. I mean, you don't need to memorize it or  
13 anything, but would that be considered a  
14 reliable -- reasonably reliable data base of  
15 products, general everyday care products that  
16 have EDTA as part of it's composition?

17 A. Yes, it would be.

18 Q. And so, just so it's clear for the record, that's  
19 like a seven page document with a single page  
20 list of products, even by brand name, like Zest,  
21 and Suave and those sorts of things, right?

22 A. That's correct.

23 Q. Now, do I understand that the FBI has not  
24 actually tested any of these products themselves  
25 to see whether they have EDTA or what levels they

1           may be?

2   A.   That's correct, we have not.

3   Q.   Okay. Yet, when you tested the controls, which

4       in your report are identified as K -- what are

5       they, K-3, 4 -- 2, 3, 4 or something?

6   A.   Yes, K-2 through 4.

7   Q.   Okay. You found no EDTA in those controls,

8       right?

9   A.   That's correct.

10   Q.   Now, given the ubiquitous nature of EDTA in the

11       environment, was that sort of an unexpected

12       result?

13   A.   No.

14   Q.   I'm going to go back to, just a minute, to this

15       process where you -- you cut off a piece of the

16       swab, Q-tip, and put it into this little vial,

17       okay?

18   A.   Yes.

19   Q.   You do that with all of the control swabs too,

20       right?

21   A.   That's correct.

22   Q.   And then you put this 200 microliter solution in

23       it?

24   A.   That's correct.

25   Q.   If you had done that and then evaporated that

1        solution down from 200 microliters to say 20  
2        microliters, would the concentration of EDTA be  
3        greater --

4        A.    The relative --

5        Q.    -- if there was any in it?

6        A.    The relative concentration would have been  
7        greater, yes.

8        Q.    Okay. And so if you wanted to test these  
9        controls, let's just talk about the controls for  
10       a minute, and evaporated that down from  
11       200 milliliters to 20 and then sent it through  
12       the auto sampler that takes five microliters of  
13       that, if there were EDTA in that background swab,  
14       you would be more likely to actually detect it  
15       with these tests, right?

16       A.    Not necessarily. If I can explain.

17       Q.    Okay.

18       A.    This particular instrument has been demonstrated  
19       to actually do the opposite of what you would  
20       expect. Generally, if we were talking about an  
21       instrument, if you concentrate the sample and  
22       shoot that sample into the instrument, you are  
23       going to get a better response.

24                        This particular instrument, our  
25       experience, and others that use it, have found

1       that, actually, if you concentrate it, you have a  
2       detrimental effect on the signal because of that  
3       matrix suppression that I talked about earlier,  
4       that we evaluated as part of our validation  
5       study. So, by actually diluting it, you dilute  
6       the matrix interference compounds, or the things  
7       that might suppress the signal and, therefore,  
8       you actually have a better signal --

9               (Court reporter couldn't hear.)

10      A.   For the analyte of interest.

11      Q.   So, you might get -- you might get a signal  
12            showing EDTA, but you might also get interference  
13            from other ions as well?

14      A.   Not so much an interference as it is the signal  
15            is lower than what you expect it to be.

16      Q.   Okay. If you increase the solution from 200  
17            microliters to 2,000 microliters, you are  
18            diluting it to the point where it may not show up  
19            at all, right?

20      A.   Yeah, that's true.

21      Q.   So this level of 200 microliters, if you adjust  
22            it a little bit up or a little bit down, you can  
23            actually make it so that your test will not see  
24            EDTA, even if it's there?

25      A.   Well, if you take it to an extreme, yes.

1 Q. Okay. Now, at the dilution level you chose, it  
2 may be that EDTA is in those controls, but it's  
3 just too small or too low for your test to pick  
4 up?

5 A. That's true.

6 Q. And the same would be true for the bloodstains  
7 next to the controls in the RAV4, there may be  
8 EDTA in it -- in them, it's just too low for your  
9 -- you to detect with your dilution level?

10 A. And that's why we determine that detection limit,  
11 so we know what value that corresponds to what  
12 we're no longer able to actually differentiate  
13 the presence or absence of EDTA.

14 Q. But my point is you cannot -- you cannot  
15 absolutely say that there is no EDTA in those  
16 bloodstains in the RAV4, right?

17 A. Wrong.

18 Q. You can only say that you can't detect it at your  
19 level of detection, LOD, you are unable to detect  
20 it, right?

21 A. I am -- I am able to say that the bloodstains  
22 that were collected from the RAV4 do not contain  
23 the amount of EDTA that would be expected if that  
24 source of EDTA came from that tube of blood  
25 collected from that --

1 Q. Sir, that's not my question. Listen to my  
2 question.

3 A. I'm sorry.

4 Q. My question is, you cannot tell us, absolutely,  
5 that there is no EDTA in those bloodstains, you  
6 can only tell us that there is no EDTA at a level  
7 that you can detect from your instrument?

8 A. That's a fair statement, yes.

9 Q. Okay. Now, since you didn't provide an opinion  
10 about the level of -- or the quantity of EDTA in  
11 the test tube -- not the test tube. Let me  
12 rephrase that. As I read your report, what you  
13 are saying is your test detected some amount of  
14 EDTA in the blood vial, right?

15 A. Yes, it did.

16 Q. But not an amount that you were able to  
17 quantitate and express an opinion on?

18 A. It's an amount that I did not quantitate.

19 Q. Okay. And so you get a blood vial and it says  
20 EDTA right on it; it does right?

21 A. Yes, it does.

22 Q. So one would expect, if you test it, there will  
23 be some detectable amount of EDTA, right?

24 A. That's right, yes.

25 Q. Although, with 11 years having gone by, we don't

1 know whether it's the same level it started with,  
2 or something that's less, right?

3 A. I think that I testified earlier, I think that  
4 you can get an estimate, based on the analysis,  
5 as to whether or not there was significant  
6 degradation.

7 Q. But you don't know what you start off with, you  
8 don't know how much EDTA was in that tube to  
9 begin with, right?

10 A. Well, yeah, I do.

11 Q. You know a range?

12 A. I'm sorry. I know, based on what the  
13 manufacturers put into these EDTA tubes in order  
14 for the EDTA to function as they intend it to  
15 function, that the concentration, when that tube  
16 is filled to the standard volumes that they put  
17 blood into these tubes, it ranges between 1,000  
18 and 2,000 parts per million.

19 Q. Okay. But now, what you don't know, first of  
20 all, is what the original volume of blood,  
21 whether it filled that tube or not, right?

22 A. No, I don't know how much was originally in that  
23 tube --

24 Q. Okay.

25 A. -- that's correct.



1 Q. And you don't know, other than this range, you  
2 don't know the actual amount of EDTA that started  
3 off in that tube 11 years ago?

4 A. Well, it would be, in my opinion, that it would  
5 be between 1,000 and 2,000 parts per million.

6 Q. Well, that's a pretty big range. My point is,  
7 you don't know the numbers, right? It's not like  
8 you just get --

9 A. Yeah, I did measure a number.

10 Q. You don't know what you started with in 1996.  
11 You don't know what the number of EDTA was in  
12 that vial in 1996?

13 A. Not exactly, no.

14 Q. Okay. Thank you. And you mentioned that there's  
15 more EDTA in one of these blood vials than is  
16 needed to chelate or bind with the metals, like  
17 calcium and iron, right?

18 A. That's correct, yes.

19 Q. But I assume that varies sometimes depending upon  
20 the person?

21 A. Depending on their diet, generally.

22 Q. Okay.

23 A. We intake calcium, intake iron, in our diet. And  
24 then through metabolic processes, we actually  
25 generate waste that are those ions --

1 Q. Okay.

2 A. -- those metals, if I can clarify.

3 Q. So, what your opinion, today, basically is, there  
4 is EDTA at some detectable level in the blood  
5 vial, first, right?

6 A. Yes.

7 Q. And your opinion is that there is no detectable  
8 EDTA in the three stains from the RAV4 that you  
9 tested, right?

10 A. That's correct.

11 Q. Let's take that last opinion, that there's no  
12 detectable level of EDTA in the RAV4 stains,  
13 okay?

14 A. Okay.

15 Q. That's something that you could have done, if you  
16 had been asked, back in November or December of  
17 2004, right? I'm sorry, 2005, right?

18 ATTORNEY GAHN: Your Honor, I'm going to,  
19 again, interpose the objection. I think we're going  
20 way beyond an admissibility hearing?

21 ATTORNEY BUTING: No, it's we're going  
22 directly to the whole question of the next motion,  
23 sequential testing or not.

24 THE COURT: Well, it does go to the next  
25 motion, but that's not the motion we're hearing at

1           this time. So I'm going to sustain the objection.  
2           At this time we're taking evidence on the State's  
3           request to have this witness testify as an expert.  
4           I'm going to sustain the objection.

5   Q.    (By Attorney Buting)~ Okay. Your opinion that  
6           you prepared in the report, does not in any way  
7           make a comparison to a quantitated level of EDTA  
8           from the blood vial to the bloodstains, does it?

9   A.    We did not perform a quantitative analysis on  
10          this case.

11   Q.    Or comparative analysis of the blood vial to the  
12          stains?

13   A.    I'm not sure I understand your question.

14   Q.    To get the results that you got on the  
15          bloodstains, you would not have needed the blood  
16          vial in your test, would you?

17   A.    I think to interpret the data fully, we needed  
18          the blood vial. But to get the results, you are  
19          right, we didn't need the blood vial.

20   Q.    Okay. And, in fact, one of the requests that you  
21          got from the Milwaukee office, when it described  
22          what was necessary and what kind of test it was,  
23          they asked you to conduct relative comparisons to  
24          swabs from the crime scene?

25                   ATTORNEY GAHN: Objection, your Honor,

1           relevancy, for the purposes of this hearing.

2                   THE COURT: Sustained.

3   Q.    (By Attorney Buting)~ All right. Is this a fair  
4           statement that, at best, your tests tell us  
5           whether or not there is any detectable EDTA in  
6           the bloodstains now, 16 months after they were  
7           found?

8   A.    Yes. That's a fair statement, yes.

9   Q.    Your test does not tell us whether there was any  
10          detectable EDTA in the bloodstains when they  
11          were -- first came to be in the Toyota RAV4, 16  
12          months earlier?

13   A.    I'm sorry, but I disagree.

14   Q.    Well, would you agree that if there was EDTA in  
15          those bloodstains, in November of 2005, then it  
16          matters not whether your tests now, 16 months  
17          later, shows no EDTA?

18   A.    Well, I disagree with that statement too.

19   Q.    And why is that?

20   A.    If there was EDTA in the bloodstain when it was  
21          originally collected and it didn't show up today,  
22          to me that would suggest that there was some  
23          evidence switching, that it wasn't the same stain  
24          that we analyzed.

25   Q.    Okay. And that's based on your assumption of how

1 fast or slow EDTA might change or degrade in the  
2 environment?

3 A. It's based on what's published and my own  
4 experiments that show that EDTA is quite stable  
5 in a bloodstain. And in a tube of blood, I would  
6 add.

7 Q. Well, I'm talking about the bloodstains, for now,  
8 okay?

9 A. Yes.

10 Q. In the little study that you made up of those 10  
11 spot cards that were 33 months old?

12 A. Yes.

13 Q. Did you quantitate the amount of EDTA that were  
14 in those bloodstains?

15 A. No, sir, this was not validated as a quantitative  
16 procedure. So it was simply qualitative, was it  
17 there or was it not there.

18 Q. And you know of no study that has quantitated the  
19 bloodstain that is 11 years old versus one that's  
20 33 months old?

21 A. A bloodstain that's 11 years old?

22 Q. Or a blood sample?

23 A. No, I don't.

24 Q. Just one more question, I think. The matrix, you  
25 mentioned four experiments, something called

1 matrix suppression?

2 A. Yes.

3 Q. And what that does is it tends to actually  
4 suppress an ion that is there, but you don't see  
5 it?

6 A. That's exactly what matrix suppression is. It  
7 suppresses the signal on the instrument, so you  
8 may miss something that's there. And we would --  
9 like I said, we did validate that.

10 Q. And your validation there was that there could be  
11 as much as 33 percent suppression of what the  
12 actual amount should be?

13 A. That's correct. If the range of suppression was  
14 between 3 percent and 33 percent or 34 percent.

15 Q. And that's not considered significant to you?

16 A. No. No.

17 ATTORNEY BUTING: All right. I have no  
18 further questions.

19 THE COURT: Mr. Gahn, any redirect?

20 ATTORNEY GAHN: Just one moment, your  
21 Honor, please. No questions, your Honor.

22 THE COURT: Very well, the witness is  
23 excused.

24 THE WITNESS: Thank you, your Honor.

25 ATTORNEY BUTING: What do we want to do

1           with that exhibit he has, can we make a copy and  
2           file it later as --

3           ATTORNEY GAHN: What I have here, your  
4           Honor, is the exact same copy. I will have this  
5           copied and then we can mark it as an exhibit.

6           THE COURT: Very well.

7           ATTORNEY GAHN: Do you want to give it a  
8           number now or save one for it? But I will have it  
9           reproduced.

10          THE COURT: What's the next number?

11          THE CLERK: 446.

12          THE COURT: 446. All right. The full  
13          report will be 446.

14          ATTORNEY BUTING: And just so the record is  
15          clear, it's not a report, it's the lab sheets, data,  
16          those sorts of things.

17          THE COURT: I apologize. That's a good  
18          correction, because I think the shorter document  
19          here is actually entitled a report.

20          All right. Counsel, at this time the  
21          Court will hear argument on the State's motion to  
22          admit the EDTA test results. Mr. Gahn, are you  
23          going to be arguing that for the State?

24          ATTORNEY GAHN: Yes, your Honor, and I'm  
25          going to rely upon the -- that portion in the brief

1       that we filed, our motion to admit EDTA test results  
2       and then permit expert testimony on -- in the  
3       State's case-in-chief. And I will just refer the  
4       Court to pages 10 through 13, which I think  
5       certainly talks about the law and the status in  
6       Wisconsin.

7               Basically, I think this Court has to  
8       look at the analysis of the EDTA derived from the  
9       LC/MS/MS testing procedure and determine if that  
10      is admissible. And the Court has to look at  
11      three factors under our case law in Wisconsin.  
12      Is it relevant? I think clearly it's relevant to  
13      the facts in this case.

14             Number two, is the witness presenting  
15      the evidence? Is that person qualified as an  
16      expert to do so? I think, clearly, Dr. LeBeau,  
17      through his testimony and through his CV, show  
18      that that would be the case.

19             And, three, is the evidence, would it  
20      assist the trier of fact in determining an issue  
21      of fact. And I think that -- I don't think that  
22      the normal or the typical citizen of the  
23      community understands LC/MS/MS technology and how  
24      it works and what EDTA is and its function and  
25      the analysis of that. And I think this certainly



1           would clearly assist the jury in arriving at a  
2           decision in this case. And that's all I have.

3           THE COURT: Mr. Buting?

4           ATTORNEY BUTING: Actually, Mr. Strang is  
5           going to take this.

6           THE COURT: Sorry, Mr. Strang.

7           (Previous Avery transcripts, Wolstad should be Walstad.)

8           ATTORNEY STRANG: The way we divide things  
9           up, your Honor, is that Mr. Buting does the hard  
10          work and I come in later. **Walstad** is the starting  
11          point, whether it ought to be or not. Much could be  
12          added to the discussion, but I won't. Wisconsin has  
13          not adopted the United States Supreme Courts'  
14          approach to tender scientific or other expert  
15          evidence set out originally in **Daubert vs. Merrell**  
16          **Dow Pharmaceuticals** in 1993 and elaborated in cases  
17          after that.

18          Wisconsin persists in the **Walstad**  
19          approach and I agree in a general way with  
20          counsel that there are three factors the Court  
21          need consider, under **Walstad**, in deciding  
22          admissibility initially here. One, is relevance.  
23          Two, is whether the tendered witness is an  
24          expert. And, three, is whether the evidence or  
25          the opinion would be helpful to the jury. Would

1 the Court prefer that I wear the --

2 THE COURT: Sure.

3 ATTORNEY STRANG: -- mike? How is that?

4 Does that work any better?

5 THE COURT: Yeah.

6 ATTORNEY STRANG: All right. The third  
7 criterion is, would the evidence or the opinion be  
8 helpful to a jury? And that really is where we  
9 founder here, the question of whether there was EDTA  
10 in the blood found in the Toyota. And the critical  
11 caveat here, whether there was EDTA in the blood in  
12 the Toyota in November of 2005 is relevant. That  
13 is, there is a material issue of fact here to be  
14 decided by the jury, which is, did the blood come  
15 freshly from Steven Avery's finger or some other  
16 source on his body, on or about October 31, 2005, or  
17 did the blood get in the Toyota because, put there  
18 by someone else, presumably from a vial that itself  
19 dated back to 1996.

20 And we can, you know -- The vial  
21 contained EDTA, let's assume, for the purposes of  
22 argument, even setting aside the expert's opinion  
23 confirming that --

24 (Court reporter couldn't hear.)

25 ATTORNEY STRANG: Even setting aside the

1 expert's opinion confirming that the vial contained  
2 EDTA.

3 So, that's a material question in this  
4 case. And evidence that made it more or less  
5 likely that the material proposition was true  
6 would be relevant here. So, if this is evidence  
7 that there was no EDTA in that blood in late  
8 October or early November, 2005, then it's  
9 relevant.

10 Mr. LeBeau's qualifications,  
11 particularly as an analytic chemist who can use a  
12 liquid chromatograph, matched with a tandem mass  
13 spectrometer, is beyond serious dispute. We  
14 don't dispute that here for purposes of the  
15 admissibility determination. He's a good deal  
16 more qualified than the holders of bachelor's  
17 degrees from our State Crime Laboratory in  
18 Madison who have made their appearance in this  
19 trial.

20 But the problem is whether this is  
21 helpful to a jury. And what this Court is being  
22 asked to do, just so that no one makes any  
23 mistake about it, your Honor is being asked to  
24 join a select club. In fact, there's only one  
25 other member of the club, so far as anyone knows.

1 And the founding member of the club is Judge  
2 Lance Ito from the Superior Court of Los Angeles  
3 County, in the O.J. Simpson trial.

4 And, your Honor, the State nominates to  
5 be the second member of this club, and that is,  
6 of judges or courts who have admitted evidence  
7 concerning EDTA analysis, in dried bloodstains,  
8 in a criminal trial. And the similarities  
9 between which Judge -- that which Judge Ito did  
10 and that which your Honor is being asked to do,  
11 actually continue.

12 We now know, after testimony today, that  
13 the protocol for testing was prepared hurriedly,  
14 that it was prepared during the O.J. Simpson  
15 trial which, of course, went a good deal longer  
16 even than this trial. I think the preliminary  
17 hearing in that case went a good deal longer than  
18 this trial. But it was a mid-trial creation of a  
19 protocol, mid-trial testing. And, then,  
20 evidently, further mid-trial retesting and  
21 reconsideration of some of the earlier results.

22 That, of course, is what we have here.  
23 As Mr. Buting has discussed before and I think  
24 even offered the Court, or at least read from an  
25 email between Mr. Kratz and the Crime Laboratory,

1 non-quantitative EDTA testing of the bloodstains  
2 from the Toyota was under active consideration by  
3 the State in February of 2006. For strategic  
4 reasons, evidently, the State chose not to pursue  
5 that testing then.

6 Now, beginning about the end of January,  
7 2007, the State decided to pursue such testing  
8 and enveigled the FBI into doing it -- or  
9 prevailed upon the FBI Chemical Unit at the  
10 laboratory to assist the State in that manner.  
11 Those tests occurred sometime between February 1,  
12 when I believe the actual swabs and control  
13 samples were received at the FBI Laboratory. I  
14 may be off a day or so, but I'm very close there.  
15 And what is it, February 26th that our report is  
16 dated, or Mr. LeBeau's report is dated.

17 And if I recall his testimony, the work  
18 on a protocol for conducting those tests began in  
19 January, 2007. The protocol evidently was,  
20 according to his testimony, ready for an approval  
21 process by February 14, 2007. We were at that  
22 point, nine days into trial.

23 And that approval process evidently went  
24 very smoothly for Mr. LeBeau because the protocol  
25 itself was issued and dated February 15, 2007.

1       So within one day, I gather, from his testimony  
2       and the date on Exhibit 434, approval was  
3       accomplished within the FBI bureaucracy for this  
4       protocol.

5               The protocol was developed for no case  
6       but this. The protocol has been used in no case  
7       but this. The protocol is unrevised. The  
8       protocol has been validated, if at all, only  
9       internally, in the FBI, and, again, approved  
10      apparently in the course of 24 hours, after  
11      submitted for approval. All of these things are  
12      similar to the evidence that -- that Judge Ito  
13      admitted in the Simpson prosecution, out in Los  
14      Angeles County.

15             We now have results that are  
16      non-quantitative and that express, necessarily,  
17      an opinion that no EDTA is detected in the swabs,  
18      the three swabs from the bloodstains, or in the  
19      control samples that were also submitted at the  
20      same time. Although, Mr. LeBeau ventures an  
21      opinion that he, therefore, can opine that no  
22      detectable EDTA was present back at the relevant  
23      time, October, early November, 2005. He has to  
24      support that opinion, one degradation study and  
25      apparently one degradation study only.

1                   Your Honor has seen the entirety of it,  
2                   two pages, one of handwritten notes and one that  
3                   consists of a short paragraph. And as I  
4                   understand it, what Mr. LeBeau did was went over  
5                   to the DNA Unit across the hall, or wherever it  
6                   is, figuratively, in Quantico, said, let me have  
7                   some old spot cards, which would be blood on a  
8                   different medium than submitted here, on a PH  
9                   neutral stable matrix of a spot card.

10                  And evidently someone told him that the  
11                  blood on these spot cards came from something  
12                  from the EDTA purple-topped tube. We don't have  
13                  much detail on how he satisfied himself of the  
14                  EDTA origins or content of the spot cards.

15                  These things are about 33 months old.  
16                  He tests the 10 of them. And he finds EDTA in  
17                  the free acid form in all 10 spot cards. Finds  
18                  the iron chelate of EDTA in hardly more than half  
19                  of them, in 6 out of 10. And sort of dismisses  
20                  that as insignificant to his conclusion that,  
21                  boy, EDTA sure must be stable and must not  
22                  degrade quickly in bloodstains.

23                  We don't know why he dismissed that so  
24                  freely, other than that he seemed to take  
25                  reassurance from the fact that he found the free

1 acid form of EDTA in all 10 of these. And that's  
2 it. That hasn't been peer reviewed by anybody,  
3 evidently not even within the FBI, so far as the  
4 record shows. Certainly hasn't been published.

5 Certainly doesn't explain what  
6 differences in degradation there might be, were a  
7 different matrix or medium to be used. For  
8 example, the cotton swab that was submitted here,  
9 as opposed to the blotter paper spot card there,  
10 which of course is specifically designed for  
11 stabilizing and holding blood.

12 Doesn't have any way to explain, or  
13 hasn't, so far as we can see, considered what  
14 environmental differences there may be that would  
15 have produced different degradation or could  
16 have. And has no way at all to extrapolate to  
17 the degradation he would expect in a 9 or 11 year  
18 old sample of blood in any medium, whether in the  
19 vial, whether on the swab, whether on the  
20 substrates found in the Toyota.

21 So he is not able, here, to give us any  
22 curve at all, because he's only got one point to  
23 plot on the graph, which is 33 month old spot  
24 cards. We don't have anything that's less old.  
25 We don't have anything that's more old. We have



1 nothing that would establish a rate of  
2 degradation in any environment, let alone in the  
3 relevant environment.

4 So to suggest on that dataset, and with  
5 that level of scrutiny, that this is helpful,  
6 that an opinion that the EDTA was not detectable  
7 or present back in November of 2005, based on a  
8 failure to detect EDTA in the blood swabs in  
9 February, 2007, really is rank speculation, or so  
10 close to rank speculation that it's simply not  
11 helpful to a jury. The opinion just isn't  
12 helpful.

13 Now, you know, an analogy, if your Honor  
14 were trying a slip and fall case in a commercial  
15 establishment and the question, the material  
16 issue was what comparative negligence ought we  
17 assign to the plaintiff, and the defendant store  
18 owner wanted to call a palm reader and an  
19 astrologer. The palm reader would say, I have  
20 examined the plaintiff's hand and he's the kind  
21 of person who is prone to accidents and he must  
22 have known that. The astrologer to say, the  
23 plaintiff's zodiac for that month, his horoscope  
24 for that month, says that he ought to be careful  
25 because unexpected things could happen.

1                   This would be relevant under the **Walstad**  
2                   standard. And a properly qualified horologist or  
3                   astrologer, a properly qualified palm reader, one  
4                   of many years experience, certainly could be  
5                   qualified as having specialized knowledge. But  
6                   their opinions, I submit, would not be helpful to  
7                   a jury. And even under **Walstad**, wouldn't be  
8                   admitted because unhelpful, even though the issue  
9                   of comparative negligence and whether the  
10                  plaintiff took adequate precautions is relevant  
11                  and the witnesses are qualified.

12                 The examples are a reduction to the  
13                 absurd. And I don't, here, stand before the  
14                 Court and suggest that Mr. LeBeau is the moral  
15                 equivalent of a palm reader or an astrologer. I  
16                 don't suggest it. But the example also is  
17                 illustrative, I think, of how his opinion here,  
18                 based on the hurried assembly of a protocol, the  
19                 mockery of a degradation or stability study, the  
20                 lack of outside validation in any of the work,  
21                 and the effort to extrapolate without degradation  
22                 data, back from February of 2007, to November 5,  
23                 or days before that, 2005, is simply not helpful  
24                 to a jury.

25                 It would be possible here for the Court

1 to admit the opinion that in mid February, 2007,  
2 within the detection limits of the FBI Lab, there  
3 was no detectable EDTA in the blood swabs. On  
4 that opinion alone, the State is on much more  
5 solid ground.

6 But the opinion that, therefore, the  
7 blood in the Toyota did not come from the blood  
8 of Steven Avery's vial, which necessarily carries  
9 an opinion about what the EDTA level would have  
10 been, in the swabs of the dried bloodstains at  
11 the relevant time, again, autumn 2005, that's not  
12 helpful to a jury, because it's wholly  
13 unreliable, unsubstantiated, other than by the  
14 man who wrote the protocol was one of the people  
15 who approved his own protocol, donated his blood  
16 for the test, supervised the testing, and  
17 assigned himself to the case.

18 Now, let's not forget, in weighing all  
19 of this, that although good, Mr. LeBeau clearly  
20 is not perfect. He didn't claim that he is and  
21 if it were possible to bring Dr. William Sybers  
22 here from Florida, I would have a pretty good  
23 witness to tell the Court that Mr. LeBeau and his  
24 work is not perfect, neither are perfect.

25 He was proven wrong there on an effort

1 to extrapolate back, nine years in embalmed  
2 tissues, the presence of a metabolite, a muscle  
3 paralytic drug, succinylcholine. As we showed,  
4 the Assistant Attorney General, Special Assistant  
5 Attorney General for the State of Florida, who  
6 prosecuted that case, later filed with the court  
7 a document warning that Mr. LeBeau's results, and  
8 for that matter, National Medical Services  
9 results, Dr. Ballard's results, ought not be  
10 relied upon.

11 So it is a select club that your Honor  
12 is being asked to join. What's different and, I  
13 mean, I'm foreshadowing the next argument, but  
14 this has a bearing now on this question. What is  
15 different and worse about this case and Simpson  
16 is that your Honor is being asked to admit these  
17 mid-trial results, and opinions extrapolated  
18 backward from the results, without benefit of  
19 degradation data, when one side and one side  
20 only, as a practical matter, will have the  
21 ability to do any testing at all.

22 And that's where this case really is  
23 different from Simpson. There is no reason to  
24 believe and, indeed, if my memory serves, both  
25 sides in Simpson participated in EDTA testing and

1 had the opportunity to do that, during the course  
2 of that trial.

3 Not so in this. And there is no  
4 14 million dollar defense fund here that there  
5 was because O.J. Simpson was the one in a million  
6 criminal defendants who had that kind of money to  
7 put into his defense for experts, for lawyers,  
8 for Barry Scheck and Peter Neufeld, people from  
9 the original innocence project at Benjamin  
10 Cardoza Law School, people who are well versed in  
11 chemistry and in forensic science.

12 So acknowledging that it would be  
13 possible here to allow part of Dr. LeBeau's  
14 opinion, that is, the opinion that no EDTA was  
15 detectable by the method they used in February,  
16 2007, I think the Court would err and would allow  
17 evidence that is not helpful to the jury, were it  
18 to allow Dr. LeBeau to go further than that.

19 And the fact that there will be no  
20 independent testing has a bearing on this **Walstad**  
21 analysis because, if for no other reason than  
22 because of this, the failure to detect EDTA in  
23 control samples here is highly, highly suspicious  
24 given the ubiquitous presence of EDTA in the  
25 whole gamut of consumer products, from the soft

1 drinks we drink, where EDTA is used to prevent a  
2 carcinogen from forming, benzine; to Armor All,  
3 used to clean cars and their interiors; to all  
4 sorts of personal care products, detergents,  
5 cleaning products; the failure to detect any EDTA  
6 in any of the controlled swabs is a bright red  
7 flag here. And we would start immediately with  
8 that, if we had an opportunity to do independent  
9 testing. Because it's just flat out counter  
10 intuitive.

11 It just does not comport with common  
12 sense. I will venture a guess that the belief  
13 that the State would find EDTA in the dried  
14 bloodstains and in controlled areas is what led  
15 the State, tactically, in February, 2006, not to  
16 undertake this very testing, on which they have  
17 taken a chance now, once it turns out there is a  
18 blood vial, that there was a source of whole  
19 blood that could have been planted here,  
20 conceivably.

21 And I don't know whether the answer for  
22 those control swabs would lie in just because  
23 there really was no EDTA detectable, or whether  
24 it would lie in the dilution that the FBI used,  
25 200 microliters of inner reagent or fluid added

1 to five microliters of the sample. I don't know.  
2 I'm not a chemist. We'll never know before this  
3 jury comes back with a verdict, if the Court  
4 admits Dr. LeBeau's testimony.

5 I ask the Court not to go down that  
6 path, not to join Judge Ito's club and not to  
7 admit opinions from Dr. LeBeau that, although  
8 they sound impressive, coming from an FBI expert,  
9 in fact, offer no honest help to this jury.

10 THE COURT: Mr. Gahn.

11 ATTORNEY GAHN: Your Honor, the State is  
12 simply asking this Court to apply the law in  
13 Wisconsin to the admissibility of expert testimony  
14 and scientific evidence in Wisconsin. We have given  
15 you a statement of the law, I'm sure the Court is  
16 aware itself of the standard in Wisconsin for the  
17 admissibility of this type of evidence. I think  
18 Dr. LeBeau clearly established to this Court the  
19 wide use of the LC/MS/MS technology and that it is a  
20 technology that can test for chemicals, it doesn't  
21 make any difference what that chemical may be.

22 He's testified how samples will come  
23 into the FBI and say, would you test this to see  
24 if there are any chemicals in it. And perhaps  
25 there will be a panel that they will find. Or

1       some item will come in and say, will you test  
2       this for a specific chemical, such as cyanide, or  
3       something, or EDTA.

4               All of that is possible to be done.  
5       It's done with very standard well recognized  
6       instruments in the scientific community and  
7       that's exactly what he did. Samples were  
8       submitted to him to test for the presence of  
9       EDTA. He has the technology that is world wide  
10      recognized, capable of doing that. And that's  
11      what he did.

12             I think he explained well that this was  
13      a qualitative test, not a quantitative test. I  
14      note that the defense has talked a lot during  
15      cross-examination about quantitating this. But  
16      how do you quantitate something that's not there.

17             His test results on the bloodstains from  
18      the RAV4 and on the controls from the RAV4, there  
19      was nothing there. So this was a qualitative  
20      test under the umbrella of analytical chemistry  
21      and very valid in the scientific community.

22             I think he established his background  
23      and experience in the area of degradation. They  
24      did their own degradation studies. He talks  
25      about so many other fields that are testing for



1           EDTA.  EDTA can be somewhat of a problem because  
2           it does stay around, binds to metals.  And  
3           there's problems in the agricultural world,  
4           wildlife, fish, and game.

5                     I think he was clear, this isn't  
6           something that's not tested for, it is tested for  
7           and it can be tested for.  Everything that the  
8           defense has brought up, whether it be about the  
9           controls, the commercial products, suspiciousness  
10          about the testing results, datasets produced,  
11          degradation rates, all of that clearly goes, your  
12          Honor, to weight of evidence and has nothing to  
13          do with the admissibility of evidence.

14                    And I think a reading of the **Peters**  
15          case, where they did an analysis under the DNA  
16          testing, clearly shows the difference between  
17          admissibility and issues that are for the weight  
18          of evidence.  So I would ask the Court simply  
19          to -- we're not inviting you to join any clubs,  
20          your Honor, we're just asking you to look at the  
21          law in Wisconsin and apply it to the testimony  
22          that you heard from Dr. LeBeau.  Thank you, sir.

23                    THE COURT:  All right.  Well, the reference  
24          to Judge Ito's club is interesting.  Actually, from  
25          my recollection of that case, I believe that the

1 evidence came in without objection, because both  
2 parties must have felt they had something to gain by  
3 it. So to the extent there is a club, one way or  
4 another, I think I'm probably the only member.

5 The historical reference to the O.J.  
6 Simpson case is interesting, but my obligation in  
7 this case is to apply the law as it is in  
8 Wisconsin and determine whether or not the  
9 offered evidence is admissible in this case. And  
10 I think it's helpful to briefly review the  
11 standards that have historically applied in this  
12 jurisdiction and others, governing the admission  
13 of evidence.

14 At one time, the prevailing standard in  
15 many parts of the country was what is known as  
16 the **Frye** test, which held that the trial court is  
17 to determine whether the expert evidence had  
18 gained general acceptance in the particular field  
19 to which it belongs. In this case, I think  
20 there's a serious question about that, because of  
21 the lack of a significant history of EDTA  
22 testing.

23 The United States Supreme Court  
24 subsequently replaced the **Frye** test with the  
25 **Daubert** test, which relaxed the federal standards

1 somewhat, but still required a trial court to  
2 assure that expert testimony is reliable. In  
3 Wisconsin, it's pretty well established that we  
4 have a standard that is more lenient than even  
5 the **Daubert** test, that is the standard that's set  
6 forth in Section 907.02 of the statutes.

7 That statute provides that, as a  
8 condition to the admissibility of expert  
9 testimony, the evidence is admissible if it is  
10 relevant, if the witness is qualified as an  
11 expert, and if the evidence will assist the trier  
12 of fact in determining an issue of fact.

13 In this case, I don't believe there is a  
14 dispute between the parties on the first two  
15 issues. Unquestionably, the evidence relating to  
16 the question of whether or not the blood in the  
17 RAV4 was planted is relevant, certainly it was  
18 the -- a large part of the defense's opening  
19 statement and cross-examination of some of the  
20 witnesses. And, likewise, the State is equally  
21 concerned to show the jury that the blood was not  
22 planted, but came directly from the defendant.  
23 So I think it's definitely relevant.

24 Likewise, there's not a serious dispute  
25 that the witness in this case, Dr. LeBeau, is

1 qualified as an expert. He testified as to his  
2 qualifications. He's got a master's degree, a  
3 doctorate degree. He's worked at the FBI Lab for  
4 a number of years. In fact, he's the head of his  
5 section. There's no question that he is  
6 qualified as an expert.

7 The issue boils down to whether the  
8 evidence will assist the trier of fact in  
9 determining an issue of fact. And I think some  
10 of the comments that have been included in  
11 Wisconsin Court of Appeals decisions and the  
12 Supreme Court are worthwhile repeating here as a  
13 backdrop, if you will, to the standard the Court  
14 is to apply.

15 The Court of Appeals in the **Riva** case,  
16 reported at 266 Wis. 2d, 696, noted as follows:  
17 The approach, that is, the Wisconsin approach to  
18 allowing expert testimony, has served to reduce  
19 the gatekeeper role of the Wisconsin trial court  
20 when it comes to expert testimony. Reliability  
21 is not part of the trial court's function.  
22 Rather, reliability is an issue for the trier of  
23 fact, not the trial judge as a predicate for  
24 admissibility. The reliability of expert  
25 testimony is an issue for the trier of fact, not

1 the circuit court as a predicate for  
2 admissibility. Instead, Wisconsin relies on the  
3 vehicle of cross-examination to test the  
4 reliability of an expert witness.

5 So in looking at some of the items of  
6 dispute, as Mr. Strang pointed out, and which I'm  
7 certain will be a part of the cross-examination  
8 of the witness in this case, there are points to  
9 be made with respect to the reliability of the  
10 testing method that was used in this case.

11 However, the Court cannot say that the  
12 evidence would not assist the trier of fact in  
13 determining an important issue. The witness'  
14 testimony was, to a reasonable degree of  
15 scientific certainty, that the blood that was  
16 found if the RAV4 did not come from the blood  
17 vial in this case. The results are not  
18 quantitative. To be certain, the question of  
19 degradation is an issue which will no doubt be  
20 explored by the defense in its case.

21 But for the Court, on its own at this  
22 point in the proceedings, to make a determination  
23 that degradation has been demonstrated to the  
24 point that the evidence will not assist the trier  
25 of fact, is simply further than the evidence

1           presented today authorizes the Court to go.

2                   The witness testified he didn't believe  
3           that the difference in the results here could be  
4           explained in terms of degradation. And while the  
5           evidence may not be conclusive one way or  
6           another, the Court is not in a position, under  
7           the law which the Court is expected to apply, to  
8           make that determination today.

9                   So, in conclusion, I believe that the  
10          State has met its burden here to show that the  
11          evidence of this expert is admissible under the  
12          standards of Section 907.02 and the Court will  
13          grant the State's motion to allow Dr. LeBeau to  
14          testify in this case.

15                  Based on the Court's decision on the  
16          State's motion, it is necessary to rule on the  
17          defense motion for sequential and independent  
18          testing. I am going to take a few minutes to  
19          retire to chambers and review my notes about this  
20          and then I will come back and issue an oral  
21          decision on that motion as well.

22                  ATTORNEY BUTING: Judge?

23                  THE COURT: Yes.

24                  ATTORNEY BUTING: Just a point of  
25          clarification, so the record is clear, the Court is

1       allowing Mr. LeBeau, then, to give an opinion -- two  
2       opinions, the two opinions sought by the State, that  
3       no EDTA was in the swabs when he tested and that his  
4       opinion is, therefore, the blood on the swabs could  
5       not have come from the tube of blood. Is that  
6       right?

7               THE COURT: I believe he's got opinions  
8       about the blood in the tube as well as the blood in  
9       the vehicle. And I'm allowing him to testify about  
10      both those items.

11             ATTORNEY BUTING: But the ultimate opinion,  
12      though, of saying that the blood on the swabs could  
13      not have come from the blood in the tube; is that  
14      being allowed?

15             THE COURT: Yes.

16             ATTORNEY BUTING: All right.

17             THE COURT: We'll resume in 15 minutes.

18                     (Recess taken.)

19             THE COURT: All right. Mr. Strang.

20             ATTORNEY STRANG: I'm sorry, your Honor,  
21      just two follow-ups. One, we neglected to move the  
22      -- I think Exhibits 438 through 446, which were the  
23      items the defense marked on Dr. LeBeau's  
24      cross-examination.

25             THE COURT: Any objection?

1                   ATTORNEY GAHN: No, your Honor. And I  
2 believe that I failed to move in Exhibits 433 to  
3 437.

4                   ATTORNEY STRANG: No objection there.

5                   THE COURT: Very well, all the exhibits  
6 marked today, then, are admitted into evidence.

7                   ATTORNEY STRANG: Second, your Honor, I  
8 would be remiss if I did not pose directly to your  
9 Honor an argument that **Walstad** ought to be overruled  
10 and that, in the end, Wisconsin courts ought to come  
11 in line with **Daubert** and adopt a similar test of  
12 admissibility of scientific or expert testimony.

13                   I make that argument now and suggest  
14 that, particularly on something this complex,  
15 with as little of the underlying criteria of  
16 reliability as there are present, a court acting  
17 as gatekeeper with, in many ways, superior  
18 resources and perhaps background knowledge of  
19 scientific endeavors, could not make a finding of  
20 reliability as a threshold matter to  
21 admissibility on the opinions that Dr. LeBeau  
22 proposes to offer.

23                   To the extent that Wisconsin leaves that  
24 reliability determination to a jury of  
25 laypersons, I think that this rises to a due



1 process denial. A criminal defendant has a right  
2 both to be tried and sentenced on reliable  
3 information. The due process roots of that go at  
4 least back to the United States Supreme Court in  
5 **Williams vs. New York**, which I think is 1948.  
6 And I'm sorry, I don't have a citation because  
7 I'm relying on my memory of the case here.

8 But to the -- If the Court correctly  
9 applied **Walstad**, a point on which I respectfully  
10 disagree with the Court, nonetheless, leaving the  
11 reliability here to a jury for this unreliable  
12 evidence that the State proposes to offer, I  
13 think results in trying Mr. Avery on unreliable  
14 information and rises to the level of the due  
15 process violation.

16 So I ask the Court, on those brief  
17 remarks, to reconsider its decision on the  
18 assumption that **Walstad**.

19 would be overruled, that its time has  
20 passed, and that Wisconsin will come into line  
21 with the federal courts and the growing majority  
22 of state courts that rely, either on **Daubert** or  
23 even still on the more restrictive **Frye** test.

24 THE COURT: All right. The Court will note  
25 your objection for the record. Given the fact that

1       **Walstad**, I believe, has been reaffirmed a number of  
2       times in reported court decisions, I'm not going  
3       to -- Well, I'm going to deny the request to  
4       reconsider the Court's decision and -- but I will  
5       note your objection for the record.

6               At this time, then, since the Court has  
7       ruled that the EDTA expert evidence offered by  
8       the State is admissible, the Court is required to  
9       rule on the defendant's motion for sequential  
10      independent testing and funding. The defendant  
11      filed that motion on February 25th in order to  
12      permit the defendant to conduct independent  
13      testing for the presence of EDTA in what has been  
14      referred to as the vial of blood from the  
15      Manitowoc County Clerk's Office from the  
16      defendant's 1985 case, as well as the bloodstains  
17      allegedly belonging to the defendant which were  
18      found in the victim's RAV4 vehicle.

19             The motion requests that the Court grant  
20      the defendant permission to conduct testing  
21      sequential to the FBI testing. That would  
22      involve either declaring a mistrial in this case  
23      or continuing it for a period of several months.  
24      In addition, the defendant requests that this  
25      testing be conducted at public expense because

1           the defendant is indigent.

2                       There certainly is provision in the  
3 statutes for expert testing to be conducted by  
4 both parties, including the defendant. The  
5 relevant statute is Section 971.23 (5). The  
6 question in this case is really not so much the  
7 right of the defendant to conduct testing, but  
8 rather the timing of the request to perform such  
9 testing, coming as it does in the middle of the  
10 trial.

11                   The parties do not cite the Court to any  
12 directly relevant case law on this subject and I  
13 don't believe there is any. I attempted to find  
14 relevant case law myself. I think the Court's  
15 decision has to boil down, as it often does in  
16 these cases, as one of fundamental fairness; that  
17 is, under the circumstances as they have  
18 developed to this point, does fairness and a  
19 meaningful opportunity on the part of the  
20 defendant to present a defense require that the  
21 relief being requested by the defendant be  
22 granted.

23                   In order to evaluate all of the  
24 circumstances in this case, under that standard,  
25 the Court believes it is necessary to first

1 review the relevant procedural history of this  
2 case. The Court has to consider not just the  
3 inability of the defense to conduct sequential  
4 testing at this point in the trial, which I doubt  
5 that even the State would contest is a given, I  
6 think it would be difficult for the defendant at  
7 this point to conduct that testing. But the  
8 Court also has to consider the opportunities that  
9 the defendant had in the course of these  
10 proceedings to conduct such testing, had the  
11 defense desired to do so.

12 In that regard, I would go back, first,  
13 to July 10 of last year, which was the date the  
14 Court issued an order requiring notification of  
15 any extrinsic planting evidence to be provided,  
16 by the defendant, at least 30 days prior to the  
17 start of the trial.

18 Approximately 10 days after that, on  
19 July 20 of 2006, that represents the date which  
20 the State asserted and has on a number of  
21 occasions, was the latest date by which the  
22 defense knew of the existence of the container in  
23 the Clerk of Court's Office, which represented  
24 that it contained Steven Avery's whole blood  
25 sample according to the defendant's original

1 motion for access.

2 As the defense noted in it's argument,  
3 that's not the equivalent of knowing necessarily  
4 that the blood vial was there, because the blood  
5 vial hadn't been examined at that point, but the  
6 defendant has not disputed the State's assertion  
7 that the knowledge of at least the existence of  
8 the box representing that it contained the  
9 defendant's sample would have been made known to  
10 the defendant by July 20th of last year.

11 On October 27th of last year the Court  
12 issued a scheduling order setting both a  
13 discovery deadline and the deadline for the State  
14 to name expert witnesses to December 15th of  
15 2006.

16 On December 6 of 2006, which was 9 days  
17 before the discovery deadline, the defendant  
18 filed a motion for order allowing access to prior  
19 court file, which sought the opening of the  
20 container purporting to contain the defendant's  
21 blood, in the Manitowoc County Clerk of Court's  
22 Office.

23 On December 14, the attorneys for both  
24 sides met jointly to examine the vial and found  
25 that it appeared to contain whole blood and

1 represented on its label that it was the blood of  
2 the defendant.

3 On January 4th, the State filed a motion  
4 to exclude the blood vial evidence, or in the  
5 alternative adjourn the trial in order to permit  
6 the State to analyze the blood sample. A hearing  
7 was held on that date.

8 Five days later, on January 9th, the  
9 Court denied the State's motion for a continuance  
10 in order to analyze the vial of blood.

11 On January 12 of 2007, which was not  
12 quite, but close to, 30 days before the scheduled  
13 start of the trial, the defendant did file a  
14 statement on planted blood describing the basis  
15 for seeking introduction of the blood vial  
16 evidence in this case.

17 On January 16th, the State filed a reply  
18 opposing admission of the blood vial evidence.

19 On January 19th, the State asked to be  
20 relieved of its obligation to disclose expert  
21 witnesses with regard to the blood vial evidence.  
22 The State did not oppose that request and the  
23 Court granted it on the record.

24 On January 30th, the Court granted the  
25 defense request to allow the blood vial evidence

1 in, subject to limitations.

2 Taking into consideration that part of  
3 the procedural history in this case, the Court  
4 comes to a few conclusions. First of all, the  
5 Court finds that the defendant in this case did  
6 timely comply with notice requirements that were  
7 set by the Court.

8 The statement on planted blood that was  
9 filed on January 12 was slightly less than 30  
10 days before the start of trial required by the  
11 Court's order, but I believe that at some point  
12 after December the Court allowed that filing by  
13 that date.

14 The history also shows that the  
15 defendant had knowledge of at least the suspected  
16 existence of the blood vial long before the State  
17 did, that is, sometime on or before July 20 of  
18 2006. The defendant indicates, at page 17 of his  
19 brief, that counsel for both sides did not know  
20 of the contents of the box until they opened it  
21 together on December 14th. And while that  
22 technically may be true, given the label on the  
23 box which was attached as an exhibit to the  
24 defendant's motion and the extensive information  
25 about the box in the defendant's December 6th

1 motion, the Court concludes certainly that the  
2 defense had much greater reason to suspect the  
3 existence of the blood vial well before  
4 December 14th; and, in fact, virtually  
5 immediately made it in public statements, an  
6 important part of the defense case.

7 The Court also concludes that if the  
8 defendant had felt the testing of the blood was  
9 important, the defendant had adequate opportunity  
10 in which to arrange for such testing. The  
11 defendant could have sought release of the blood  
12 vial much earlier and requested permission to  
13 test it himself under Section 971.23 (5).

14 In the alternative, if the defendant did  
15 not want to risk spending resources on a test  
16 which could possibly produce inconclusive or  
17 unfavorable results, the defendant could have  
18 disclosed the existence of the blood evidence  
19 earlier, asked the Court to set a deadline for  
20 the State to conduct any testing that it wished  
21 to conduct and still allow the defense adequate  
22 time to make its own decision as to whether or  
23 not it wanted to independently test the blood  
24 vial, all of which could accomplish -- been  
25 accomplished well before the start of trial in



1           this case.

2                   The Court believes the defense decision  
3           not to pursue identification of the blood vial  
4           until very close to the discovery deadline was a  
5           decision that the defense was entitled to make.  
6           That is, I find that it was a reasonable decision  
7           on the part of defense counsel. There certainly  
8           could have been a number of reasons for making  
9           that decision.

10                   While there are procedures for testing  
11           EDTA, as Mr. Buting informed the Court on the  
12           January 4 motion hearing, there are no  
13           standardized -- universal standardized protocols  
14           or universally accepted quantitative standards  
15           and it would have been entirely possible that the  
16           result of any testing conducted by the defense  
17           could have been inconclusive. In addition, the  
18           testing results could have been inculpatory  
19           rather than exculpatory.

20                   Finally, by waiting until shortly before  
21           the time it was permitted to do so, the defense  
22           may have left the State with less time to prepare  
23           to meet the evidence and, specifically, with not  
24           enough time in which to conduct the State's own  
25           tests. It certainly appeared, based on the

1 original State request to adjourn the trial, that  
2 that may well have been the case here.

3 However, the fact that the decision as  
4 to the timing of the motion seeking access to the  
5 blood vial was within the deadlines set by the  
6 Court and was reasonable, that does not mean that  
7 the defendant is allowed to second guess the  
8 strategy at this point and be entitled to a  
9 mistrial or lengthy continuation of the trial in  
10 this case.

11 The Court believes that it would have  
12 been highly foreseeable that, once made aware of  
13 the blood vial evidence, the State would want to  
14 test the blood in order to refute any planting  
15 defense and would likely make every effort to do  
16 so.

17 On that point, I think it's worthwhile  
18 to go back to the transcript of the hearing on  
19 January 4, that is, the hearing on the State's  
20 request to adjourn the trial in this case and  
21 repeat some of statements that were made at that  
22 time.

23 Defense counsel informed the Court at  
24 that time that it only would -- that it would  
25 oppose a continuance of the trial date unless the

1       defendant was released on bail. Included among  
2       the statements from the record of that hearing  
3       are the following from defense counsel: And if,  
4       that is, Mr. Avery, is to remain in custody, we  
5       will and do oppose adjournment of this trial. We  
6       want it to go forward on February 5 if he is to  
7       remain in custody. That was from page 18 of the  
8       transcript.

9               On page 19, defense counsel argued, But  
10       if the State wants to test and if Mr. Avery is to  
11       remain in custody, the trial ought to go forward  
12       while the testing process is going forward.

13              At page 20, defense counsel argued, we  
14       don't pursue testing ourselves. We don't know  
15       that we will. We aren't asking to, but we  
16       understand why the State wants to pursue that  
17       testing.

18              Going on to page 20, we may well oppose,  
19       in the end, the admissibility, the relevance of  
20       those test results, but that, again, is something  
21       the Court could address with the benefit of  
22       knowledge of the test results, presumably, and a  
23       chance to look at the type of testing that was  
24       done, the protocols, and what the case law may  
25       have to say about the admissibility of similar

1 tests.

2 Of course, that all came to pass, but  
3 the point is that the defense was aware at that  
4 time that the State was going to pursue testing.  
5 The defense didn't oppose testing from the State,  
6 as long as an adjournment was not granted. And  
7 even at that point in the proceedings the  
8 defendant was not interested in pursuing  
9 independent testing.

10 Based on that history, the Court  
11 concludes in this case that the defense motion  
12 for sequential independent testing and funding  
13 must be denied. The reasons are as follows:

14 First of all, the Court concludes that  
15 the defendant had adequate time in this case to  
16 pursue testing if he wished to do so.

17 The defense was aware of the likely  
18 existence of the blood vial many months ago.

19 The defendant had an adequate  
20 opportunity, after the discovery of the suspected  
21 existence of the blood vial, to pursue testing.

22 As pointed out by the defendant, the  
23 State could have pursued testing of at least the  
24 blood evidence in the vehicle earlier as well.

25 But the importance of such testing did

1 not become evident until the defendant disclosed  
2 that it was preserved blood in the Manitowoc  
3 County Clerk of Court's Office that was  
4 specifically the alleged origin of the planting  
5 evidence.

6 There could have been other arguments  
7 available to the defendant, for example, we have  
8 heard testimony there were traces of the  
9 defendant's blood found in his trailer, could  
10 have been argued that somehow the State got a  
11 hold of that blood or blood from somewhere else  
12 that may not have been preserved, that was  
13 planted in the RAV4 vehicle.

14 If the blood that was alleged to have  
15 been planted was not preserved blood, the  
16 significance of the lack of EDTA would not  
17 necessarily have been terribly probative.

18 Both parties acknowledge that at this  
19 stage in the development of EDTA testing, there  
20 are not any generally accepted scientific methods  
21 for either testing EDTA or interpreting the  
22 results. From all the Court has been able to  
23 learn at this point, that appears to be due more  
24 to the fact that there's not much demand for it  
25 than anything else. The Court has not heard any

1 evidence to suggest that it's more difficult to  
2 test for EDTA than a variety of other chemical  
3 substances.

4 Especially under the standards for  
5 admission of expert evidence in the State of  
6 Wisconsin, had either party decided they wanted  
7 to pursue testing earlier, they could have done  
8 so with the knowledge that the test results, as  
9 long as conducted by a competent lab, probably  
10 would have been admissible.

11 The Court does not find, in this case,  
12 that the FBI is the only lab in the country or is  
13 somehow uniquely qualified to perform this type  
14 of testing. As we heard earlier today, I think  
15 the last time it was conducted by the FBI was at  
16 the time of the O.J. Simpson trial.

17 And referring, again, to the January 4  
18 transcript, Mr. Buting pointed out to the Court  
19 at that time that their, meaning the FBI's,  
20 expert was called at the O.J. trial, actually  
21 used by the defense in the O.J. case, and was  
22 very helpful to the defense and ultimately very  
23 embarrassing to the FBI who was part of whistle  
24 blower allegations in the very lengthy  
25 investigation that the FBI Lab did of misconduct,

1           or negligence, or sloppy practices in their lab.

2                       So that's -- The role of the FBI in the  
3           O.J. Simpson case didn't exactly establish the  
4           FBI as the sole lab in the country that could  
5           responsibly test for the presence of EDTA.

6                       Now, there is a case that was cited by  
7           the defendant in the brief that the Court does  
8           agree is worth examining here. It may be the  
9           closest case at least that somehow resembles the  
10          facts in this case. That was the case of the  
11          ***United States vs. Kelly***, where an appeals court  
12          reversed a conviction because the trial court did  
13          not allow for a one month continuance of the  
14          trial in order to allow for a sequential testing  
15          as requested by the defendant.

16                      I'm going to quote from that case  
17          briefly setting forth the facts and the ruling of  
18          the Court: In June, 1968, the seized drugs --  
19          and it was a drug case -- were sent to Washington  
20          for tests, including neutron activation tests  
21          which tended to show that the drugs all came from  
22          the same original batch.

23                      The government did not inform the  
24          defendants of this test. They, the defendants,  
25          only became a care of it at the trial, after the

1 testimony of the prosecutions first witness when  
2 the government produced its exhibits. The  
3 appellants also contend that the government had a  
4 positive duty to disclose the results, or at  
5 least the fact that they had taken them. This is  
6 especially -- This is so, especially in light of  
7 the fact the government had opposed discovery on  
8 the grounds that the request was not particular  
9 enough and now the government alone had knowledge  
10 of the particular tests it had taken.

11 The course of the government smacks too  
12 much of a trial by ambush in violation of the  
13 spirit of the rules; a new trial is required with  
14 a fair opportunity for the defense to run its own  
15 neutron activation tests of the material to  
16 determine the atomic similarity or dissimilarity  
17 of the trace elements in the samples.

18 The Court believes there are at least a  
19 couple of significant differences between the  
20 facts in **Kelly** and the facts here. First of all,  
21 the State has disclosed its test results  
22 immediately upon receipt, to the defense, the  
23 State did not have those test results available  
24 until after the trial in this case started.

25 There is no element of trial by ambush



1 in this case. The Court concludes that the State  
2 acted promptly after learning of the existence of  
3 the blood vial to seek to have the tests of the  
4 blood conducted.

5 The primary reason for the receipt of  
6 the results during the trial as opposed to  
7 earlier is because the State did not learn of the  
8 existence of the blood vial until months after it  
9 was believed to exist by the defense.

10 The Court also notes that the defense,  
11 as I said earlier, could have conducted testing  
12 of its own, but did not do so. And as of January  
13 4 of this year, still informed the Court, on the  
14 record, it had no plans to do so.

15 The Court, finally, concludes that the  
16 remedies suggested by the defense in this case to  
17 allow sequential testing are inadequate. As I  
18 suggested earlier, had -- had this matter come up  
19 well ahead of the trial, so that the results  
20 would have been in before the trial, I may well  
21 have ruled differently. I mostly likely would  
22 have allowed the defense to pursue sequential  
23 testing.

24 But at this date, the remedies suggested  
25 are, first, a continuation of the trial, for an

1        unspecified period of months. And that simply is  
2        not practical. I think, actually, both parties,  
3        in their briefs, probably recognize that. First  
4        of all, it would be very difficult to prevent the  
5        jurors from being exposed to publicity about the  
6        case in the meantime.

7                And even more significant than that, we  
8        have heard a great deal of testimony. We're  
9        beginning week four of the trial, I'm not sure  
10       how the jurors could be expected to have -- could  
11       be expected to have a meaningful recollection of  
12       the testimony that's been introduced, the  
13       evidence that's been received, and use that  
14       information to come to a verdict some unspecified  
15       period of months from now.

16               Likewise, the Court believes that there  
17       are simply no grounds in this case to declare a  
18       mistrial. The primary reason that the defense  
19       has not conducted EDTA testing earlier is because  
20       the defense chose not to pursue it when there  
21       would have been time to do so.

22               The defense has made the alleged  
23       planting of blood a vital part of this case. As  
24       defense counsel pointed out at the January 4  
25       hearing, he, meaning Mr. Avery, has been saying

1 from the beginning, to anybody with a microphone  
2 and TV camera, initially as early as November,  
3 2005, that if his blood was in the Toyota,  
4 somebody planted it. So there hasn't been any  
5 secret about his defense and his view of the  
6 facts.

7 If testing of the blood was determined  
8 by the defense to be vitally necessary to that  
9 planting defense, which was known from the very  
10 beginning, it should have been pursued far  
11 earlier than it has been.

12 The bottom line in this case is that  
13 both parties had an opportunity in this case to  
14 pursue testing. The Court believes that because  
15 of its earlier knowledge of the existence of the  
16 blood vial, the State had a slight -- or the  
17 defense had a slightly earlier opportunity, at  
18 least than the State, but did not pursue the  
19 testing. And for that reason a continuation of  
20 the trial at this point is not warranted.

21 Because of the Court's decision denying  
22 the motion, it's not necessary for the Court to  
23 act on the public funding request from the  
24 defense in this case. However, I feel compelled  
25 to make a few comments about that request, should

1           it become relevant at some point.

2                       First of all, if a defendant finds  
3           himself in the position of Mr. Avery, that is,  
4           let's say the defendant was determined to be  
5           indigent, I believe the proper course to follow  
6           was set forth by the Court of Appeals in the case  
7           of ***Dressler vs. Racine County Circuit Court***, a  
8           1991 Court of Appeals case. And the Court,  
9           there, essentially, when a private counsel  
10          requested funding for testing on the basis that  
11          the defendant was unable to comply with the terms  
12          of the retainer agreement and financially unable  
13          to either continue to pay the attorney or pay for  
14          testing, ruled that the defendant should contact  
15          the Public Defender's Office, there's a provision  
16          in the Public Defender rules to allow, not only  
17          for testing, but also to appoint acting counsel,  
18          even in the middle of a case, and be paid by the  
19          Public Defender, if the defendant is unable to  
20          continue to comply with the terms of any retainer  
21          agreement.

22                      The other point I will note relates to  
23          the affidavit which was filed with the motion in  
24          this case. I did take some time to read that and  
25          while I don't have the entire retainer agreement

1 in front of me, the affidavit notes that the lump  
2 some payment that was paid by the defendant, to  
3 defense counsel, was accepted as a minimum earned  
4 and maximum fee; that is, the fee was going to be  
5 the amount for representation in the trial,  
6 regardless of the amount of hours earned.

7 Also significant in the Court's mind is  
8 paragraph 7 in which defense counsel indicates,  
9 my firm's retainer agreement with Mr. Avery  
10 requires the firm to pay expenses including  
11 expert witnesses and any other necessary  
12 litigation expenses after the amount in our trust  
13 account is exhausted.

14 Now, as I read that, the logical reading  
15 to me would be that the retainer agreement may  
16 well obligate defense counsel to pay for testing  
17 expenses and that the defendant's status at this  
18 time as being indigent or not is not terribly  
19 relevant because there is a contractual agreement  
20 which has already been fulfilled by the defendant  
21 which requires defense counsel to pay for testing  
22 or expert witnesses. As I say, my ruling doesn't  
23 require me to rule on that, so I'm not going to.  
24 I only offer that as my observations.

25 In any event, the Court is going to deny

1           the defendant's motion for sequential independent  
2           testing and funding. I will direct the State to  
3           prepare the order, both on that motion and the  
4           Court's earlier ruling today.

5                     And I will see the parties tomorrow and  
6           the jury will be back here to begin testimony.  
7           Anything else before we adjourn today?

8                     ATTORNEY BUTING: Do you want to meet  
9           briefly in chambers?

10                    THE COURT: That sounds fine, I will see  
11           everybody in chambers in a few minutes.

12                    (Proceedings concluded.)

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1 STATE OF WISCONSIN )  
 )ss  
2 COUNTY OF MANITOWOC )  
3

4 I, Diane Tesheneck, Official Court  
5 Reporter for Circuit Court Branch 1 and the State  
6 of Wisconsin, do hereby certify that I reported  
7 the foregoing matter and that the foregoing  
8 transcript has been carefully prepared by me with  
9 my computerized stenographic notes as taken by me  
10 in machine shorthand, and by computer-assisted  
11 transcription thereafter transcribed, and that it  
12 is a true and correct transcript of the  
13 proceedings had in said matter to the best of my  
14 knowledge and ability.

15 Dated this 2nd day of January, 2008.  
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19 \_\_\_\_\_  
Diane Tesheneck, RPR  
20 Official Court Reporter  
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