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REPORTER'S RECORD  
VOLUME 41 OF ? VOLUMES  
CAUSE NO. 11DCR056513

THE STATE OF TEXAS ) IN THE DISTRICT COURT  
)  
vs. ) FORT BEND COUNTY, TEXAS  
)  
CORNELIUS MILAN HARPER ) 434TH JUDICIAL DISTRICT

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**PRETRIAL MOTION**

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On the 14TH day of May, 2014, the following proceedings came on to be held in the above-titled and numbered cause before the Honorable James H. Shoemake, Judge Presiding, held in Richmond, Fort Bend County, Texas.

Proceedings reported by computerized stenotype machine.

**APPEARANCES**

1  
2  
3 Mark Hanna  
4 SBOT NO. 00787638  
5 Fort Bend County District Attorney's Office  
6 301 Jackson Street  
7 Richmond, Texas 77469  
8 Telephone: (281) 341-4460  
9 Fax: (281) 341-4440  
10 Attorney for State of Texas  
11

12  
13 Amanda Bolin  
14 SBOT NO. 24045521  
15 Fort Bend County Attorney's Office  
16 301 Jackson Street  
17 Richmond, Texas 77469  
18 Telephone: (281) 341-4551  
19 Attorney for State of Texas  
20

21 Fred Felcman  
22 SBOT NO. 06881500  
23 Fort Bend County Attorney's Office  
24 301 Jackson Street  
25 Richmond, Texas 77469  
Telephone: (281) 341-4551  
Attorney for State of Texas

16 -AND-

17 Stephen Doggett  
18 SBOT NO. 05945700  
19 201 S. 11TH STREET  
20 Richmond, Texas 77469  
21 Telephone: 281.342.3321  
22 Attorney for Defendant  
23

24 Katherine Scardino  
25 SBOT NO. 17718625  
3730 Kirby, Ste 1120  
Houston, Texas 77098  
Telephone: 713.520.5223  
Counsel for Defendant

1 (May 14, 2014)

2 P-R-O-C-E-E-D-I-N-G-S

3 THE COURT: Good morning, counsel.

4 MS. SCARDINO: Good morning.

5 MR. HANNA: Good morning.

6 THE COURT: Everybody ready to go forward?

7 MR. HANNA: State's ready, Your Honor.

8 MR. DOGGETT: We're ready, Judge.

9 THE COURT: All right.

10 MR. DOGGETT: Before we start, I just  
11 wanted to alert you of something. Mark and I have been  
12 talking. We are -- because of the amount of evidence --  
13 and I don't know how long these witnesses are going to  
14 take, but we're concerned that we might not be able to  
15 get through everything we need to get through with  
16 today. We don't know. I guess we'll just have to play  
17 it by ear.

18 But I did want to warn you that based on  
19 our -- my prep time that -- I have a concern along those  
20 lines. I've warned my witnesses, they've made potential  
21 arrangements to extend their stay an extra night, if  
22 necessary. But that's where we are.

23 I have in my notes we're going to take up  
24 the Daubert issue. After we finish that, we were going  
25 to try to take up the disputed issues in the motion to

1 exclude parts of Harper's statement.

2 And I think those are the main things. I  
3 do have some material to give the Court on instructions  
4 to the jurors about note taking. That's not going to  
5 take up any time, we're just going to give you the  
6 report.

7 THE COURT: Well --

8 MR. HANNA: Judge, if I may.

9 THE COURT: Please, I'm sorry.

10 MR. HANNA: We did have some discussions  
11 about the length of this hearing. I want to remind the  
12 Court that this case has been pending for maybe four  
13 years, Judge. And this motion was not urged up until --  
14 a little less than maybe two weeks ago. We have  
15 prepared for it and we're ready to go forward today.  
16 However, we're also prepared to start our case and we've  
17 coordinated with witnesses and travel times and  
18 additional expense and inconvenience on those witnesses  
19 to be here. And we're asking that there not be any  
20 delay in beginning the trial tomorrow. And we encourage  
21 the Court to have this hearing concluded today.

22 THE COURT: Well, I'm prepared to stay  
23 here, but I will say this. I'm also supposed to lead a  
24 little troop of cub scouts on the Pledge of Allegiance  
25 at a memorial for fallen police officers, first

1 responders that Missouri City's having, so -- at 6:30,  
2 so, you know, we can go up to -- well, we can't even go  
3 up to 5:00 o'clock. It's probably going to -- we'll  
4 have to stop at 4:30 because there's a counsel of Judges  
5 meeting at 4:30. So, we'll just do the best we can. I  
6 don't know how to do it any different, you know, if it  
7 carries till tomorrow, we'll see about that.

8 MR. DOGGETT: It may go faster than what  
9 I'm thinking.

10 THE COURT: Well I'm hoping to be able to  
11 prod y'all along a little bit in case it starts getting  
12 stuck.

13 MR. DOGGETT: Okay.

14 THE COURT: Okay? All right. For  
15 purposes of the record, counsel are -- for both sides  
16 are present as is of the defendant. And at this time  
17 it's my understanding we're going to start a Daubert  
18 hearing. And with that, Mr. Doggett.

19 MR. DOGGETT: Well, Judge --

20 THE COURT: Is that the order in which you  
21 had planned to go?

22 MR. DOGGETT: Well, I had assumed that the  
23 State would call their witnesses first since we have a  
24 little bit of questioning their qualifications and their  
25 basis for which they're rendering their opinions, so

1 that was how I anticipated it would go.

2 THE COURT: Well, I'm just giving you the  
3 opportunity to --

4 MR. DOGGETT: Right.

5 THE COURT: -- to make that statement  
6 because it always --

7 MR. DOGGETT: Right.

8 THE COURT: -- although you objected, it  
9 suddenly turns, and the State has the duty to put their  
10 witness on and make them -- make their case for their  
11 credibility and their ability to testify about expert  
12 matters. Okay.

13 MR. HANNA: We're prepared to go first,  
14 Judge.

15 THE COURT: All right. Then go first.

16 MR. HANNA: And with that, I'd like to  
17 take an opportunity to make a brief opening statement to  
18 what I expect the Court to hear today.

19 THE COURT: You may.

20 **OPENING STATEMENT**

21 MR. HANNA: Okay. Judge, the defendant  
22 filed a general or a very generic Motion for Discovery  
23 Production of Rule 702, and requested a Rule 702 hearing  
24 a number of years ago, I believe. Since then, as of  
25 4:30, yesterday afternoon, he filed a more specific

1 motion, a Motion to Exclude Firearm Expert Testimony  
2 concerning toolmark and firearm identification. And  
3 it's the State's understanding that's the motion that  
4 you choose to go forward on.

5 MR. DOGGETT: Right.

6 MR. HANNA: The one that was filed  
7 yesterday.

8 MR. DOGGETT: Right.

9 MR. HANNA: Okay. And with that, I will  
10 curtail my arguments to that particular, more specific  
11 motion.

12 What Defense counsel is asking you to do  
13 here, Judge, is to exclude one of the most well settled  
14 and long existing forensic examinations and, slash,  
15 sciences for consideration for the jury in this case,  
16 and that's ballistics or firearms toolmark comparisons  
17 and identifications.

18 In the defendant's motion and their brief,  
19 they included not a single case in which a court, in any  
20 jurisdiction across the land, has excluded this kind of  
21 testimony. And in opposition to that, Judge, I'm  
22 prepared to provide you with some cases in which the  
23 courts have repeatedly allowed for such testimony that  
24 the Defense is trying to keep out today.

25 For purposes of the record and the Court's

1 consideration, the State has a case for the Court, one  
2 of Cantu V. State, 144 -- I'm sorry, 141, Texas Crim 99.  
3 This is a 1939 case, Judge, this is when they started  
4 admitting this type of testimony.

5 We then move to 2002 where the Court of  
6 Criminal Appeals in Sexton V. State, 93 S.W.3d 96,  
7 recognized that toolmark and firearms examinations is a  
8 reliable science and evidence should be admitted.

9 Sexton is an unusual case, and it actually  
10 excluded the testimony from a particular scientist on  
11 that day because of the \*leaps he was attempting to  
12 make, for lack of a better term, but they ultimately  
13 said that this is a reliable science, just not in this  
14 particular case.

15 I also cite an unpublished Court of  
16 Criminal Appeals of Texas case, which is cited in 2009  
17 Westlaw, 335276, which is \*Rammy V. State, \*and that's  
18 this Court again. And I offer that just as a  
19 demonstration that the Court of Criminal Appeals has  
20 continued to allow this type of testimony in cases.

21 Federally, Judge, this is United States  
22 versus Hicks which is 389, Federal Supplement 3rd, 514.  
23 And this case is also a 5th Circuit where they allowed  
24 the testimony to actually cite Sexton and some other  
25 Texas cases in which it is admissible. And I'm only



1 offering a tiny portion of it, the case law that's out  
2 there that the courts have allowed this type of  
3 testimony. Now, while there are many cases that you do  
4 a search that demonstrate that this kind of testimony  
5 has been admitted, there are very few cases in which  
6 courts have held Daubert hearings in regards to this  
7 type of evidence and that's because it's so rarely  
8 filed. It's such a well settled evidence that -- well  
9 settled practice and area of expertise that people  
10 aren't filing Daubert hearings, at least in the State of  
11 Texas and very few outside the State of Texas.

12           There was one case that the defendant  
13 mentioned in his motion and his brief. That's from the  
14 3rd Circuit, I believe or it's the United States of  
15 America versus Otero, and it's 849, F. Supp. 2nd 425.  
16 And I encourage the Court to read this case, Judge. It  
17 is a very well written opinion and it addresses the  
18 issues in which the Defense is bringing before this  
19 Court today.

20           And as in every other case, the Court  
21 ultimately reviewed the evidence and concluded that this  
22 is a well settled science and that it is reliable and it  
23 passes the Daubert, Frye, Kelly, names of all the tests  
24 that this Court would be considering in determining  
25 whether or not the evidence should be admissible.

1                   Lastly, Judge, since the Rules of Evidence  
2 do not apply in this type of hearing, the Court is  
3 permitted to review articles and other types of articles  
4 and treatises in regards to its decision on whether or  
5 not to admit this evidence. And at the conclusion of my  
6 witnesses' testimony, because she'll refer to some of  
7 these articles, I intend to offer those for the Court.  
8 And there's an abundance of articles in which this  
9 science has been well tested, it's been peer-reviewed  
10 and it's been accepted in the scientific community as a  
11 valid area.

12                   And with that, Judge, I'll call the  
13 State's first witness, Donna Eudaley.

14                   MR. DOGGETT: Judge, can I make a brief  
15 response?

16                   THE COURT: You may.

17                   **OPENING STATEMENT**

18                   MR. DOGGETT: Judge, this is a Daubert  
19 hearing. The whole point of the Daubert case and the  
20 Kelly case is to impress upon the Court that scientific  
21 evidence is powerful evidence. Jurors have a tendency  
22 to believe it, perhaps more than other evidence because  
23 it purports to be quote, scientific, unquote. And that  
24 is the underpinning of those decisions that put all  
25 these standards in place that the Court is to use in

1 reviewing -- in acting as a gatekeeper in reviewing the  
2 evidence and deciding whether or not to expose the jury  
3 to the evidence.

4 I know the Court is familiar with the  
5 Daubert and Kelly standards, we'll be talking about  
6 those, I'll use those as a basis for many of my  
7 questions. But what the Court is going to find is that  
8 yes, it is true, this evidence has been admitted for  
9 many, many, many decades. But like other, quote,  
10 scientific, unquote, evidence, when the Court hears how  
11 this stuff is done, you're going to have some serious  
12 misgivings, I believe about whether it really is  
13 scientific and whether it's sufficiently reliable to be  
14 admitted.

15 There's other scientific evidence that  
16 well known law enforcement agencies that relied on for  
17 years that had been in recent times abrogated, such as  
18 bullet lead analysis comparison, hair follicle  
19 comparison. These are things that for decades law  
20 enforcement relied on to help make their cases. And  
21 now, it's been discovered or determined that they are  
22 not sufficiently reliable to be allowed as evidence, we  
23 believe that ballistic evidence falls in that category.

24 There is a -- and you'll hear more about  
25 this -- but a recent, a couple of reports from the

1 National Academy of Sciences that specifically address  
2 the reliability of firearms and toolmark evidence. And  
3 the problem they say with the evidence is that it  
4 remains a subjective decision based on unarticulated  
5 standards with no statistical foundation for the  
6 estimation of error rates.

7 And I believe the evidence is going to  
8 show that they do not have solid error rates to  
9 determine how often they're wrong, that it is extremely  
10 subjective -- subjective and that the standards are  
11 really non-existent as to how they determine whether or  
12 not they think something is a match or not.

13 So we look forward to presenting you with  
14 this information and we're ready to proceed.

15 THE COURT: All right. If we could get  
16 the first witness in here.

17 (Witness sworn.)

18 THE COURT: You may proceed when you're  
19 ready.

20 MR. HANNA: Thank you, Your Honor.

21 **DONNA EUDALEY,**

22 having been first duly sworn, testified as follows:

23 **DIRECT EXAMINATION**

24 Q (By Mr. Hanna) Ms. Eudaley, would you please  
25 introduce yourself to the Court.

1 A. My name is Donna Eudaley.

2 Q. Donna, what do you do for a living?

3 A. I'm a firearms examiner with the Houston  
4 Forensic Science Center, Forensic Analysis Division,  
5 Firearm Section.

6 Q. And how long have you been employed in that  
7 capacity?

8 A. The Houston Forensic Science Center has been  
9 since April 3rd of this year. I've been a firearms  
10 examiner for seven years, I have been with the Crime Lab  
11 for a total of twelve years.

12 Q. Okay. And that recent hiring is because the  
13 organization that does the evidence examination for HPD  
14 has changed.

15 A. Yes, that's correct.

16 Q. Explain to the Court what it was from and what  
17 it is now.

18 A. We used to be the Houston Police Department  
19 Crime Laboratory. In an effort to be separated from any  
20 law enforcement agency, there has been a reorganization,  
21 so we are now the Houston Forensic Science Center Local  
22 Government Corporation, Incorporated. It's a private  
23 company that now manages the employees in the -- that  
24 were in the crime laboratory as well as the  
25 identification division and the crime scene unit.

1 Q. So you've been continually employed in same the  
2 capacity, it's just that your boss has changed names.

3 A. That's correct.

4 Q. Okay. What is your educational background,  
5 where did you go to college?

6 A. I went to Texas A&M University where I earned a  
7 Bachelor of Science.

8 Q. In what?

9 A. Wildlife and Fisheries Sciences.

10 Q. Okay. And then what education did you obtain  
11 in order to do the job you're doing now?

12 A. An approximate two-year long on the job  
13 training program under the experience -- or the  
14 supervision of more experienced firearms examiners.

15 Q. Okay. So did you -- do you have to obtain any  
16 kind of certificates or any kind of degrees in order to  
17 get a job with the HPD Crime Lab?

18 A. No, there's no particular certification or  
19 degree that's required except that it is a requirement  
20 to have a Bachelor of Science or a closely related  
21 science field engineering, stuff like that.

22 Q. Okay. And so you've met those criteria, and  
23 you first got hired on by HPD, you said twelve years  
24 ago?

25 A. Yes.

1 Q. In what capacity?

2 A. I worked in the Centralized Evidence Receiving  
3 Section. We received and processed narcotics, enter  
4 data into the database and process destruction orders --

5 Q. Okay.

6 A. -- for those narcotics. I transferred into the  
7 Firearms Section of the Crime Laboratory about nine and  
8 a half years ago.

9 Q. Okay. And is that when you began to obtain  
10 that two years of training that you mentioned to the  
11 Judge?

12 A. Yes. My training did not begin right away. I  
13 started doing some more technician type responsibilities  
14 and then my training began and it was approximately two  
15 years long.

16 Q. What did that training entail?

17 A. We follow the recommended training guide  
18 published by the Association of Firearms and Toolmark  
19 Examiners as well as the Alcohol, Tobacco and Firearms.  
20 It's a comprehensive training program that covers the  
21 history of firearms, the manufacturing, the history of  
22 ammunition manufacturing, a history of firearms  
23 identification. We learn how to troubleshoot firearms  
24 so we learn how to take apart and put back together  
25 firearms, how the firearms are manufactured currently

1 and in the past, we also then of course have microscopic  
2 training. So we actually learn how to do the job that I  
3 do which is compare fired components that were fired  
4 from a particular firearm and try to determine if  
5 unknown components were fired in that firearm.

6 Q. Okay. Now in regards to your training, you  
7 mentioned that you have some training in regards to  
8 where these firearms are manufactured?

9 A. Yes.

10 Q. Does that entail visiting the firearm  
11 manufacturers and learning from the actual  
12 manufacturers?

13 A. Yes.

14 Q. Okay. Are there any particular ones that you  
15 attended?

16 A. Yes. I have visited Ruger Arms, Smith and  
17 Wesson Arms, Beretta Arms, STI International, those are  
18 the factories that I toured.

19 Q. Okay. And there, they give you a tour and give  
20 you a class, I guess, on how they go about manufacturing  
21 their firearms?

22 A. During the tour, we're able to ask questions.  
23 Ideally it's a person -- every tour that I've been in,  
24 it's -- the person who is leading the tour is very  
25 knowledgeable in the manufacturing techniques and knows



1 what types of questions we will be asking and how to  
2 answer them as far as the manufacturing of those  
3 firearms.

4 Q. So the tour is designed to educate firearms  
5 examiners?

6 A. Yes.

7 Q. And do you find that having awareness of the  
8 method in the way these firearms are manufactured is  
9 beneficial in carrying out your responsibilities?

10 A. Yes.

11 Q. Okay. Tell the Judge a little bit about  
12 your -- you mentioned the microscopic aspect of your  
13 job. Tell the Judge a little bit about what your  
14 training entailed in regards to that?

15 A. The training itself, we review the AFTE theory  
16 of identification and the range of conclusions that  
17 AFTE -- or the Association of Firearms and Toolmark  
18 Examiners says that we can make. So the training begins  
19 with actually just test-firing firearms and comparing  
20 those test-fires within each other. So I take three  
21 cartridge cases with three bullets and I look and I see  
22 the agreement of the characteristics that were left on  
23 those cartridge cases with the bullets by the firearm, I  
24 see the amount of agreement and the amount of  
25 disagreement of the characteristics. I also compare

1 test-fires from firearms that I know are not the same,  
2 so I take a Ruger and compare it to test-fires from  
3 another Ruger. And I look at those -- I look at those  
4 markings and I see what similarities and what  
5 differences, I note and reviewing hundreds if not  
6 thousands of test-fires.

7 Q. Okay. Now, you mentioned -- at the beginning,  
8 you mentioned A-F-T-E, what is that?

9 A. The AFTE is the Association of Firearms and  
10 Toolmark Examiners.

11 Q. Okay. And what organization is that?

12 A. It's the -- the only one that I am aware of, a  
13 professional organization for firearms and toolmark  
14 examiners.

15 Q. Okay. Now are you a member of that?

16 A. Yes, I am.

17 Q. Okay. You also mentioned that your lab is --  
18 your lab is accredited.

19 A. Yes.

20 Q. And was it back in 2010 accredited?

21 A. Yes, it was.

22 Q. Okay. Who is it accredited by?

23 A. ASCLD Lab and Texas Department of Public  
24 Safety.

25 Q. Okay. And it's maintained its accreditation

1 for the entire time?

2 A. Yes.

3 Q. Okay. You began to discuss a little bit,  
4 the -- in regards to this field of expertise, have there  
5 been articles written in regards to firearms examination  
6 and toolmark examination?

7 A. Yes.

8 Q. Many or few?

9 A. Many.

10 Q. Okay. And do you have access to those  
11 articles?

12 A. Yes.

13 Q. And do you review them in your continuing  
14 education in carrying out your responsibilities?

15 A. Yes.

16 Q. Okay. And are those articles subject to peer  
17 review?

18 A. Yes, they are.

19 Q. Okay. And the peer review is -- explain to the  
20 Court what peer review means.

21 A. Peer review means that other experts in the  
22 field have a chance -- before the article is published  
23 as well as after the article is published -- to review  
24 the content of an article, make comments. It can be  
25 submitted for a rewrite or to clarify questions before,

1 and then after, obviously it would be rewritten but  
2 there can be clarification on any questions.

3 Q. Okay. So it's a way to insure the integrity  
4 and the reliability and the scientize that many people  
5 are having an input in.

6 A. Yes.

7 Q. Okay. Now you mentioned that -- I'm going to  
8 call it AFTE, is that the acronym for the Association of  
9 Firearms and Toolmark Examiners?

10 A. Yes.

11 Q. Okay. So we'll refer to it as AFTE from here  
12 on out. You mention that AFTE is the only organization  
13 that you're aware of?

14 A. That is specifically for firearm and toolmark  
15 examiners, yes.

16 Q. Okay. Is it nation-wide?

17 A. Yes, it's international.

18 Q. International?

19 A. Yes.

20 Q. Okay. And are you required to be a member of  
21 that association for your employment?

22 A. No.

23 Q. No. But that's something you've chosen to do?

24 A. Yes.

25 Q. Are most of the examiners in your facility also

1 AFTE members?

2 A. Yes.

3 Q. Does AFTE provide continuing education and  
4 continuing publications for your consideration as a  
5 firearms examiner?

6 A. Yes.

7 Q. Now have you heard of an organization called  
8 SWGGUN?

9 A. Yes.

10 Q. Can you tell the Court what SWGGUN is.

11 A. SWGGUN is a -- I'm not a hundred percent  
12 familiar with SWGGUN. I believe that it's an  
13 organization that was kind of, like, each of the  
14 forensic disciplines has a SWGGUN, it's a scientific  
15 working group. And it's composed of members of that  
16 forensic discipline from around the country, and they  
17 may or may not be AFTE members in the SWGGUN  
18 corporation. But they try to give technical guidance  
19 and procedure -- on procedures and methods within a  
20 particular forensic discipline.

21 Q. Okay. Do you ever use that organization as a  
22 resource for obtaining additional information about  
23 firearms examinations?

24 A. Yes.

25 Q. Is it something that you rely on?

1           A.    Maybe not rely on.  Sometimes the guidance  
2 provided in SWGGUN is relied upon by assessors when  
3 they're making sure that a technical procedure or a way  
4 that we're documenting something is accepted within the  
5 field.  And so I have checked the SWGGUN guideline  
6 listings to make sure that what we are doing is in line  
7 with what is recommended in the field.

8           Q.    Okay.  And does -- let's go back to AFTE.  Is  
9 your lab in compliance with the policies and procedures  
10 set out by AFTE?

11          A.    AFTE doesn't really set out policies around  
12 procedures, they make recommendations for how to do  
13 things; and yes, we are in compliance with those  
14 guidelines.

15          Q.    Okay.  And you are a member of AFTE; is that  
16 correct?

17          A.    Yes.

18          Q.    Are there any other professional organizations  
19 that are -- for your job related that you're a member  
20 of?

21          A.    I'm not a member of any other professional  
22 organizations, no.

23          Q.    Okay.  Now have you ever testified before as an  
24 expert?

25          A.    Yes.

1 Q. On few or many occasions?

2 A. No.

3 Q. About how many times?

4 A. Probably twenty-five.

5 Q. Okay. And that's in regards to your  
6 examination of specific evidence in a case?

7 A. Yes.

8 Q. Have you ever testified in a Daubert hearing  
9 before?

10 A. No, I have not.

11 Q. Okay. Have you ever heard of a firearms  
12 examiner testifying in a Daubert hearing prior to today?

13 A. I have heard of, not within my laboratory.

14 Q. Okay. So that's -- I should have narrowed it.  
15 In -- as far as your laboratory, nobody's said, hey,  
16 I've done that before?

17 A. No.

18 Q. Okay. So it's an unusual thing?

19 A. Yes.

20 Q. Okay. Now, does -- let's talk more about now  
21 the expertise that -- your firearms examination  
22 expertise, does that field rely on accepted principles?

23 A. Yes.

24 Q. Okay. What is that -- those principles that  
25 that field relies on?

1           A.    The principle that we rely on is that when a  
2 firearm is manufactured, it's manufactured by a tool  
3 that works on that firearm or multiple tools and the  
4 tool, as it's working on that firearm, leaves marks  
5 behind.  And those marks change from one firearm to the  
6 next, in fact, they change within the same firearm many  
7 times.  So that -- that firearm then has unique markings  
8 to the next firearm that is manufactured by that same  
9 tool, the same time, and the same place.

10                   And when a bullet or a cartridge case is  
11 fired in that firearm, those unique markings can be  
12 imparted from the firearm onto the fired evidence.  So  
13 we can then, as firearms examiners, look at the fired  
14 evidence that we know was fired in a particular firearm  
15 and compare it to unknown samples and determine whether  
16 or not based on the agreement of individual markings  
17 whether or not it was fired in the same firearm.

18           Q.    And then that's, in essence what you do, that's  
19 the principle you rely on?

20           A.    That is the principle that I rely on, yes.

21           Q.    Now, has this information been gathered  
22 overtime?

23           A.    Yes.

24           Q.    Okay.  And I guess AFTE is probably one of the  
25 organizations, but in this area of expertise, is this



1 kind of information communicated amongst the experts in  
2 that field?

3 A. Yes.

4 Q. Now, you said you testified twenty-five times  
5 as an expert --

6 A. About.

7 Q. About, approximately, okay. And there are how  
8 many other examiners are there in your lab?

9 A. That are currently doing --

10 Q. Firearms.

11 A. Case work would be three other examiners, two  
12 trainees and my boss who does firearm examination but  
13 he's not full-time.

14 Q. Okay. And so have they testified before that  
15 you're aware of --

16 A. Yes.

17 Q. -- as experts?

18 A. Yes.

19 Q. Okay. So, is it safe to say that this firearm  
20 examination has been recognized as a legitimate endeavor  
21 and a legitimate science, therefore, as a field of  
22 expertise?

23 A. Yes.

24 Q. Okay. And not only in Texas, but across the  
25 country?

1           A.    Yes.

2           Q.    Do you believe that your testimony in regards  
3 to this kind of evidence, ballistics evidence or  
4 firearms evidence would assist a jury in making a  
5 determination on the value and credibility of some  
6 evidence?

7           A.    Yes.

8           Q.    Okay. You've explained it a little bit about  
9 what -- when you explained the principle, but tell the  
10 Judge what you do when you obtain the evidence that  
11 you're required to examine. For instance, just  
12 generally, and let's say you get shell casings and a  
13 bullet and a gun, tell the Judge the process that you go  
14 through when you get that piece of evidence.

15          A.    The first thing I would do is actually examine  
16 the firearm. I would examine the firearm to make sure  
17 that it was safe to fire. And then as long as the  
18 firearm was safe to fire, I would test-fire the firearm  
19 to collect a set of known bullets and cartridge cases so  
20 that I could then compare to my unknown samples that  
21 have been submitted as well. I would take those bullets  
22 and the cartridge cases from that firearm and examine  
23 them under a comparison microscope. The comparison  
24 microscope is two microscopes that have actually been  
25 combined into one so that I have two stages and one eye

1 piece, so that when I look through my eye pieces, I can  
2 see two separate objects at the same time. I examine  
3 the bullets from the cartridge cases for the individual  
4 markings left on those cartridge cases by the firearm.  
5 And I know they're individual because of the previous  
6 research that has been done as well as what I have  
7 personally seen. And we can go into more --

8 Q. We'll talk about it in a moment.

9 A. Not right now. Once I establish that there's  
10 agreement of individual characteristics within the  
11 test-fires that I know were fired in that same firearm,  
12 I will then examine the unknowns that have been  
13 submitted as well.

14 First, what I look for on the unknowns are  
15 agreement of class characteristics. Class  
16 characteristics are general characteristics that many  
17 firearms, even firearms that are not from the same  
18 manufacturer may have in common, things like caliber,  
19 the way that markings that are left -- for instance,  
20 there may be parallel markings or circular markings on  
21 the breech face of the firearm, that's a class  
22 characteristic, the shape of the firing pin. For a  
23 bullet, it might be the number of lands and grooves, the  
24 width of the lands and grooves and the twist of the  
25 lands and grooves, so I'm looking for agreement in

1 class. If there's no agreement in class  
2 characteristics, then I can actually eliminate and say  
3 that these two items were not fired in the same firearm.  
4 If I establish that there are consistent class markings,  
5 then I look for individual markings. When I look for  
6 agreement of individual markings, before I say  
7 identification, not only do I look for agreement that  
8 exceeds what we say is the best known non-match, which  
9 would be the best agreement that I have seen between  
10 cartridge cases or bullets that I know were not fired in  
11 the same firearm. There's still going to be some random  
12 agreement that we see, and especially if they were  
13 consecutively manufactured, we may see some similarity,  
14 more so than two random items, so one firearm  
15 manufactured right after the other may show some  
16 similarity marking. So I must establish that the  
17 markings that I'm looking at are in agreement beyond the  
18 best known non-match, even considering those  
19 consecutively manufactured. And then I look for  
20 agreement that is consistent with agreement that I have  
21 seen in my known matches, meaning when I look at the  
22 test-fires and I see agreement between my test-fires, I  
23 look for the same or similar types of agreement, levels  
24 of agreement when I'm looking at the fired evidence  
25 components. If I see enough agreements then I determine

1 that there is enough for me to say identification, that  
2 this cartridge case for this bullet was fired in that  
3 firearm. I can't say that without absolute certainty  
4 because I have not test-fired every single firearm that  
5 there is or ever will be in existence. I say that with  
6 the knowledge that it is -- I consider it practically  
7 impossible that another selected firearm would have  
8 these same unique markings; and so it's to a level of  
9 practical impossibility that I say, not absolute  
10 certainty.

11 Q. Okay. That was a long answer.

12 A. It was a long answer.

13 Q. Which is fine, which is what this is for so the  
14 Judge can understand what it is that you do and some of  
15 the issues that Defense counsel's brought up in the  
16 brief. I'm going to slow you down a little bit though.  
17 Okay? And go back over a little bit on -- you mentioned  
18 class characteristics.

19 A. Yes.

20 Q. And one of the attacks on this science is  
21 subclass characteristics, right?

22 A. Yes.

23 Q. Versus individual characteristics.

24 A. Yes.

25 Q. Explain to the Court again what is a subclass

1 characteristic.

2 A. A subclass characteristic would be a  
3 characteristic that is unique to the tool that made the  
4 firearm but not unique to the firearm itself. So when  
5 we're talking about consecutively manufactured firearms  
6 or firearm parts, consecutively manufactured barrels,  
7 consecutively manufactured slides. The tool may leave  
8 markings that are similar from one firearm to the next.

9 Q. So in essence, based on the principle of a  
10 firearms examination, if that tool has an  
11 imperfection -- I will use that as a lay term -- or some  
12 mark on it, when it makes the breech phase or when it  
13 creates the firing pin, it will impart a certain  
14 toolmark onto that part of the gun.

15 A. Yes.

16 Q. Does that make sense?

17 A. Yes.

18 Q. Okay. And then when a cartridge is fired or a  
19 bullet is fired, that imperfection will be transferred  
20 onto the cartridge or onto the bullet.

21 A. Yes.

22 Q. And that's the comparison that you do.

23 A. Yes.

24 Q. But the concern is that you have these subclass  
25 characteristics that may be transferred from the first

1 gun that's made, the second gun that's made or the third  
2 gun that's made with that same tool.

3 A. That's correct, that is the concern of subclass  
4 characteristics.

5 Q. Okay. And so then that tool was impart, that  
6 same imperfection on all three or ten or a hundred,  
7 however many guns are manufactured with that particular  
8 tool.

9 A. And it may or may not be, it may be something  
10 fleeting, it may be something that only lasts for two  
11 guns or it may be something that lasts for a hundred  
12 guns and we don't necessarily know.

13 Q. Okay. So the Defense attack is that, well  
14 since you can't determine that, then we can't say that  
15 this gun is unique to a particular gun -- but that this  
16 evidence came from a particular gun because it could  
17 have been from ten guns that have that same  
18 imperfection.

19 A. That is a challenge that has been proposed,  
20 yes.

21 Q. Okay. Now, has your area of expertise, your  
22 field and you, specifically, done anything to address  
23 that subclass characteristic issue?

24 A. Yes.

25 Q. What kind of studies have been done in regards

1 to that?

2 A. What firearms examiners have done is obtain  
3 consecutively manufactured parts from various firearm  
4 manufacturers, ten consecutively manufactured Ruger  
5 barrels, ten consecutively manufactured Glock slides.  
6 Whatever the case may be, we go to -- and when I say we,  
7 I mean firearms examiners of communities in general --  
8 will go to a firearm manufacturer and either observe or  
9 receive certified from that manufacturer that these  
10 objects were fired -- or were manufactured, one right  
11 after the other by the same person or by the same  
12 machine using the same tools from the same lot of metal,  
13 all of the same type, and they are then provided to a  
14 laboratory or whoever is doing the research. They will  
15 then create test-fires from that -- those consecutively  
16 manufactured barrels or slides or whatever the case may  
17 be, and either within their own laboratory or they will  
18 send the test out to many laboratories and give many  
19 individuals the option to review those -- and I have  
20 seen several myself from consecutively manufactured --  
21 barrels and slides.

22 When you compare the bullets fired from  
23 ten consecutively manufactured barrels or when you  
24 compare the cartridge cases fired from ten consecutively  
25 manufactured slides, while there may be some



1 overlapping, some characteristics, they're not enough  
2 that they do -- those -- of that agreement, of those  
3 subclass characteristics, do not exceed the agreement  
4 that I see in the best known non-match, meaning I would  
5 not make an identification based on those markings.

6 Q. Okay. You keep using that best known non-match  
7 and that's a mouthful.

8 A. It is a mouthful, yes.

9 Q. Okay. But, in essence what you said, and tell  
10 me if I'm wrong. Okay? You've examined cartridges and  
11 bullets fired from consecutively manufactured parts of a  
12 gun and were still able to distinguish that they were  
13 fired from different parts of a gun.

14 A. Yes.

15 Q. Okay. Because of this microscopic examination.

16 A. Yes.

17 Q. And there are significant differences between  
18 those test-fires that you could determine that they were  
19 fired from different guns.

20 A. Yes.

21 Q. Okay. You used this -- this language about the  
22 best known non-match. What do you mean by that when  
23 you're making a comparison? Is there another way of  
24 phrasing that?

25 A. If I examine cartridge cases or bullets that I

1 know were fired from different firearms, I'm still going  
2 to see some level of agreement. I mean, you're just  
3 going to -- especially if they have similar class  
4 characteristics, if they were both manufactured by the  
5 same manufacturer or a manufacturer using similar  
6 techniques, and the markings are going to look perhaps  
7 similar. And so in my training and then in my  
8 continuing experience I have seen things, I have seen  
9 test-fires, bullets and cartridge cases that I know,  
10 because I did, I know they were fired in two different  
11 firearms. And so there is a level where sometimes you  
12 just can't tell, you can't say identification, you can't  
13 say elimination. There is some level of unknown where  
14 you don't -- that there is some agreement, it's just not  
15 enough to say identification. And so, when I say I'm  
16 looking for agreement beyond the best known non-match,  
17 and in fact, agreement that is consistent with agreement  
18 that I have seen in my known matches. That's what I  
19 mean, I am looking for agreement beyond the agreement  
20 that you may see between two different firearms when  
21 compared to each other, and I'm looking for the  
22 agreement that I know I see within one firearm when I  
23 compare the test-fires.

24 Q. Okay. You mentioned that there are, I guess  
25 other -- three possible results after an examination.

1 A. There's actually four possible.

2 Q. Four. Okay. What are those?

3 A. The possible results are identification where I  
4 say that this was fired in this same firearm to a  
5 practical possibility; elimination, that these two items  
6 were not fired in the same firearm; inclusive, meaning I  
7 can't tell the individual or the class characteristics  
8 are not sufficient enough for me to be able to say, one  
9 way or another if they were or were not fired from the  
10 same firearm or I could say unsuitable.

11 It's highly unlikely for me to say  
12 unsuitable; with a cartridge case, usually there are  
13 some markings, but sometimes bullet fragments just don't  
14 have any individual characteristics or markings on them.  
15 And so unsuitable is another possible conclusion that I  
16 can reach.

17 Q. Okay. So what's the distinction between  
18 unsuitable and inconclusive?

19 A. When I say unsuitable, I mean that there are no  
20 marks left for comparison, I just really can't do  
21 anything with the item.

22 Q. Okay. And you say that's most commonly done  
23 with bullet fragments?

24 A. Bullet fragments, yes.

25 Q. Okay. Let's talk a little bit about what

1 Defense counsel brought up in his opening statement  
2 about this concept called an error rate. Okay? Have  
3 you -- has the AFTE and the literature in which you  
4 relied for your field of expertise address this error  
5 rate issue?

6 A. Yes.

7 Q. And tell the Judge what is an error rate.

8 A. An error rate --

9 Q. In regards to firearms examination.

10 A. An error rate would be, in firearms where I say  
11 an identification but it is in fact not an  
12 identification, or I say elimination when it is in fact  
13 not an elimination.

14 Q. Okay. And of course when you're dealing with  
15 evidence that you found in a crime scene, there's no way  
16 of determining whether or not the firearms examiner is  
17 accurate or not?

18 A. That's correct.

19 Q. I mean, because we're going off what the  
20 firearms examiner says, nobody knows in reality. So is  
21 there some way, some system they've created that helps  
22 try to obtain error rates for purposes of firearms  
23 examinations?

24 A. Well, I think what you're asking about is  
25 proficiency testing?

1 Q. Yes, exactly.

2 A. The goal of proficiency testing is not to  
3 establish an error rate, so I don't want to say yes to  
4 your question but --

5 Q. Okay. Well then explain to the Judge what  
6 proficiency testing is.

7 A. Proficiency testing was designed to provide  
8 individuals and laboratories with samples that would  
9 test the ability of an individual to obtain a correct or  
10 an expected answer but also to test the laboratory's  
11 system in general. The peer review process that we go  
12 through the -- both verification and administrative  
13 technical review, so the proficiency testing does not  
14 only test whether or not a person can get an expected  
15 answer but also that the whole entire lab system is  
16 working that it would catch any errors and the  
17 verification process works.

18 Q. Okay. How are these proficiency tests  
19 conducted?

20 A. The most common external proficiency test  
21 provider is going to be CTS or Collaborative Testing  
22 Services.

23 So most of the time, it's not all the  
24 time, most of the time a laboratory will obtain a  
25 proficiency test sample -- or more than one proficiency

1 test sample perhaps from CTS and that proficiency test  
2 is then issued to an individual examiner.

3 Q. Okay. So basically the organization creates  
4 casings and test-fires and sends them for examination  
5 and that organization knows what the result should be.

6 A. They don't know the results ahead of time, the  
7 expected results are published once all the respondents  
8 have answered.

9 Q. Well, no, I mean, they know whether or not if  
10 the -- which cartridges are fired from which gun and  
11 those kinds of things.

12 A. CTS knows that, yes.

13 Q. Correct, that's what I meant. And then they'll  
14 send them to you as if it's an actual case, and you'll  
15 handle it as if it's actual evidence and send it back  
16 and then they'll determine whether or not that  
17 individual firearms examiner got it right or not.

18 A. Correct. Typically the firearms examiner knows  
19 that they're being tested, we know it's a proficiency  
20 test, so -- but we try to handle it as closely as  
21 possible to case work, as we possibly can, still knowing  
22 that we're being tested.

23 Q. Okay. Now you mentioned that these proficiency  
24 tests don't really give you an error rate. Why is that?

25 A. They're not designed to give you an error rate,

1 and the reason is CTS will sell their tests to anybody.  
2 So, while laboratories participate in the proficiency  
3 testing program, nothing stops a lawyer or a student or  
4 my parents from buying a proficiency test and submitting  
5 answers. And CTS has no control over how that  
6 proficiency test is handled, they have no control over  
7 whether or not somebody actually examines it, they have  
8 no control over whether or not a laboratory or  
9 individuals may collaborate and come up with one answer.  
10 And their goal is to try to create test samples that are  
11 consistent across all of the samples. They want  
12 everybody that's getting those samples to get very  
13 similar samples so they don't necessarily try to mimic  
14 what we would see in case work.

15 Q. Okay. So the three shell casings that she may  
16 examine for those tests are different than what somebody  
17 does in Florida?

18 A. They are separate, they are not the same --

19 Q. The same.

20 A. -- casings. But the goal of CTS is to try to  
21 make the casings as close as possible.

22 Q. Okay. And so in essence, does a firearm  
23 examiners -- are there error rates involved associated  
24 with your kind of work?

25 A. Yes, there are limitations to using the CTS

1 proficiency tests as a basis for error rates. But like  
2 the prosecutor pointed out, because in the real world,  
3 we don't have the right answer, we don't know the right  
4 answer, so it is the best basis for error rates that we  
5 have.

6 Q. Okay. It's the best way of measuring?

7 A. It's the best way that we have been able to  
8 measure, yes.

9 Q. Okay. And have you had an opportunity to read  
10 or examine some of the results of those proficiency  
11 tests?

12 A. Yes.

13 Q. Okay. And what is generally the error rate  
14 that's assigned to firearms examiners in regards to the  
15 error rate?

16 A. When you take into consideration more recent  
17 proficiency tests. So there's a published study that  
18 looked at the results of a proficiency test from 1978  
19 through 1991 and that provided an overall error rate of  
20 1.4 percent per firearms, that includes mis-elimination,  
21 an error rate of elimination; for false identifications  
22 only, it's .6 percent.

23 Q. Okay. Let's slow down and make sure that we  
24 understand. You said, what was the 1.4 error rate?

25 A. 1.4 percent is the error rate that includes



1 both mis-identifications and mis-eliminations.

2 Q. Okay. And so, getting them wrong?

3 A. Right.

4 Q. Okay. And then the -- what was the other one  
5 that you said?

6 A. When you're just talking about  
7 mis-identifications and you filter out the  
8 mis-eliminations, it's .6 percent.

9 Q. Okay.

10 A. When you take into account -- that was from  
11 1978 through 1991. And when you look at more recent CTS  
12 proficiency testing data that takes into account that  
13 more and more laboratories are going to a proficiency  
14 testing program that is required by an accrediting body  
15 where we have to have the peer review. There was no  
16 necessarily peer review in those old -- in those old  
17 numbers. So now that we must go through peer review, we  
18 do try to treat those proficiency tests as case work.  
19 The numbers from 1998 through 2002, the error rate is  
20 one percent for mis-identifications, and that percentage  
21 is not including inconclusive, none of the -- none of  
22 the numbers are inconclusive.

23 Q. Okay.

24 A. So, you know, I'm comfortable sticking with the  
25 old number of 1.4 percent because that's higher.

1 Q. Okay.

2 A. But one percent, less than two percent.

3 Q. And all those, that one percent, that  
4 1.4 percent, that does not include when an examiner may  
5 say it's inconclusive, I can't decide.

6 A. That does not include inconclusive.

7 Q. Okay. Which sort of skews or changes the way,  
8 because you have a hundred cartridges to look at, and  
9 twenty-five, and your rate is based on a hundred  
10 examinations and twenty-five of them are inclusive that  
11 sort of changes the percentages considerably.

12 A. It would make the error rate much higher,  
13 because it would -- if we included inconclusive, yes,  
14 but inconclusive is not considered an unacceptable  
15 answer.

16 Q. Right, because even though we know it was --  
17 the cartridge was -- either was or was not fired, there  
18 may not be sufficient markings for an examiner to make a  
19 determination.

20 A. That is absolutely correct.

21 Q. Okay. Now you've been working in this field  
22 for how long now?

23 A. I've been in the firearms section either doing  
24 technical work or observation work for nine and a half  
25 years; and I've been a fully qualified firearms examiner

1 for seven years.

2 Q. And you mentioned you've testified  
3 approximately twenty-five times.

4 A. Give or take.

5 Q. I suspect you've looked at more than  
6 twenty-five different cases.

7 A. Yes.

8 Q. Approximately -- and I know that you may not  
9 have an accurate representation -- how many examinations  
10 and comparisons have you done?

11 A. Examinations and comparisons, it would have to  
12 be in the thousands, if not tens of thousands, when  
13 you're talking about on the scope, two different items,  
14 looking at the comparisons.

15 Q. And you think over that time period that you've  
16 gotten better as time has gone on?

17 A. Absolutely.

18 Q. You develop a sense of comparing marks and  
19 seeing things in the past and discussing it with other  
20 people in the field and gotten better at it?

21 A. Yes.

22 Q. Okay. Because one of the knocks on this is  
23 that the Defense has brought up is subjective.

24 A. It is subjective.

25 Q. There's no machine that we can stick these

1 cartridges in and just say, okay, it's a match.

2 A. No.

3 Q. Okay. Now -- now that I mentioned that, there  
4 are some machines that are helpful in this type of  
5 investigation, I guess, for lack of a better term; what  
6 is the NIBIN or IBIS machine?

7 A. NIBIN or IBIS. NIBIN is the National  
8 Integrated Ballistics Information Network -- I can never  
9 remember the acronym and IBIS is the Integrated  
10 Ballistics Imaging System. IBIS doesn't exist anymore,  
11 IBIS was the instruments, now there are -- there's brass  
12 tracks and bullet tracks, but they all are still  
13 operated under the database which is NIBIN. And that is  
14 run by the Association -- I'm sorry, no, the Alcohol,  
15 Tobacco and Firearms -- the Bureau of Alcohol, Tobacco  
16 and Firearms, but they have a contract with FPI,  
17 Forensic Pathologies, Incorporated, which has recently  
18 been bought out by somebody, I don't remember who. But  
19 NIBIN, IBIS, bullet tracks, brass tracks, is a way for  
20 us as firearms examiners to take images of fired  
21 components, fired shot shells, fired cartridge cases and  
22 fired bullets for bullet tracks or an AFIS system to  
23 bullets and compare -- the computer has an algorithm  
24 that compares the markings that are in -- that are  
25 photographed, and the computer tries to come up with

1 other potential matches to that cartridge case or to  
2 that bullet that have been entered into the database.

3 Q. Okay. Are you familiar with the AFIS System  
4 regarding fingerprints?

5 A. I mean I know it's very similar, the AFIS and  
6 CODIS is similar to it as well.

7 Q. So from a practical standpoint, an examiner  
8 examines a cartridge or a gun or a piece of evidence,  
9 they can take an image of that evidence and enter it  
10 into the database.

11 A. Yes.

12 Q. And this database will compare other images to  
13 the image that -- let's say, for instance, that you put  
14 in there and see if there's some other similar images  
15 that have been input by another examiner.

16 A. Or by me, any examiner.

17 Q. Or by you, I'm sorry, yeah, or any examiner.

18 A. Yes.

19 Q. Just as maybe in an investigative lead, to sort  
20 of tell you, hey, here's a gun, it's similar, you might  
21 want to take a look at it or here's a bullet that was  
22 found in a different location that you might want to  
23 take a look at that.

24 A. Correct. The computer -- honestly it's just  
25 dumb. And it's -- it's based on programming and it's

1 not based on an actual visual inspection of the image.  
2 What the algorithm -- the way it's been explained to  
3 me -- is that the computer actually -- it's a gray scale  
4 and it assigns a value to each pixel in the image based  
5 on how light or how dark it is between zero and one.  
6 And then the computer takes the overall values, somehow  
7 of the pixels and the image, and compares them to all  
8 those values of all the other appropriate images of  
9 cartridge casings and bullet images in the system and it  
10 comes back with a list of potential matches.

11 Now, our hit rate is somewhere maybe  
12 around one percent, which means that most of the images  
13 that come back as potential hits by the computer are not  
14 in fact similar. In fact, if -- there could be  
15 differences in class characteristics between the two  
16 images, the computer doesn't know any better.

17 Q. So, it doesn't sound like a very variable tool  
18 if only one percent of the ones that send you is  
19 actually the right one.

20 A. What we do, once we see that there may be a  
21 potential match on the computer, we actually take the  
22 evidence and physically compare it, and yes, it is a  
23 very low hit rate. But if -- if we can provide  
24 investigators with the lead that they didn't know  
25 before, then it's helpful, it's still a helpful tool.

1 Q. And are you aware of any machines that does  
2 what you do?

3 A. No. I know that there's some people that are  
4 trying to develop it, but as far as I know nobody is  
5 using it and it has not been validated for case work.

6 Q. Okay. And so in essence, this field of  
7 expertise is relied on in subjectivity of its individual  
8 examiners for the last eighty years?

9 A. Yes.

10 Q. Now one other thing I want to talk to you about  
11 is you mentioned that you're aware of studies, and I  
12 think you may even have mentioned it in one of your  
13 answers previously. In regards to the -- the studies in  
14 which examiners have fired a large number of rounds or  
15 cartridges from a particular weapon and they compared  
16 those hundreds or thousands of projectiles or casings,  
17 are you familiar with studies that work that way?

18 A. Yes. You're talking about persistence of  
19 marks.

20 Q. Correct.

21 A. Yes.

22 Q. Explain to the Judge what the goal of those  
23 studies are.

24 A. Well we want to see when we fire a hundred  
25 rounds through a barrel of a firearm or looking at --

1 you know, a hundred rounds that are fired by the  
2 firearms are the slide markings or ten thousand rounds  
3 or fifty thousand rounds, are the individual markings  
4 that are left by the firearms, on the bullets or on the  
5 cartridge cases going to change or stay the same. And  
6 if they change, are they going to change to the extent  
7 that we can still make identifications, or are we going  
8 to not be able to identify those markings back to -- you  
9 know, one of the first initial bullets that were fired  
10 in that firearm.

11 Q. Okay. And what are the results of those  
12 studies been?

13 A. Most of the results of those studies show that  
14 we can, even after ten thousand rounds, identify those  
15 late rounds back to early rounds.

16 Q. Okay. So there's a comparison that's done and  
17 it's of identification?

18 A. Yes.

19 Q. From the first one and the hundredth one?

20 A. Yes.

21 Q. Okay. And I'm sure the studies vary but that's  
22 generally, the consensus say that's a legitimate  
23 experiment and it's resulted in positive  
24 identifications.

25 A. Yes, it shows that the marks are persistent and



1 can be identified.

2 Q. Now there are other changes between one hundred  
3 and one?

4 A. There may be changes between one hundred --  
5 well usually there's a change after one. The first shot  
6 fired through the barrel typically is going to change  
7 the marks. But say beyond one, number two, and  
8 sometimes there's not changes after the first one, but  
9 there might be changes from one to one hundred or there  
10 might not be changes from one to one hundred. And that  
11 kind of goes into the method used to manufacturer the  
12 firearm, the quality of the metal that the firearm is  
13 made of and what type of bullet. Is it a steel coated  
14 bullet versus very soft lead or copper that has been  
15 fired through the firearm.

16 Q. Okay. The way that you perform your  
17 examination, is that prescribed or recommended by AFTE?

18 A. Yes.

19 Q. And is that the way that the other firearms  
20 examiners, throughout the state conduct their  
21 examinations?

22 A. Yes.

23 Q. Okay. How many firearms labs are there in  
24 Texas, do you know?

25 A. I don't know.

1 Q. Do you know that there are other ones?

2 A. Yes.

3 Q. Okay. What are the ones that you do know of?

4 A. I know that the Texas Department of Public  
5 Safety operates several branches of firearms labs  
6 including there is one in Houston, I know there's one  
7 Austin, I know there's one in McAllen. There's several  
8 other sites.

9 The Harris County Institute of Forensic  
10 Sciences operates a firearms section, Austin Police  
11 Department has one, I know Dallas has at least one,  
12 Bexar County.

13 Q. So many?

14 A. Many.

15 Q. What about national organizations like the FBI  
16 and the CIA? Do you know whether or not they have any?

17 A. I'm pretty sure that the FBI has one, I know  
18 the ATF has one. I think -- I don't know who does their  
19 work -- I think -- maybe NCIS operates one but they may  
20 have their work done by someone else.

21 Q. Okay. So it's pretty well accepted throughout  
22 the country?

23 A. Yes.

24 Q. And internationally, as you mentioned earlier.

25 A. Yes. One of my former colleague works in a lab

1 in Saudi Arabia, I think.

2 Q. Okay. Okay.

3 MR. HANNA: Your Honor, I'll pass the  
4 witness.

5 THE COURT: All right. Mr. Doggett.

6 **CROSS-EXAMINATION**

7 Q (By Mr. Doggett) Ms. Eudaley, I'm Stephen  
8 Doggett. I'm one of the lawyers for Cornelius Harper.  
9 Your degree from Texas A&M in Wildlife and Fishery  
10 Sciences, that has nothing to do with firearms/toolmark  
11 analysis, correct?

12 A. Other than the fact that it gives me a  
13 background in science, which is what is required for the  
14 job, yes.

15 Q. But they didn't teach you anything about  
16 firearms/toolmark analysis at A&M, right?

17 A. No.

18 Q. Okay. And then after you graduated from A&M,  
19 you took some courses to become a secondary school  
20 teacher, correct?

21 A. I did, that's true.

22 Q. And you actually became a science teacher at  
23 Katy High School for what, a couple of years?

24 A. Uh, not even a full year, teaching was not  
25 really for me.

1 Q. Teaching was not for you?

2 A. Not for me.

3 Q. Well, it must not have been a total bust  
4 because then you went on to teach the younger ones, the  
5 sixth and seventh graders at a private school, a private  
6 Catholic school, correct?

7 A. Yes.

8 Q. And you were there from February to May of  
9 2002?

10 A. Yes.

11 Q. Okay. And after that, was that when you went  
12 to work for the Houston Crime Lab?

13 A. Yes.

14 Q. And your first few years at the crime lab had  
15 really nothing to do with firearms analysis, you were  
16 working, I guess, in like the evidence room or the --

17 A. That's correct, for two and a half years.

18 Q. Receiving stuff and logging it in, and all that  
19 sort of thing.

20 A. Yes.

21 Q. Who was your teacher at the Houston Crime Lab  
22 that taught you about firearms/toolmark analysis?

23 A. My main trainer was -- he's now my supervisor,  
24 Darrell Stein. I also receive training from Kim Downs,  
25 Mike Al-Mohamed -- Mohamed Al-Mohamed, is his name, and

1 Michael Lyons.

2 Q. Are they all still there?

3 A. Darrell Stein and Kim Downs are. Mike Lyons  
4 and Mr. Al-Mohamed have both retired.

5 Q. All right. You talked a little bit early on in  
6 your testimony about the fact that you now work for the  
7 Houston Forensic Science Center, correct?

8 A. Yes.

9 Q. And that started in April of 2014, correct?

10 A. Yes.

11 Q. And how is that different from working from the  
12 Houston Police Department?

13 A. When I worked for the Houston Police  
14 Department, I was a Houston Police Department employee,  
15 I was a civilian employee with the police department.  
16 Now I am not an employee of the Houston Police  
17 Department, I am a City of Houston employee and I'm  
18 managed by the management of the Houston Forensic  
19 Science Center.

20 Q. All right. Why the change?

21 A. We -- it was actually the NAS report where they  
22 suggested that crime laboratories should not be  
23 affiliated with law enforcement or prosecution offices,  
24 that we should be independent and of course, as an  
25 examiner, I am a dependent. But the appearance and the

1 management scheme should be such that we are independent  
2 from law enforcement influence. And so that is why the  
3 change began right away, but it was a process to  
4 actually implement the change in management from the  
5 Houston Police Department over to the Houston Forensic  
6 Science Center.

7 Q. Now you mentioned the NAS report, what is NAS?

8 A. National Academy of Sciences.

9 Q. Do you recognize that as scientific for the  
10 authoritative body in your field?

11 A. I think that they have good input on what crime  
12 laboratories and forensics, in general should, for good  
13 practices.

14 Q. You know that NAS consist of many of the  
15 leading scientists in the United States?

16 A. Yes, they're not an authoritative body. You  
17 asked about do I recognize it as a scientific --

18 Q. It's not an authoritative body?

19 A. Not authoritative, no.

20 Q. Not as far as you know.

21 A. No, not to my knowledge.

22 Q. Okay. But apparently they're authoritative  
23 enough to cause you guys to change your organizational  
24 structure and who runs -- who has ultimate authority  
25 over your laboratories?

1           A.    They -- like I said, they made excellent  
2    recommendations for that -- for that but they didn't  
3    have the authority to demand that we become independent.  
4    That's what I mean by they're not authoritative.

5           Q.    Did you know that the -- well, the reason it  
6    changed, wasn't it, it's -- the problem started long  
7    before the NAS report came out, didn't it?

8           A.    What do you mean the problem?

9           Q.    There were many problems at the HPD Crime Lab,  
10   correct?

11          A.    There were issues that --

12          Q.    Big issues, right?

13          A.    -- they came up in the news media, they were  
14   mostly involved in the DNA section.

15          Q.    All right. But there were some really big  
16   serious issues that caused the lab to get a lot of bad  
17   publicity, correct?

18          A.    Yes.

19          Q.    Okay. And that's been going -- that went on  
20   for ten years.

21          A.    I don't know how long it went on. I know it --  
22   that the problems came to light shortly after I began my  
23   employment there.

24          Q.    Okay. Well anyway, ultimately they did change  
25   over to the -- they changed the name from the HPD Crime

1 Lab to the Houston Forensic Science Center, correct?

2 A. Yes. And before that we obtained accreditation  
3 for the laboratory in 2005.

4 Q. You're actually still in the same laboratory  
5 you were always in, right?

6 A. It's a slow process, so yes, the facilities are  
7 still the same.

8 Q. 1200 Travis, 20th floor, Houston Texas, 77002,  
9 correct?

10 A. The Crime Lab is on the 24th, 25th and 26th  
11 floors, not the 20th.

12 Q. The same place so that really hadn't changed?

13 A. That has not changed.

14 Q. And really, most of the employees are the same,  
15 aren't they?

16 A. Most of the employees are the same, yes.

17 Q. When they made a switch over, they just said,  
18 okay, take off your HPD hat and now you're going to put  
19 on your Houston Forensic Science Center hat, right?

20 A. Yes.

21 Q. So, probably somewhere between ninety and a  
22 hundred percent of the employees are Ex-HPD employees,  
23 right?

24 A. Yes.

25 Q. The same criminalists, the same -- what about



1 management, same -- same lab managers?

2 A. Yes. There have been some additional  
3 management people that some came from the outside and  
4 some from other divisions that were apart of the crime  
5 laboratory before that are now management within the  
6 management system.

7 Q. Okay. Now, you have what we call standard  
8 operating procedures at the Firearm Section of the lab,  
9 correct?

10 A. Yes.

11 Q. And I've looked at those, and I don't see  
12 anything in there about how you determine whether or not  
13 there's a match.

14 A. The SOP's wouldn't necessarily have the AFTE  
15 theory of identification and the range of conclusions.  
16 That's part of the training manual, it's part of the  
17 training and it would be included in the training  
18 manual.

19 Q. So the lab does not have any standard operating  
20 procedures on what the criteria is for a criminalist  
21 to -- am I using the right term? A criminalist to  
22 examine a firearm and determine whether or not something  
23 was fired from that firearm.

24 A. Again those standards are in the training  
25 manual, they are part of the training, and any

1 criminalist can find it -- can find reference to that in  
2 the training manual.

3 Q. But it's not --

4 A. It's not part of the SOP's, it's part of the  
5 training manual which is part of the management. It's  
6 one of the controlled documents that we have in the  
7 laboratory is the training manual.

8 Q. Who wrote the SOP's?

9 A. My supervisor wrote most of them with input  
10 from all of the individuals in the laboratory.

11 Q. Anyway, you guys are supposed to follow your  
12 SOP's, correct?

13 A. Yes.

14 Q. And it's important that you follow your SOP's  
15 because that's part of how you maintain your  
16 accreditation; is that correct?

17 A. Yes.

18 Q. And how often are y'all checked out to see  
19 whether or not you're complying with your SOP's?

20 A. There is an internal audit conducted by the  
21 laboratory itself every year. And that audit is  
22 conducted -- not by members of our section but by  
23 members who have been trained to conduct internal audits  
24 and they're typically from other sections of the  
25 laboratory, so they don't know what we do, so they're --

1 we try to have them be as impartial as possible. And  
2 then once every -- currently it's every five years is  
3 the accreditation cycle where we have an external or we  
4 have to have an external assessment by the accrediting  
5 body. Our laboratory has tried to do more than what is  
6 the bare minimum and so we have had -- we have been  
7 accredited since 2005 but we have had more than two or  
8 three outside assessments. We -- for awhile, we were  
9 doing one assessment -- outside assessment every year in  
10 addition to our internal assessment.

11 Q. When's the last time an outside assessment was  
12 done?

13 A. I believe it was 2010 or 2011. We have also  
14 had some consultants, and we're planning on applying for  
15 accreditation under the ISO/IEC 17025 accreditation  
16 standards rather than the legacy standard for ASCLAD  
17 Lab, which is what we're accredited under now. So we've  
18 had some outside input getting prepared for the ISO/IEC  
19 17025, but it has not a formal assessment.

20 Q. All right. So you were there the last time an  
21 outside assessment was done?

22 A. Yes.

23 Q. And what did they do regarding assessing a  
24 firearms lab as to whether or not y'all were -- what are  
25 they looking at when they do an audit?

1           A.     When they do an audit -- and I am actually a  
2 qualified assessor through ASCLAD Lab. So not only do I  
3 know what they're looking for, because I have been  
4 through one but I have done an assessment myself at  
5 another laboratory.

6                     You look and read the quality manual and  
7 the standard operating procedures to make sure that not  
8 only are the people who are doing the work following  
9 those procedures that are laid out, but those procedures  
10 are in line with the accreditation requirements as well  
11 as what is generally accepted in the field. They do  
12 case review, so when you have an outside assessment you  
13 actually do have firearms examiners, people who know the  
14 field come in, it's not impartial people who are DNA  
15 analysts, so an outside assessment is conducted by  
16 firearms examiners. And they look through our case  
17 files and make sure that we document what we're doing,  
18 that we follow our own procedures, that we meet  
19 accreditation requirements, that we follow our SOP's.  
20 They make sure that not only are we doing those things  
21 but that we know what we're doing. We can answer  
22 questions, that we're handling evidence appropriately, I  
23 mean it's a very large, broad spectrum assessment.

24           Q.     Okay. Well I read -- what I read in the SOP's  
25 from 2010 and 2014, things like make sure the gun is not

1 loaded and stuff like that.

2 A. Safety is part of it, that is of course not all  
3 that's in the SOP --

4 Q. Right.

5 A. -- manual. But certainly, yes, making sure  
6 that the gun is not loaded is part of it.

7 Q. And when you write a report, make sure you put  
8 the make and the caliber of the weapon in it, what day  
9 you looked at it and stuff like that, I mean, it was  
10 very detailed SOP's about how to write your reports.

11 A. Yes.

12 Q. So that's the kind of thing auditors are  
13 looking for, they take your SOP and -- your SOP  
14 procedures for how you write a report, and they select  
15 some reports and they compare them and they say, yes,  
16 they were writing the reports in accordance with the  
17 SOP's.

18 A. That's part of it, yes.

19 Q. Okay. And you said you're a member of AFTE,  
20 correct?

21 A. Yes.

22 Q. How long have you been a member of AFTE?

23 A. I don't know. I'm a regular member so I know  
24 I've been a -- you're a provisional member for three --  
25 three years, and then you have to become a regular

1 member and I believe I've been a regular member for a  
2 year or more, so at least four years, maybe longer. I  
3 don't remember, I don't remember when I applied.

4 Q. And do you have to have any sort of college  
5 degree to become a member of AFTE?

6 A. Not to become a member of AFTE, no.

7 Q. Are there educational requirements at all to  
8 become a member of AFTE?

9 A. To become a member of AFTE, you must be working  
10 in the field of firearms and toolmark examination.

11 Q. But you might not even have a high school  
12 diploma, and if you're working in a field of firearms  
13 identification, you could become a member of AFTE.

14 A. If that -- if the laboratory hired somebody or  
15 had somebody employed that doesn't have a high school  
16 degree but they are conducting firearms and toolmark  
17 examinations, then yes, they can become a member of  
18 AFTE.

19 Q. And AFTE is -- it's really just a trade  
20 association, isn't it?

21 A. No.

22 Q. It's not?

23 A. No.

24 Q. Isn't there a judicial decision where a Judge  
25 held that AFTE is just a trade association, not a

1 scientific organization?

2 A. Not to my knowledge, no. In fact, I believe  
3 that there were judicial decisions saying it's not trade  
4 organizations.

5 Q. Do you have that decision?

6 A. I don't.

7 Q. Okay. But it's -- whatever type of  
8 organization it is, as long as you're working in the  
9 firearms/toolmark identification, there's no real  
10 educational requirements?

11 A. Not to my knowledge. I never really paid  
12 attention to that part because I have a college diploma.

13 Q. And I think you already said you're not a  
14 member of any other organizations?

15 A. I am not, no.

16 Q. Are there any other scientific organizations  
17 that deal with the subject of firearms/toolmark  
18 identification?

19 A. Not exclusively, but there are other scientific  
20 organizations that do cover those topics in their  
21 publications and in their conferences.

22 Q. Can you give us some examples of some of those?

23 A. Journal of Forensic Sciences, SWAFS or the  
24 Southwest Association of Forensic Sciences, I know -- I  
25 have been to a conference where they had a firearms

1 discussion, there are some others.

2 Q. What about the American Academy of Forensic  
3 Sciences, do they --

4 A. I believe that the Journal of Forensic Sciences  
5 is the publication from the American Academy of Forensic  
6 Sciences, so yes.

7 Q. Now, your tours of your firearms places, did  
8 you actually go to the factories?

9 A. Yes.

10 Q. Okay. And were there some non-forensic  
11 scientists -- non-firearms, toolmark people there on  
12 those tours?

13 A. For some of them there were because I was  
14 attending Armorer's courses, so there were police  
15 officers who are -- just as part of their job are  
16 Armorer's where they wanted to learn more about the  
17 guns.

18 Q. Anybody non-law enforcement?

19 A. No, typically the Armorer's courses that I've  
20 been to have all been offered to law enforcement or to  
21 law enforcement affiliated like firearms examiners.

22 Q. And how long did those tours last?

23 A. Half a day, several hours to half a day. I  
24 think Beretta was -- yeah, half a day.

25 Q. So is it like walking through the Blue Bell



1 Ice-Cream deal and they say, here's where we mix this  
2 and here's where do this there and there's the machine  
3 that does this and they show you the process and tell  
4 you -- and answer questions about what they do?

5 A. Yes.

6 Q. Okay. And one of the things they -- what did  
7 they tell you about the tools they use to manufacturer  
8 the firearms?

9 A. They told us a lot about the tools, so I don't  
10 know.

11 Q. You can't remember or --

12 A. No, I can remember it. Just it's a wide range  
13 of things that they tell us about the tools.

14 Q. What did they tell you about what the materials  
15 are that they're made out of?

16 A. Typically they're very hard steel. Some are  
17 actually -- Smith & Wesson uses a diamond encrusted  
18 lasers.

19 Q. Okay. Why are they made that way?

20 A. They're very hard so that they are able to cut  
21 the very hard steel of the firearms that they're trying  
22 to produce.

23 Q. And are they designed to last a long time?

24 A. They're designed so that -- yes, they can last  
25 a long time.

1 Q. And they're supposed to -- the goal is to try  
2 to -- whatever you're trying to make, you make it the  
3 same in every gun you -- that comes off the line, right?

4 A. Their concern is to make firearms or firearm  
5 parts that meet specific tolerances as far as size,  
6 shape, smoothness, whatever, they're not concerned with  
7 making sure that the marks are the same.

8 Q. Right. But they are trying to make, more or  
9 less identical firearms there that make it -- can take  
10 out and sell at stores and they're going to work the way  
11 they're supposed to work, right?

12 A. I don't necessarily know that their goal is to  
13 make identical firearms. Their goal is to make firearms  
14 that they can take the -- the parts that are made over  
15 here and those parts they make over here will fit on  
16 this gun or this frame that they make over here. They  
17 want all the parts to be within specified tolerances,  
18 they want the holes to be the same size so that they  
19 fire the gun efficiently. They want the rifling to be  
20 to the right size so that the bullet has the most gas  
21 behind it so that when it passes down the barrel it  
22 obtains a desired velocity.

23 Q. And they monitor -- the stuff that comes off  
24 their manufacturing assembly line -- they monitor the  
25 guns to make sure that they're being manufactured within

1 the tolerances that they want, correct?

2 A. Yes.

3 Q. And what happens when something comes -- gets  
4 out of tolerance, what do they do?

5 A. I don't know for sure, it probably depends on  
6 what is out of tolerance and why. I'm sure that they  
7 would investigate the machine or the tool that is being  
8 used to produce that particular part and then try to fix  
9 that machine or that tool so that the parts would be  
10 back within tolerance again.

11 Q. Do they give you any specific information about  
12 how long the tools they use to make firing pins last?

13 A. It -- every time we ask that question, the  
14 answer is, it just varies. Sometimes the tool can make  
15 a thousand parts or ten thousand parts, sometimes the  
16 tools need to be sharpened in between there to get back  
17 to making things within tolerance. But sometimes the  
18 tools break right away and they can't use them for  
19 making more than a few guns.

20 Q. So if I went on one of these factory tours or  
21 went on five or six of them, I couldn't say that I  
22 was -- just because I became more knowledgeable about  
23 how they make guns, I couldn't call myself a firearms,  
24 toolmark examiner, could I?

25 A. No.

1 Q. I couldn't call myself an expert in  
2 firearms/toolmark identification, could I?

3 A. No.

4 Q. I notice you've become a criminalist specialist  
5 and it looks like now you have some -- you're not just  
6 looking at guns, you're supervising some other people?

7 A. I have some supervisory responsibility, yes.

8 Q. You supervise two criminalists; is that  
9 correct?

10 A. Two criminalists and an evidence technician.

11 Q. Okay. Did you -- you participated in the  
12 examinations that are a subject of this case, correct?

13 A. Yes.

14 Q. Did you do the original examination?

15 A. Not for most of it.

16 Q. Who did the original examination?

17 A. Criminalist Joseph Colca.

18 Q. Okay. Is Criminalist Colca still employed at  
19 the Houston Forensic Science Center?

20 A. No.

21 Q. Okay. When did he leave?

22 MR. HANNA: Your Honor, I'm going to  
23 object, Mr. Colca's here for that testimony if he  
24 requires it. This is outside the purview of her  
25 expertise why somebody else isn't still employed.

1 THE COURT: Sustained.

2 Q (By Mr. Doggett) So he did the original  
3 examination, correct?

4 A. Yes.

5 Q. And did you check his work?

6 A. I verified his results or if it wasn't subject  
7 for -- to verification, I typically reviewed his  
8 original results, yes.

9 Q. Say that part again about --

10 A. I verified his conclusions or if the  
11 conclusions weren't suitable for verification, for  
12 example, his work on test-firing firearms. That's not  
13 subject to verification, I can't verify test-firing, so  
14 I technically reviewed that work.

15 Q. Why can't you verify the test-firing?

16 A. He test-fired the firearm, he examined the  
17 firearm and made observations about the firearm, and  
18 that's just not really something that can be verified,  
19 his observations. I have since examined the firearm and  
20 verified those results, but his initial examination of  
21 the firearm was not verified, it was technically  
22 reviewed.

23 Q. All right. What is the standard operating  
24 procedure in the lab -- or what was it, back in 2010  
25 when Mr. Colca did his examination concerning the

1 handling of the gun when it first comes into the lab?

2 A. We -- the safety is always the first priority  
3 when it comes to firearms examiners. So I believe that  
4 this firearm was received in a biohazardous condition  
5 which means it had blood or possible body fluids on it.  
6 And so I believe that this firearm was decontaminated  
7 prior to any sort of examination, let me confirm that.  
8 Yes, Mr. Colca decontaminated it. And again that  
9 wouldn't be what we would normally do, normally we would  
10 not disassemble a firearm before we test-fired it  
11 because we do not want to handle and test-fire a firearm  
12 that is contaminated in body fluids, that's our first  
13 priority is safety. So the SOP was to safety first, to  
14 contaminate the firearm and then examine it.

15 Q. Why you not normally disassemble a firearm?

16 A. Disassembling a firearm could potentially -- we  
17 may not notice that a part was put together incorrectly,  
18 and when we put it back together, we may put it back  
19 together correctly, so we may not have noticed that the  
20 firearm could have been in an inoperable condition when  
21 we received it. You also may lose the opportunity to  
22 examine the bore of the firearm which is something that  
23 we do. Of course, if the bore is occluded with blood  
24 then we can't look for -- we typically look for gun  
25 powder residue in the bore just to see if the firearm

1 has been cleaned since it has fired. And so sometimes  
2 you may lose that opportunity if you clean it before you  
3 test-fire it or examine it.

4 Q. When you disassemble a gun like that, you're  
5 altering it from what its condition was from when it was  
6 brought in, correct?

7 A. You're altering the physical condition of the  
8 firearm, you don't alter the marks that the firearm may  
9 leave behind, or you're not even really altering the  
10 physical condition of the firearm, you're just altering  
11 the way that the parts were put together.

12 Q. And why wouldn't you just take them apart and  
13 clean them and oil them, all of them instead of -- why  
14 wouldn't you do that in all cases?

15 A. Well first of all, we don't have the time to  
16 disassemble and reassemble and clean and oil every  
17 single firearm that we receive. So if the firearm is  
18 received in an operable condition, there's no need for  
19 us to disassemble and clean it and oil it.

20 Q. Do you know where the contamination was that --  
21 the bio-contamination was on this weapon that caused him  
22 to clean it?

23 A. No.

24 Q. No?

25 A. No.

1 Q. Shouldn't that be documented under your SOP's  
2 in your report?

3 A. I don't believe that the SOP's specifically  
4 note that we should say where or how the firearm is  
5 contaminated, just that it was received in a  
6 biohazardous condition.

7 Q. Well I mean, this has something to do with the  
8 integrity of what you're looking at. Normally you  
9 wouldn't alter evidence, if you had evidence that you  
10 wanted to look at, you wouldn't change it, right? You  
11 want to keep it in the condition, if possible that you  
12 got it in, correct?

13 A. If possible.

14 Q. All right. And if you don't document it in  
15 your report whether it was completely encrusted in blood  
16 and guts or whether it had one drop of blood on the tip  
17 of the barrel, I mean, shouldn't that make a difference,  
18 shouldn't that be documented in your records?

19 A. If -- we have the flexibility in how we  
20 decontaminate an item, and so if there had just been one  
21 drop of blood, Mr. Colca would not have disassembled the  
22 firearm and decontaminated it. He would have wiped that  
23 drop of blood off and he would have noted that he wiped  
24 it rather than he decontaminated it. His notes actually  
25 say that both the firearm and the magazine were



1 contaminated, and it's unusual for a magazine to be  
2 contaminated with biohazard, so I would expect that the  
3 gun was very bloody.

4 Q. So how did he decontaminate it?

5 A. He washed it in a solution that is ten percent  
6 bleach. He then --

7 Q. Is that what it says in the report?

8 A. In the report, no, I don't believe that the  
9 report specifically states. Our SOP's state that he  
10 would wash it in this ten percent bleach solution.

11 Q. But you don't know what he did because it's not  
12 documented?

13 A. Item fifteen is disassembled, decontaminated,  
14 rinsed, dried, oiled and reassembled. That's what --  
15 that's what the document states.

16 Q. All right. Anyway, after he examined it and  
17 formed some conclusions about whether or not other items  
18 that were brought in were fired in that particular gun?

19 A. Yes, he test-fired the firearm and then made  
20 some comparisons between unknown samples that were  
21 submitted.

22 Q. And he had trouble making the gun work, didn't  
23 he?

24 A. I wouldn't say that he had trouble making the  
25 gun work. The magazine that was submitted with the

1 firearm was broken and so he hand loaded the firearm.  
2 One -- the firearm failed to eject, the first and third  
3 cartridge cases, which means that in the cycling -- this  
4 is a semi-automatic firearm, so in the cycling of the  
5 firearm, it should have extracted the cartridge case  
6 from the chamber and then ejected it clear of the  
7 firearm. And in this case, the first and third  
8 cartridge cases did not eject properly, they extracted  
9 but then they got caught in the action so that they  
10 didn't eject from the firearm.

11 Q. Did he put a different magazine in the gun to  
12 fire it?

13 A. He did not, he hand loaded the firearm to fire  
14 it.

15 Q. He -- when he disassembled it, he noticed that  
16 apparently the magazine was broken so he made the  
17 decision to take one bullet at a time and put it into  
18 the chamber of a gun and shoot it and he did that three  
19 times, correct?

20 A. Yes.

21 Q. And two of the three times the bullet wouldn't  
22 even eject from the gun, correct?

23 A. The cartridge case did not --

24 Q. The case wouldn't eject from the gun.

25 A. -- did not eject from the gun. It was

1 extracted from the gun and it did not eject.

2 Q. All right. And when did you -- he did that on  
3 a particular day. When did you go back and recheck his  
4 work?

5 A. When did I check his work?

6 Q. Right. I mean, it is part of the standard  
7 operating procedure that whenever a criminalist examines  
8 a gun, a second person is supposed to go back and check  
9 the work, correct?

10 A. Yes, we have two ways that we check work. We  
11 verify conclusions, identifications and eliminations on  
12 a class. So conclusions about the fired evidence and  
13 whether or not it was fired from a particular firearm,  
14 those identifications are actually verified, meaning  
15 that a second examiner physically examines that evidence  
16 on a comparison microscope and eventually must come to  
17 the same conclusion or we wouldn't report it as an  
18 identification. We also have what's called a technical  
19 review where I reviewed Mr. Colca's work that he did and  
20 determined that he followed the standard operating  
21 procedures, that what he did was technically sound  
22 and -- that was prior to the issue of the report. I  
23 don't have a note of exactly when I technically reviewed  
24 his work, but it would have been technically reviewed  
25 prior to the report being issued.

1 Q. And you technically reviewed it and you did  
2 what else?

3 A. I also verified the identification conclusions  
4 that were drawn.

5 Q. When you do that, do you -- is Mr. Colca  
6 sitting right there with you and says, look at this part  
7 of the bullet, this is what I think shows it's a match,  
8 or how do y'all go about doing that?

9 A. Sometimes if -- if the case is a priority, I  
10 may look at it. After he's done looking at it in the  
11 microscope, I will sit down while the items are still  
12 set up on the scope and conduct my own analysis or I may  
13 come back at a later date, and in this case, I did both  
14 things. There was part -- part of the request was a  
15 priority. We issued some preliminary results prior to  
16 the issuance of the report and then there were some  
17 verifications that I did on a later date that he was not  
18 there for.

19 Q. And what sort of preliminary report was issued?  
20 I don't remember seeing that.

21 A. I'm assuming it was a report. It wasn't a  
22 preliminary report, it would have been verbal results.

23 Q. Given to who?

24 A. Mr. Colca released the results to HPD  
25 investigators, Sergeant Elliott and Officer Stahlin, and

1 it -- they had requested that a particular cartridge  
2 case be compared to the firearm.

3 And so he issued a preliminary result of  
4 the single cartridge case that he examined was fired in  
5 that firearm. That conclusion is also contained in the  
6 report that is written, but we don't separately say that  
7 we provided it to the investigators on a prior day.

8 Q. Now, were any of the factories that you  
9 visited, factories that manufactured Lorcin pistols?

10 A. You mean the factories that I toured?

11 Q. The same -- yeah, the same type of pistol that  
12 was examined in this case.

13 A. Have I toured Lorcin's facility, is that what  
14 you're asking?

15 Q. Right.

16 A. No, I have not.

17 Q. Okay. And why do you tour different  
18 facilities? Why do you go to different ones rather than  
19 just go to one and get a feel for what they do?

20 A. Different manufacturers use different  
21 techniques and they're a manufacturer of their firearms,  
22 and so we try to go to a wide range of firearms  
23 manufacturers to get exposure to the different types of  
24 manufacturing techniques that are out there.

25 Q. So do you know whether or not you or

1 Mr. Colca -- but I know you didn't, but did Mr. Colca  
2 ever visit a facility where they manufacture Lorcin's?

3 A. Not to my knowledge.

4 Q. Do you think it would be important to have  
5 knowledge about the particular techniques that Lorcin  
6 Manufacture is using in helping you to assess whether or  
7 not you could make an identification?

8 A. It's not a hundred percent necessary to know  
9 specifically because we have exposure to the different  
10 manufacturing techniques. We don't necessarily need to  
11 know exactly how each manufacturer makes a firearm to  
12 know, overall, just the general procedures that are  
13 used. There is some literature out about how Lorcin's  
14 are manufactured, so, you know, I haven't reviewed that  
15 literature. But again it's not -- it's not vital to  
16 what we do to know how each individual manufacturer  
17 makes their firearms.

18 Q. I didn't see any of the Lorcin materials in any  
19 of the written materials that I was provided in all this  
20 stuff. Is that in your file, the Lorcin, the written  
21 materials?

22 A. In this case file? No, they're published in  
23 the AFTE journal.

24 Q. And is it your opinion based on your review of  
25 the stuff you looked at in this case that that

1 particular pistol fired the items that you examined to  
2 the exclusion of all other pistols in the world?

3 A. To the exclusion of all other pistols in the  
4 world, to me implies absolute certainty and I can't say  
5 absolute certainty. I have not test-fired every single  
6 firearm that has ever existed or will ever exist so I  
7 cannot compare all of those. What I say is that the  
8 likelihood that another firearm would create these types  
9 of markings on a cartridge case or on a bullet is so  
10 remote as to be considered practically impossible. It's  
11 a practical impossibility, not an absolute  
12 impossibility.

13 Q. And what's your scientific basis for saying  
14 that?

15 A. After reviewing all of the literature and the  
16 research that has been done and published in the AFTE  
17 Journals on consecutively manufactured barrels and  
18 slides as well as actually me physically being able to  
19 examine bullets and cartridge cases fired from  
20 consecutively manufactured slides, I am confident that  
21 the markings left by the tool that creates the firearm  
22 are unique to that firearm and will then -- that firearm  
23 will then impart those unique markings to the cartridge  
24 cases and the bullets that are fired in them.

25 Q. So how does the -- how does AFTE help you --

1 you said that's one of the basis for your scientific --  
2 scientific basis for your conclusion. What in the AFTE  
3 literature tells you that you can draw that conclusion?

4 A. Well the AFTE theory of identification is that  
5 the tools that make firearms are -- the markings that  
6 are left on the firearms by the tools rapidly change  
7 from, not only from one firearm to the next but within  
8 that same firearm. And so that theory is based on the  
9 research that has been done by many firearms examiners  
10 across the world for over a hundred years now. There's  
11 published literature by AFTE, there's books that have  
12 been published by Gunther and Gunther that -- and other  
13 authors that are considered the father's of developing  
14 this forensic science that determined over and over and  
15 over again that these markings are unique to firearms.

16 Q. Are you aware, since you said you knew about  
17 the NAS report, you know there's a heated debate going  
18 on in the scientific community about whether or not  
19 there really is such a thing as uniqueness in any  
20 particular firearm, you know that that's an ongoing --

21 A. I know that the NAS report draws that into  
22 question, yes.

23 Q. Okay. There is a debate amongst scientists as  
24 to whether or not what AFTE believes is correct or not.

25 A. I'm aware that there is a question, yes.



1 Q. Now, you said awhile ago that there is no  
2 computer system developed by the FBI or anybody else,  
3 like they use for fingerprints where they put in a  
4 fingerprint in AFIS and a print will pop up and they  
5 say, yeah, that guy's sitting over in prison over here  
6 for rape and now we think maybe he raped this other  
7 woman, there's no comparable system for  
8 firearms/toolmarks?

9 A. Well, there is. The IBIS system is comparable  
10 to the AFIS system.

11 Q. It doesn't have the same number of hits as you  
12 would in a fingerprint system.

13 MR. HANNA: Judge, that's a misstatement  
14 of the law that the AFIS system exists and it does  
15 require an independent examination by an examiner in  
16 order to make that comparison to the same tool that  
17 IBIS -- It's just that, hey, here are two that are  
18 similar, you need to look at this and make sure they're  
19 of the same person and the same weapon and the same  
20 cartridge. It's the same. He's misstating it, the  
21 accuracy of the AFIS system.

22 MR. DOGGETT: No, I'm saying it wasn't as  
23 accurate, that's what I said.

24 MR. HANNA: But you exceeded -- you said  
25 that you will conclude that there's a match based on

1 AFIS, which is not exactly the case.

2 THE COURT: A point I'm sure you will make  
3 on redirect.

4 Q (By Mr. Doggett) But you said the NIBIN system,  
5 what was it? About one percent, you said.

6 A. I believe that's our laboratory hit rate.

7 Q. Did you ever -- did y'all enter this particular  
8 gun in the NIBIN system?

9 A. Yes.

10 Q. Did you get any hits?

11 A. No.

12 Q. And when you get a hit in the NIBIN system,  
13 isn't it true that most of them turn out -- you already  
14 testified, you said that it might even be a different  
15 kind of gun.

16 A. Well, we don't consider it a hit in the NIBIN  
17 system until it's confirmed by two examiners that are  
18 physically examining the evidence. What you're asking  
19 about is the results, the correlation results that the  
20 computer gives back, that we review on the screen of the  
21 computer. Most of the -- 99 percent of those are not  
22 legitimate, high confidence hits where we think we need  
23 to review that evidence.

24 Q. Even the one percent -- are you saying  
25 99 percent of the one percent turn out not to be valid?

1           A.    No.  What I'm saying is that the 99 -- 99  
2 percent of the evidence that we enter into the NIBIN  
3 system, when we review the correlation for that piece of  
4 evidence, 99 percent of the time we don't get a high  
5 confidence hit.  About one percent, maybe two percent of  
6 the time, we do get high a confidence hit that we then  
7 compare.  And I don't have -- I don't know the  
8 statistics on, once we decide to compare those two  
9 items, how many times we would actually say it's a  
10 confirmed match.  Most of the time they are, but  
11 sometimes they are inconclusive or elimination.

12           Q.    So when you said awhile ago that using NIBIN  
13 that sometimes the class characteristics don't even  
14 match, what you meant by that is that it might be --  
15 NIBIN might come back and say, this is a 38, and you're  
16 looking at a 40 caliber or whatever; the class  
17 characteristics might not even be the same.

18           A.    Well, not the caliber.  The caliber is filtered  
19 out by the system.  But there are other markings on the  
20 breech face that might not -- there might be circular  
21 marks on one and parallel marks on the other.

22           Q.    Have y'all taken this gun -- you said there are  
23 other crime labs, there's a DPS lab in Houston -- have  
24 y'all sent this gun and the shell casings and the  
25 bullets out to get your results verified by a different

1 lab?

2 A. Our laboratory did not do that nor do we  
3 practice that typically. I don't know if anyone else  
4 has sent off that firearm for examination.

5 Q. Are you familiar with the specific mass  
6 provisions that talk about the validity of  
7 firearm/toolmarks analysis?

8 A. I've read them, I don't know them by heart.

9 Q. Are you familiar with the -- where they say the  
10 validity of the fundamental assumptions of uniqueness  
11 and reproducibility of firearms related toolmarks has  
12 not yet been fully demonstrated.

13 A. I've read that quote, yes.

14 Q. And what does that mean to you?

15 A. To me, they're scientists who are not firearms  
16 examiners and have not taken the consecutively  
17 manufactured bullets and cartridge cases that are  
18 available to firearms examiners and looked at them to  
19 see what we base our opinion on as far as the uniqueness  
20 of the markings. They would like to see more research.

21 Q. They what?

22 A. They would like to see more research.

23 Q. Right. To establish whether or not the AFTE  
24 assumption of uniqueness is valid, right?

25 A. That is what they would like.

1 Q. And also to establish whether or not you can  
2 have reproducibility in the test results, correct?

3 A. I don't remember that quote being there, I know  
4 that there is reproducibility.

5 Q. What does reproducibility mean?

6 A. Reproducibility, to me means two different  
7 things, either that the marks themselves are reproducing  
8 or that a test result is reproducible.

9 Q. Another quote from NAS, "The science regarding  
10 firearms examinations does not permit examiner testimony  
11 that a specific gun fired a specific bullet to the  
12 exclusion of all other guns in the world". Do you agree  
13 with that?

14 A. That's why we don't say to the exclusion of all  
15 of the guns in the world.

16 Q. What do you say then?

17 A. It's a practical impossibility for another gun  
18 to make the same marks. It's not an absolute  
19 possibility, I can't say for sure it's an absolute  
20 possibility. Do I believe it is possible? No.

21 Q. I understand the distinction you're making, but  
22 to a layperson that you're telling that to, isn't that  
23 basically the same thing? That this is the gun that  
24 fired the bullet? No other gun could have fired it?

25 A. I don't think that that's -- I think that the

1 distinction is not lost on the layperson, I think that  
2 they could make that distinction and understand it.

3 Q. Do you know what the rate of error is in  
4 firearms/toolmark analysis?

5 A. I don't necessarily think that there is a solid  
6 answer for the rate of error. I think that the closest  
7 rate of error comes from a proficiency test which is  
8 demonstrated as -- depending on how you look at,  
9 one percent, 1.4 percent.

10 Q. But you, yourself, said awhile ago that those  
11 proficiency tests do not measure the error rate.

12 A. They're not designed to measure the error rate.  
13 Can you take the error rate that is evident from the CTS  
14 proficiency test and assign an error rate to that? Yes,  
15 you can.

16 Q. Well, you can make an argument that that has  
17 something to do with the error rates. But again, you  
18 said those tests are not designed to determine error  
19 rate for firearms/toolmarks analysis.

20 A. That's correct.

21 Q. And the competency tests, are they done --  
22 they're not done blindly.

23 A. A competency test?

24 Q. Right.

25 A. No, a competency test is the test --

1 Q. The proficiency test.

2 A. No. Typically -- and I mean I can only speak  
3 for our laboratory's policies and procedures -- just the  
4 way that we handle and process evidence, an examiner --  
5 even if he tried to make it a blind test, usually an  
6 examiner would figure it out that's it's not blind,  
7 because of -- there's just going to be a lot of  
8 background information that would be in the system that  
9 wouldn't be there with a -- in a blind test, in a  
10 proficiency test. So yes, we are typically aware that  
11 we're being tested -- I have taken a blind proficiency  
12 test and it has been done.

13 Q. But genuinely they're not, they're not blind,  
14 they're told that they're going to -- here's a  
15 proficiency test --

16 A. We -- generally we know that we're being  
17 proficiency tested.

18 Q. And one of the -- and so -- and they use -- do  
19 they use -- where do they fire the bullets? Do they  
20 fire them in the bodies of pigs or do they fire them  
21 into water tanks or where do they fire the bullets?

22 A. I don't know, you'd have to find out from CTS  
23 how they develop their tests.

24 Q. But generally they're pretty -- the bullets are  
25 pretty pristine, aren't they?

1           A.    Yes, the bullets are pristine.  And that goes  
2 back to the idea that they want to make proficiency  
3 tests that are similar across all of the bullets that  
4 are being test-fired, so they want to provide similar  
5 samples to all of their clients.

6           Q.    And so they're not real world, they're not like  
7 bullets that you've actually examined and have been shot  
8 into people or buildings or -- that you look at in your  
9 lab, right?

10          A.    I do get pristine bullets in case work, I just  
11 don't always get pristine bullets in case work.  So it  
12 does mimic some of what I see in case work, it's just  
13 not all, it's not the entire gamut of what I see in case  
14 work.

15          Q.    You're not and -- they don't get counted off if  
16 they put inconclusive, right?

17          A.    Inconclusive is not considered incorrect.

18          Q.    And are you aware of the studies that have  
19 shown that when they get proficiency tests, firearms  
20 examiners rate of inconclusive goes up to about  
21 forty percent, but in the real world it's much more than  
22 that?

23          A.    No, I'm not aware of any kind of studies like  
24 that.

25          Q.    You haven't heard about that?



1           A.    No.

2           Q.    The examiners know that if they put  
3 inconclusive, they're not going to be counted off for  
4 that, right?

5           A.    Well, counted off is not a very good way of  
6 putting it. I can speak from personal experience that  
7 if you put inconclusive when the expected answer was  
8 identification or elimination, it's not a no  
9 consequence's situation. You may not necessarily be  
10 punished or fired for that result, but if you don't get  
11 answers that are consistent with what the expected  
12 answer is in the test. You do -- you may have to go  
13 through remedial training, you -- at the very least,  
14 need to justify that answer to like -- I've had to do  
15 that to my supervisor. I said, look, this is what I  
16 said inconclusive, because I do see disagreement here  
17 and here and I'm not sure that it's an elimination or  
18 I'm not sure it's an identification.

19          Q.    How do you grade the proficiency test?

20          A.    It's not graded. You're either -- it's either  
21 acceptable or unacceptable, I think are the terms we  
22 use.

23          Q.    Well, where did I get this -- I read somewhere  
24 that when you put inconclusive, it doesn't count against  
25 you. Where did I get that from? Have you heard that

1 before?

2 A. Again, it's not counted against you, but you  
3 should -- you may have to go through retraining to --  
4 especially if you miss an identification, your  
5 supervisor is probably going -- and your trainer is  
6 going to be concerned with why you missed that  
7 identification. And you may have to go through some  
8 retraining, so it's not a -- it's not a no consequence  
9 situation. It's just not -- it's not meant to be a  
10 punitive situation, if you say inconclusive.

11 Q. All right. How many individual characteristics  
12 would you look for on a typical cartridge case before  
13 you could determine that it was fired by a particular  
14 weapon?

15 A. I don't have a set number of individual  
16 markings that I would -- that I would look for.

17 Q. And there's nothing in the literature from AFTE  
18 or your SOP's or anything that tells you how many  
19 characteristics you would have to have before you could  
20 opine that this particular casing was fired by a  
21 particular weapon?

22 A. There's no requirement, no.

23 Q. There's no standard.

24 A. No.

25 Q. What about examining the bullet? Is the answer

1 the same? There's no standard for the number of  
2 characteristics?

3 A. There's no standard, no.

4 Q. And how many individual characteristics do you  
5 think you would find on a typical bullet casing before  
6 you would say it was fired by a particular weapon, just  
7 on average.

8 A. I don't count the number of agreements -- or  
9 agreeing lines, agreeing striations or agreeing marks.  
10 If it's not -- it's a pattern match, so I'm looking for  
11 groupings of markings that match, not a hard number.

12 Q. Same answer on the bullet?

13 A. Yes.

14 Q. Is this part of the reason why they say this is  
15 entirely subjective?

16 A. That is why -- it's not entirely subjective but  
17 that is the subjective part of it. Each examiner must  
18 determine for themselves when they say identification,  
19 and that's why we have verification of identification so  
20 that two examiners say it's an ID before it's an ID.

21 Q. Well the verification doesn't always work, does  
22 it?

23 A. I think it does.

24 Q. Do you know about the Williams' case that came  
25 out of y'all's lab a few years ago? Williams, where a

1 wrong match was declared.

2 A. No.

3 Q. It was checked by two different supervisors who  
4 supposedly did what you did and they said, yeah, it's  
5 the same gun and they were wrong.

6 A. I don't know what you're talking about.

7 Q. You never heard of that case?

8 A. No.

9 Q. It was part of the reason why the criticism of  
10 the lab --

11 MR. HANNA: Your Honor, the witness has  
12 indicated she's not familiar with what Defense counsel  
13 is speaking of.

14 MR. DOGGETT: Okay.

15 THE COURT: Sustained.

16 Q (By Mr. Doggett) In this particular case, how  
17 many points of similarity did you identify on the  
18 cartridge casings?

19 A. Again, the same answer, I don't count the  
20 number of matches. I'm looking for groups of similar  
21 markings that exceed what I would expect to see in a  
22 best known non-match and the agree -- or is it  
23 consistent, in agreement, with known matches that I have  
24 seen.

25 Q. The same -- I mean, based on your review of

1 Colca's work, the same answer for him? You didn't put  
2 in the report, I found six areas of agreement or --

3 A. No, we take photographs of our identification  
4 or the area that we used for identification, so we don't  
5 record specific numbers.

6 Q. What do you do when you have some areas of  
7 agreement and some areas of disagreement, what do you  
8 do?

9 A. Well typically -- disagreement is kind of a  
10 strong word. If there's disagreement because the item  
11 is damaged, or I can say, well, there's disagreement  
12 here because the cartridge case didn't come in -- maybe  
13 not so much a disagreement as a lack of markings in a  
14 particular area. I may be able to say, well, the  
15 cartridge case didn't come into contact with the breech  
16 face of the firearm or the land impression didn't make a  
17 good of a mark here because the bullet was crooked. If  
18 I see strong disagreement in any area then I'm going to  
19 call into question whether or not that agreement that  
20 I'm seeing is individual or subclass in nature.

21 Q. So, if there's disagreement, sometimes you come  
22 up with explanations about why that doesn't matter, why  
23 you still think it's a match?

24 A. Why there -- not why it doesn't matter, but why  
25 there would be disagreement or a lack of agreement in

1 that area.

2 Q. And again that's all subjective?

3 A. Yes.

4 Q. So somebody reviewing -- some outside person or  
5 expert reviewing the report could not necessarily  
6 tell -- the reports in this case, they couldn't tell  
7 from what was documented really what the basis of your  
8 subjective opinion was as to why you thought this  
9 particular gun fired the items that were identified,  
10 correct?

11 A. In reviewing the report itself, no. In  
12 reviewing the documentation, yes.

13 Q. Well, but you don't tell them in there, what  
14 you thought agreed, or if there were any areas of  
15 disagreement and what your explanation was for that,  
16 that's not in the report.

17 A. We have photo documentation of the areas of  
18 agreement, not all of them but what we based our  
19 identification on or at least a representative of what  
20 we -- sometimes it's not possible to capture a  
21 photograph, all of the areas of identification.

22 Q. Now in this particular case, this gun was  
23 tested by Mr. Colca, then you checked it and you  
24 reviewed what he did and then it got test-fired again,  
25 correct?

1 A. Yes.

2 Q. Why was that?

3 A. The prosecution requested that I test-fire the  
4 gun again so that I would be able to testify about the  
5 functionality of the firearm.

6 Q. And that was because Mr. Colca is no longer  
7 with the Forensic Science Center?

8 A. Yes.

9 Q. And did you test-fire the gun again?

10 A. Yes, I did.

11 Q. Did you also have problems making the gun  
12 function properly?

13 A. Again I found that the magazine was broken and  
14 so instead of using the magazine that was provided and  
15 instead of hand loading, I used a reference magazine.  
16 And then when I test-fired the firearm, I found that  
17 when -- as a review, when Mr. Colca test-fired the  
18 firearm, he had two cartridge cases that didn't eject  
19 from the firearm. I had two cartridge cases that  
20 actually did not even extract from the firearm and I  
21 believe that was due to the corrosion in the barrel and  
22 in the chamber.

23 Q. What do you mean -- explain so it's clear on  
24 the record that they did not extract.

25 A. In the cycle of a semi-automatic firearm; when

1 the cartridge is discharged, the bullet comes out of the  
2 cartridge case and goes down the barrel of the firearm.  
3 Once the bullet is out of the barrel of the firearm then  
4 the slide begins to move back, the slide is the top part  
5 of the firearm. As it moves back, the slide has an  
6 extractor on the side which hooks into the rim of the  
7 cartridge case or hooks onto the rim of the cartridge  
8 case and pulls back on the cartridge case and then  
9 there's an ejector. In this particular firearm the  
10 ejector is the firearm pin. The ejector knocks the  
11 cartridge case clear of the firearm. So when Mr. Colca  
12 test-fired the firearm, the cartridge case is extracted  
13 but then got stuck in the action as the slide was  
14 closing back again. When I test-fired the firearm, the  
15 cartridge case did not even extract out and I had to  
16 take a wooden dowel, put it down the barrel and kind of  
17 tap the wooden dowel to get the cartridge cases out.

18 Q. So the gun was not in the same condition when  
19 you refired it as it was in 2010?

20 A. As far as I could tell the gun was in the same  
21 condition. It may have been a condition of the  
22 ammunition that I was using, I used different ammunition  
23 than what Mr. Colca did. It could have been that I had  
24 a magazine in the firearm or just that Colca didn't. I  
25 don't know why he had -- and I did have one cartridge



1 case that did extract and eject properly, so I don't  
2 know where the difference was. It may be in the same  
3 condition, those two randomly just didn't extract and  
4 eject.

5 Q. Why didn't you use the same type of ammunition?

6 A. I don't know. Let me see what ammunition I did  
7 use. I used Remington Peter's stock ammunition,  
8 Mr. Colca used Winchester.

9 Q. Do you know what kind of bullet was -- there  
10 was a bullet found in the gun when it was originally  
11 brought in. Do you know what make that was?

12 A. I know the cartridge cases were PMC, I don't  
13 know what brand the bullet was. It's difficult to  
14 assign a manufacturer to a bullet unless there's  
15 something very unique about it.

16 Q. And there's variabilities -- just like in guns,  
17 there's variabilities in ammunition, right? As far as  
18 the metals used and hardness and all that sort of stuff.

19 A. That's correct.

20 Q. So changing ammunition could change the  
21 results, right?

22 A. Changing ammunition could change the results.  
23 Sometimes you can test-fire a firearm with one type of  
24 ammunition and then test-fire it with another type of --  
25 with different types, and you may get -- not specific --

1 you're not going to have a disagreement of marks, but  
2 you may have other marks in one area than another. So  
3 if you're trying to reproduce markings on a particular  
4 area, you may change the ammunition that you use, it  
5 doesn't change the results.

6 Q. Now, when you test-fired it the second time,  
7 what did you compare your test-fire bullets and  
8 cartridges to?

9 A. Initially I didn't compare them to anything.  
10 Later the prosecutor requested that I compare my  
11 test-fires to the test-fires created Mr. Colca. And the  
12 test-fires that were created by Mr. Colca was what we  
13 used to identify the unknown cartridge cases and bullets  
14 that were submitted with the case. So, when I  
15 test-fired my cartridge cases to the test-fires created  
16 by Mr. Colca, we were able to establish that my  
17 test-fires and Mr. Colca's test-fires were fired in the  
18 same firearm which is what I already knew.

19 Q. So you -- when you test-fired it the second  
20 time, you compared your test-fire objects to the first  
21 test-fire objects.

22 A. I compared my test-fires objects to one  
23 another, and then yes, I took one representative and  
24 compared a cartridge case and a bullet back to the  
25 test-fires created by Mr. Colca.

1 Q. You didn't compare it to the original evidence  
2 that was brought in.

3 A. No, I did not.

4 Q. Did you do it that way because that's what the  
5 prosecutor told you to do?

6 A. No. We -- we didn't even feel it was necessary  
7 to actually compare the two test-fires. I had every  
8 confidence that the test-fires created by Mr. Colca were  
9 the test-fires created in this firearm because he  
10 followed our standard operating procedure, and we treat  
11 test-fires as evidence meaning they have a chain of  
12 custody and they've been sealed. The prosecutor wanted  
13 us to do it. And so my boss told me what we're going to  
14 do is this, we're going to compare the two sets of  
15 test-fires to each other.

16 Q. So you didn't make that decision; your boss  
17 made that decision.

18 A. I did not make the decision.

19 Q. Who is your boss?

20 A. Darrell Stein.

21 Q. Did the test-fires from the second test-fire  
22 cartridge cases have extractor marks on them?

23 A. I didn't look for extractor marks.

24 Q. Did you look for extractor marks in your review  
25 of Mr. Colca's work?

1 A. No.

2 Q. Is that something that you would normally look  
3 at or you could look at?

4 A. It's something I could look at.

5 Q. But y'all didn't do it in this case?

6 A. Mr. Colca may have looked for extractor marks.

7 Q. Is that in his report?

8 A. No.

9 Q. Why wouldn't that be documented in his report?

10 A. Typically we don't use extractor marks for  
11 identification. We would look for an extractor mark to  
12 try and determine the orientation that the cartridge  
13 case should be in when we image it into IBIS.

14 Q. So you think this whole test-fired thing, the  
15 second test-fire was -- from your perspective, really  
16 just a waste of time?

17 A. I mean, I appreciate that the prosecutor wanted  
18 me to be able to talk about the functionality of the  
19 firearms. But as far as comparing one set of test-fires  
20 to another, it was unnecessary, it was an unnecessary  
21 comparison.

22 Q. Do -- do you guys, you criminalists ever go sit  
23 and drink a beer together and talk about your work? You  
24 know, talk about your work, about how you do these  
25 identifications? You don't have to drink beer, but I

1 mean do you ever talk about it?

2 A. I mean, not unusually in a social setting, at  
3 least, I don't usually socialize with my coworkers, I'm  
4 sure people do.

5 Q. Well, that's not the point of my question. The  
6 point of my question is, do y'all ever talk about how  
7 you go about making these identifications?

8 A. Outside of work, no.

9 Q. I mean, is there a difference of opinion  
10 amongst the criminalists as to how many points of  
11 comparison you have to have that match before you can  
12 make an identification or exclude a firearm?

13 A. I mean, each individual examiner has developed  
14 their own opinion as to what is agreement, enough to say  
15 identification. But it's difficult to actually  
16 communicate back without sitting at a microscope and  
17 looking at something together. So, to be able to sit  
18 and talk about, oh, I -- and again, we don't even count  
19 points. But even if we did to -- all points are not  
20 created equal. So I may see seven on this one and  
21 that's not going to be the same as seeing seven on a  
22 different item.

23 Q. So I guess the bottom line is each of you has  
24 your own internal standards as to what you think you  
25 have to see before you can declare identification or an

1 exclusion.

2 A. Based on my training and experience and review  
3 of the literature, I have developed my own level that I  
4 expect cartridge cases or bullets to see or to -- for a  
5 level of agreement that I need to see before I would say  
6 identification, yes.

7 Q. And that's based on your -- as best I could  
8 tell the only words you said that talk about a standard  
9 is the AFTE standard of best known non-match.

10 A. It has to exceed the agreement that we see on a  
11 best known non-match. And in my training and my  
12 experience and the experience of examiners that have  
13 published literature, the best known non-matches are the  
14 test-fires, bullets or cartridge cases fired in  
15 consecutively manufactured firearms. And so since  
16 examiners, myself included are able to distinguish  
17 between cartridge cases fired in consecutively  
18 manufactured firearms or bullets fired in consecutively  
19 manufactured firearms, we are able to say that those  
20 markings that we are seeing are unique. And so, when I  
21 see a certain level of agreement in a best known  
22 non-match, I look for agreements that exceeds that and  
23 that is consistent with the agreements that I have seen  
24 from cartridge cases or bullets that I know were fired  
25 in the same firearm, test-fires.

1 Q. Are you familiar with a case, I've seen  
2 pictures of it where two bullets are -- two casings are  
3 fired in separate weapons and they were declared to be a  
4 match?

5 A. I'm not aware of where they were declared to be  
6 a match, no.

7 Q. You never heard of that?

8 A. No.

9 Q. Okay. That would go against the uniqueness  
10 hypothesis that you guys rely on, correct?

11 A. Yes.

12 Q. Do you know whether or not -- are there any  
13 protocols used by the DPS lab that are different than  
14 y'all's as to how many areas of agreement you have to  
15 have or disagreement before you can make a decision  
16 about whether or not you've identified something?

17 A. I don't know, I don't believe DPS has any set  
18 standard number.

19 Q. You don't think they have standards either?

20 A. Not to my knowledge.

21 Q. What about all these other labs you talked  
22 about, all over the United States and all over the  
23 world, have you ever seen there -- if they have any,  
24 their standards as far as what you have to have that  
25 declare something identified versus --

1 A. Not to my knowledge.

2 Q. And that's because they don't exist.

3 A. Yes.

4 Q. What's the difference between an individual  
5 characteristic and a subclass characteristic?

6 A. A subclass characteristic is a marking that is  
7 unique to the tool that created the firearm, not a  
8 marking that is unique to the firearm. So a subclass  
9 characteristic is one where the tool that created the  
10 firearm had some flaw or some set of markings that  
11 carried over when it created one tool -- or one firearm  
12 to the next. An individual mark are markings left by  
13 that same tool or different tools when creating that  
14 firearm that did not carry over one firearm to the next  
15 and are therefore is unique and individual.

16 Q. Did you guys test-fire any other Lorcin pistols  
17 like the one that was the subject of the investigation  
18 in trying to make your determination in this case?

19 A. No. I have fired a Lorcin but not specifically  
20 for comparison in this case.

21 Q. Do you have Lorcins in your -- what do you call  
22 it, your --

23 A. Reference collection.

24 Q. Reference collection?

25 A. Yes.



1 Q. You have Lorcins like this one?

2 A. Yes.

3 Q. Y'all didn't test-fire any of them to compare  
4 them to this gun?

5 A. No.

6 Q. AFTE agrees with you that this -- these  
7 examinations of determinations are subjective, correct?

8 A. Yes.

9 Q. Did you notice any -- with regard to this  
10 particular gun, did you notice any individual  
11 characteristics?

12 A. Yes.

13 Q. What were they?

14 A. Well, the firearm barrel is completely  
15 corroded. There's actually no lands and grooves left in  
16 the barrel of the firearm when I examined the inside of  
17 the bore. It was in that condition when Mr. Colca,  
18 because he made the same observation that the barrel and  
19 the chamber are completely corroded, it's pitted. And  
20 there is no way that another firearm, even if it was  
21 manufactured, one right after the other that a firearm  
22 would be in the same conditions that caused it to be  
23 corroded, which I don't know what they were and then  
24 corrode in the same fashion. The individual structure  
25 of the metal itself is going to corrode at different

1 rates because there's going to be imperfections within  
2 the metal, so it's going to corrode in different rates  
3 and different points. So the inside of the barrel is  
4 completely unique in every way that I could ever  
5 imagine, because I can't imagine another firearm that  
6 could ever corrode in the same way. The breech face did  
7 not have many unique markings from what I could tell.  
8 The firearm pin, however was pitted and had unique  
9 markings on it.

10 Q. And again, you don't know anything about the  
11 specific manner in which they manufactured these  
12 Lorcin's, do you?

13 A. I have -- at some point, Lorcin's were  
14 manufactured with the breech face being stamped, and  
15 then at some point they turned into a different process,  
16 so I'm not sure where this Lorcin fell in the  
17 manufacturing because they changed their procedures. I  
18 don't know how they manufactured the barrel, but again  
19 it was completely corroded so it doesn't really matter.

20 Q. You don't have any idea of what the  
21 particular -- the casings that you examined, you have no  
22 idea when they were fired?

23 A. That's correct, I have no idea when they were  
24 fired.

25 Q. There's no way to determine that scientifically

1 when they were fired.

2 A. Other than if they happened to look corroded,  
3 you could maybe establish that they were older but they  
4 could have been in a corroded condition before they were  
5 fired.

6 Q. I assume you guys got the gun after other  
7 forensic people got it and swabbed it for DNA and stuff  
8 like that. Y'all wouldn't do what you did to it before  
9 they did their work.

10 A. We rely typically on the investigators to make  
11 decisions about how -- what sort of testing they want  
12 done on a firearm. So if they submit it to us but said  
13 they want fingerprints or DNA done, we would have, of  
14 course, not touch it until that happened. But if the  
15 investigator doesn't want DNA or fingerprint processing  
16 done on a firearm, we would take it directly and do our  
17 thing, quote, unquote with it.

18 MR. DOGGETT: I pass the witness.

19 MR. HANNA: May I proceed, Your Honor?

20 THE COURT: Yes.

21 MR. HANNA: May I approach the witness,  
22 Your Honor?

23 THE COURT: You may.

24 **REDIRECT EXAMINATION**

25 Q. (BY MR. HANNA) Ms. Eudaley, one of the things

1 that Defense counsel has relied on, not only in his  
2 questions, but heavily in his brief to the Court, is  
3 this NAS report, and you're familiar that report?

4 A. I've read it, yes.

5 Q. Now, you've read the entire thing?

6 A. I've read the executive summary.

7 Q. Okay. And so that NAS report, if you recall,  
8 covers three hundred and something pages long.

9 A. It covers all forensic disciplines.

10 Q. All forensic disciplines. And in reality, the  
11 NAS report includes maybe six pages regarding firearms  
12 and toolmark identifications?

13 A. That sounds about right.

14 Q. Okay. Defense counsel asked you if you were  
15 familiar with a particular line that's included, and I'm  
16 showing you what I'll purport to you -- does that look  
17 like the forensic science report, Strengthening Forensic  
18 Science in the United States, a Path Forward?

19 A. Yes.

20 Q. Okay. And that was your understanding of what  
21 Defense counsel was referring to.

22 A. Yes.

23 Q. Okay. He quoted this line to you, "The  
24 validity of the fundamental assumptions of uniqueness  
25 and producibility of firearms related toolmark has not

1 yet been fully demonstrated".

2 A. Um-hum.

3 Q. Do you recall that?

4 A. Yes.

5 Q. Did you notice that in this publication, that's  
6 actually in quotation marks?

7 A. I do see that it is in quotes, yes.

8 Q. Okay. So that would give you, the reader, the  
9 impression that this is something that in essence,  
10 saying it's coming from some other source.

11 A. That is what I would assume.

12 Q. Okay. And if you look at this paragraph, it  
13 actually reads, the National Academy --

14 A. Academy.

15 Q. Academy. I'm sorry, the National Academy's  
16 report, *Ballistic Imaging* in Italics.

17 A. Yes.

18 Q. Are you familiar with *Ballistic Imaging Report*?

19 A. I've read that.

20 Q. What was the purpose of the ballistic imaging  
21 report?

22 A. I believe it was to determine whether or not it  
23 would be feasible to create a ballistic imaging  
24 database.

25 Q. Sort of like a CODIS for DNA?

1 A. Or what exist in NIBIN.

2 Q. Okay. And so that was the focus of the  
3 ballistic imaging report.

4 A. Yes.

5 Q. Okay. So that truly is what that is referring,  
6 the feasibility of creating that.

7 A. Yes.

8 Q. Ballistic imaging machine, or the process.

9 A. Yes.

10 Q. But the Defense attorney also failed to mention  
11 the rest of that paragraph, is that it starts out, that  
12 while not claiming to be a definitive study on firearms  
13 identification, observed that, the National Academy,  
14 that the validity of the fundamental assumptions of  
15 uniqueness and reproducibility, of firearms related  
16 toolmarks has not yet been fully demonstrated, end  
17 quote. And then continues, that that study recognized  
18 the logic involved in trying to compare firearms related  
19 toolmarks by noting that, in quotes again, although they  
20 are subject to numerous sources of variability, firearms  
21 related toolmarks are not completely random and  
22 volatile; one can find similar marks on bullets and  
23 cartridge cases from the same gun.

24 A. Yes.

25 Q. Okay. But it does go on to say that a

1 significant amount of research is necessary in order to  
2 come up with that error rate.

3 A. Yes.

4 Q. Okay. Not that it can't be done, or that the  
5 NAS is telling you that this is junk science.

6 A. Right.

7 Q. Just that, if you want to come up with an error  
8 rate, you're going to have to do a lot more research.

9 A. Right.

10 Q. Okay.

11 A. As a matter of fact, I believe that one of the  
12 participants who wrote the National Ballistic Imaging  
13 report wrote an affidavit specifically for Court  
14 purposes saying that that report is not to be used in  
15 conjunction with trying to determine the admissibility  
16 of firearms related evidence in Court.

17 Q. And so it would be an error to try to do that  
18 via the NAS report?

19 A. NAS report.

20 Q. Okay. And in those other forensic sciences,  
21 the NAS report concluded biological evidence, controlled  
22 substances, friction ridge analysis, pattern impression,  
23 like shoe prints and tire tracks, hair evidence, fiber  
24 evidence, document examinations, paint and coating  
25 evidence, explosive evidence and fire degrees, forensic

1     odontology, blood stain pattern analysis; are those all  
2     ones that you recall seeing in the NAS report?

3             A.     Yes.

4             Q.     Okay. And didn't that NAS report identify  
5     proficiencies in all of those sciences, in all of the  
6     forensic identification disciplines? I mean, even if  
7     you didn't know the proficiency.

8             A.     I don't remember. I paid particular attention  
9     to the firearms portion.

10            Q.     Okay.

11            A.     I didn't pay as close attention to the other  
12     sections.

13            Q.     But that report addressed different ways all  
14     those different practices or areas of expertise could  
15     improve.

16            A.     Yes.

17            Q.     Defense counsel asked you a few questions about  
18     your actual examination of the case in this -- the  
19     evidence in this particular case and Mr. Colca's  
20     examination. Now, you talked about the techniques that  
21     you used, the AFTE technique and the SOP's that you have  
22     in your department; did you guys -- did you and  
23     Mr. Colca apply that technique properly in this  
24     particular case?

25            A.     Yes.



1 Q. He also had a number of questions about how  
2 many characteristics do you have to find before you make  
3 an identification or an elimination? And you said there  
4 are none, there is no standard.

5 A. There is no set standard, no number of markings  
6 that we have to find before we can say identification.

7 Q. Do you know -- why is that?

8 A. Well, for one, not all marks are created equal.  
9 So we have to be mindful that seven markings on one  
10 cartridge case or bullet may not be equal to seven  
11 markings on another one. You're always looking for fine  
12 striate, fine agreement because those fine striate are  
13 much less likely to be subclass, and in fact sometimes  
14 we know there's no possibility that they could be  
15 subclass in nature.

16 But if I found seven gross markings, then  
17 those would not be equal to seven fine markings -- and  
18 I'm just throwing seven out. I would look for much more  
19 than seven markings before I said identification.

20 Q. But each marking or characteristic is unique,  
21 in and of itself and has different value and weight  
22 based on your training and experience.

23 A. It's not necessarily each marking, it's the  
24 groupings of markings, it's the consecutive nature of  
25 striations, both -- not that the fact that the

1 striations are there but that they're of the same depth  
2 and the same width, of the same general contour, and  
3 that they occur in the same area of land impression or  
4 in the same area of the breech face. Similar markings  
5 are the same markings that look the same, they have the  
6 same appearance that are on the same relative positions  
7 of the cartridge case or the bullets.

8 Q. Things that a trained examiner can evaluate  
9 based on their experience and their eyes.

10 A. Yes.

11 Q. And all these characteristics that we've been  
12 talking about as far as the subclass characteristics and  
13 the individual characteristics are typically  
14 microscopic, right?

15 A. They're always microscopic.

16 Q. Okay. So they're not something -- I can't just  
17 look at and go, okay, these are the same, it's something  
18 that has to be done in a microscopic level.

19 A. Correct. You may be able to distinguish a  
20 class just by visually inspecting an item but you can't  
21 establish subclass or individual characteristics without  
22 microscopes.

23 Q. Okay. You also testified a little bit about  
24 these guns in this situation, and what I gathered from  
25 your description, this is a unique firearm. It's not

1 because of the way it was manufactured or that it's a  
2 Lorcin but the condition it was in is unique.

3 A. Yes.

4 Q. Was it a -- what was the quality of the  
5 firearm?

6 A. The firearm started out not -- not of very high  
7 quality, but it was -- like I said, the inside of the  
8 barrel was corroded. So while the exterior of the  
9 firearm was in okay condition, the interior of the  
10 barrel was not in very good condition at all, that was  
11 still functional but --

12 Q. Okay. Is there a distinction -- is there -- do  
13 you draft when you're looking at making toolmark  
14 comparisons, does the quality of the firearm come into  
15 play at all if you have a known firearm?

16 A. It can, in that if it's very rusted, then that  
17 rust or that corrosion is actually going to lend more  
18 individuality to the markings than -- because of the  
19 markings that I saw on the bullet, they were very gross,  
20 heavy striations, which might lead me to believe that  
21 they have could be subclass in nature; except that  
22 upon examining the bore of the firearm, I realized that  
23 it was totally corroded and those markings were not from  
24 land and groove impressions, but were in fact from the  
25 corroded condition of the bore itself, which made them

1 unique.

2 MR. HANNA: Pass the witness, Your Honor.

3 MR. DOGGETT: No further questions at this  
4 time. I would like her to stick around.

5 THE COURT: All right. Thank you very  
6 much, ma'am. You can leave the stand, but please don't  
7 leave the building other than for lunch.

8 THE WITNESS: Okay.

9 THE COURT: Okay. Thank you.

10 Next witness.

11 MR. HANNA: Judge, I don't have any  
12 additional witnesses, but I do want to offer some of  
13 those articles that I mentioned to you during my opening  
14 and also the case law in which I referenced during my  
15 opening also.

16 THE COURT: All right.

17 MR. HANNA: And I don't expect that you  
18 read them all but they're there to support the record  
19 and the case law is also in there.

20 THE COURT: All right.

21 MR. HANNA: And this United States versus  
22 Otero is the case I've referenced that I think is a good  
23 read to give the Court some guidance on just the thought  
24 process of another court that faced the very same  
25 allegations.

1 THE COURT: All right. Thank you. State  
2 rests?

3 MR. HANNA: Yes, Your Honor, I'm sorry.

4 THE COURT: Defense?

5 MR. DOGGETT: We call Mr. Colca.

6 (Witness sworn)

7 MR. DOGGETT: May I proceed.

8 THE COURT: You may.

9 **JOSEPH COLCA,**

10 having been first duly sworn, testified as follows:

11 **DIRECT EXAMINATION**

12 Q (By Mr. Doggett) State your name for the  
13 record, please, sir.

14 A. My name is Joseph Colca.

15 Q. Are you the same Joseph Colca who did an  
16 analysis -- or did an examination on a firearm that  
17 we've been talking about today here in the courtroom?

18 A. I did, yes.

19 Q. And were you present in the courtroom while  
20 Ms. Eudaley testified?

21 A. I was.

22 Q. And are you -- you are no longer employed by  
23 the Houston Science Forensic Center?

24 A. No, I'm not.

25 Q. And when did you leave their employment?

1 A. March 23rd of 2014.

2 Q. And what was the reason why you left?

3 A. I was terminated.

4 Q. And why were you terminated?

5 MR. HANNA: Your Honor, at this time, I'm  
6 going to lodge an objection so that I don't waive it. I  
7 understand that this is one of the Motion in Limines  
8 that I filed is that impeachment purposes of extraneous  
9 conduct. And I expect the Court to go into this and  
10 make a determination of whether or not it's admissible.  
11 But I want to urge my objection that this is not  
12 relevant; the reason for his termination do not go to  
13 his credibility.

14 And so, while I don't expect the Court to  
15 make a ruling, I didn't want to waive an objection later  
16 on in front of the jury.

17 THE COURT: I understand. Your objection  
18 is noted.

19 Q (By Mr. Doggett) Why were you terminated?

20 A. I was terminated for insubordination.

21 Q. And who were you insubordinate with?

22 A. My supervisor.

23 Q. And how were you insubordinate?

24 MR. HANNA: Now, I'm going to object that  
25 he's going into beyond the- the specific instance

1 of conduct --

2 MR. DOGGETT: -- It goes to his  
3 credibility, Judge.

4 MR. HANNA: You can't rely on specific  
5 instances of conduct in attacking someone's credibility.

6 THE COURT: I'm going to -- I'm going to  
7 allow the testimony for purposes of this hearing.

8 Q (By Mr. Doggett) First, who was your  
9 supervisor?

10 A. My supervisor was Darrell Stein.

11 Q. And is that also Ms. Eudaley's supervisor?

12 A. Yes, that is correct.

13 Q. Okay. And how were you -- how did they say you  
14 were insubordinate to this person?

15 A. I refused to sign a document that was a work  
16 plan that was assigned to me.

17 Q. Is it correct that they thought you were having  
18 some sort of behavioral issues and wanted to change your  
19 work duties?

20 A. I don't really know. As far as the reason for  
21 the insubordination was that I also was not provided the  
22 information that I thought was necessary.

23 Q. Anyway, they tried to change your work duties,  
24 correct?

25 A. I was temporarily removed from handling

1 firearms in the firearm section along with a second  
2 employee.

3 Q. When did that occur?

4 A. May or June of 2013.

5 Q. How long had you been a firearms examiner  
6 before that?

7 A. Five and a half years.

8 Q. And what is your educational background?

9 A. I have a Forensic Science Degree, a Bachelor of  
10 Science Degree from the University of Central Florida.

11 Q. Central Florida?

12 A. Yes.

13 Q. When did you get that degree?

14 A. I received that degree in 2007.

15 Q. In your education, did they cover all areas of  
16 forensic science?

17 A. For the most part, there were a few disciplines  
18 that we were not able to get into that were not involved  
19 in our program, mainly handwriting analysis and  
20 toxicology specifically.

21 Q. But you covered everything else.

22 A. For the most part, yes.

23 Q. DNA.

24 A. DNA, controlled substances, firearms,  
25 fingerprints, trace analysis, the whole gamut, we were



1 allowed to select what courses we wanted to.

2 Q. Anyway they -- in May or approximately May of  
3 2013, they removed you from -- they stopped letting you  
4 handle firearms analysis?

5 A. Yes, myself and another employee.

6 Q. And who was the other employee?

7 A. Kim Downs.

8 Q. Is he another firearms examiner?

9 A. She is another firearms examiner.

10 Q. And they -- after they removed you from doing  
11 firearms examinations -- you're saying you don't know  
12 why that happened?

13 A. No, I know why.

14 Q. And why was that?

15 A. We had an argument in our laboratory and an  
16 Assistant Chief of Police with the Houston Police  
17 Department made the determination that he did not want  
18 to keep two people who are angry at each other handling  
19 firearms; so he told us to not handle firearms.

20 Q. So it was you and this other criminalist that  
21 got into the argument?

22 A. She is a criminalist specialist, the same rank  
23 as Donna Eudaley.

24 Q. Y'all had some sort of an argument and the HPD  
25 person saw that and decided you guys shouldn't be

1 handling firearms or recommended that y'all not handle  
2 firearms?

3 A. To my knowledge, it was reported by Kim Downs  
4 and not by some other employee.

5 Q. And then when did they come to you and tell you  
6 that they were altering your work and they wanted you to  
7 do something else?

8 A. Within a few days we were instructed to tie up  
9 the work that we were performing, to finish any priority  
10 cases we were conducting and that we wouldn't be  
11 handling firearms for a period of time.

12 Q. And whatever work plan they had for you, you  
13 refused to sign on that, right?

14 A. That was much later in the process, that was  
15 about a month after. I was initially assigned two  
16 projects which I was attempting to complete, and one of  
17 those projects was taken away from me and I was told to  
18 stop working on it.

19 And that project then later appeared in  
20 that work plan which was another issue that I had with  
21 what was going on.

22 Q. And according to the report I have, that there  
23 were some other problems where you changed some  
24 supervisor -- deleted two supervisors' accounts, what  
25 does that mean?

1           A.    If you know how the recycling bin works in  
2 Windows based operating system where you take a file  
3 from -- the file -- the folder it's located in, you hit  
4 delete and it goes to the recycling bin, and then from  
5 the recycling bin, you have the option to restore that  
6 account, that file. That is essentially what I did. I  
7 took their accounts and deleted, which was actually a  
8 deactivation of their accounts, and did that in the  
9 system that I was an administrator of.

10           Q.    What sort of accounts were they?

11           A.    They were user accounts in the Medio System.  
12 (sp)

13           Q.    What system?

14           A.    It's a Medio Case Works, it's a database  
15 software where we store our -- some of our  
16 documentation, namely, our pictures that we take using a  
17 microscope.

18           Q.    Did you do that because you were -- did you do  
19 that, first of all?

20           A.    Yes, I did.

21           Q.    You did it because you were angry?

22           A.    Somewhat, yes. The supervisor involved had  
23 actually removed my access from the LIMS system which is  
24 the Laboratory Information Management System, without  
25 telling me, without my knowledge. He negated six

1 month's worth of my work, and so I did the same thing  
2 back to him.

3 Q. There was something about changing one of the  
4 analyst's names to Queen Bitch?

5 A. Yes.

6 Q. Who was that?

7 A. It was Kim Downs. At the time that -- that I  
8 did that, she was standing two feet from me. There are  
9 examiners here who were also present at the time in this  
10 courtroom when that happened.

11 That got thrown in the investigation, no  
12 matter what I did, and I couldn't get rid of it. It was  
13 a joke. She knew it was a joke; she laughed, I laughed,  
14 others laughed, and I typed the name in and hit save.

15 Later they went back through the Medio  
16 System and looked at everything I had did in the four  
17 years of using that system and found one instance where  
18 I made a joke in the presence of somebody, and used that  
19 in an investigation.

20 Q. Okay. Now when you looked at the gun in this  
21 particular case, the Lorcin 380, how long did it take  
22 you to do the examination that resulted in your first  
23 report where you made the determination that that  
24 particular gun had fired some shell casings and two  
25 bullets that you examined?

1           A.    I do not have a copy of the case record before  
2 me, but I know it did not take me very long.

3           Q.    Okay.  And what do you mean by not very long?

4           A.    A day, maybe two.  Are you talking about the  
5 initial report?

6           Q.    Yes, the initial examination.

7           A.    I could provide more information if I could get  
8 that case file.

9           Q.    How does that compare to the other examinations  
10 you have done as far as the length of time?

11                   MR. HANNA:  Do you want to give him the  
12 case file?

13                   MR. DOGGETT:  No, I don't.

14                   MR. HANNA:  Judge, for the record, I'm  
15 providing Mr. Colca with the case file.

16                   THE COURT:  Thank you.

17           A.    Just to be clear, it appears that from the time  
18 I received the initial evidence to the initial report,  
19 it took less than a day.

20           Q     (By Mr. Doggett) Less than one day?

21           A.    Yes.

22           Q.    And did you work on anything else while you  
23 were working on this particular case?

24           A.    Meaning did I --

25           Q.    Did you examine any other firearms during that

1 same day, during that same time period that you  
2 indicated you had this case file?

3 A. I wouldn't be able to tell you that without  
4 looking at a chain of custody records, you know, during  
5 that time period.

6 Q. Is it possible you did other examinations  
7 during that same time period, but there's no way to know  
8 it for sure?

9 A. It is possible, but there is a way to know it  
10 for sure, it's just I do not have access to it here, no.

11 Q. Okay. And you -- when you got this gun,  
12 apparently you took it apart, cleaned it, oiled it and  
13 put it back together again, right?

14 A. Yes, I disassembled, decontaminated, rinsed,  
15 dried, oiled and reassembled the firearm.

16 Q. All right. And is that a standard operating  
17 procedure?

18 A. It is when dealing with something that could  
19 potentially be biohazardous and hazardous to myself.

20 Q. Okay. And why was this gun a biohazard?

21 A. It would have appeared to have some sort of  
22 contamination -- or I would have been told that it was  
23 contaminated in some way by the individuals who  
24 submitted the firearm.

25 Q. All right. So -- do you believe you had a

1 conversation with the individuals who submitted the  
2 firearm?

3 A. It is possible.

4 Q. Is that documented in any way?

5 A. I'm sorry, what?

6 Q. Is it documented in that case file in any way  
7 whether or not you talked to the officer who submitted  
8 the evidence to you?

9 A. No, it does not.

10 Q. Should it have been documented?

11 A. It is not a requirement, no.

12 Q. Well, shouldn't it be documented?

13 A. In my opinion, no.

14 Q. No. That's not part of your standard operating  
15 procedure?

16 A. It is not.

17 Q. So you could have had a conversation with the  
18 submitting officer or they could have told you all sorts  
19 of things about the case and that wouldn't be  
20 documented?

21 MR. HANNA: I'm going to object, asked and  
22 answered, argumentative.

23 THE COURT: Sustained.

24 MR. DOGGETT: Well, Judge, the reason why  
25 it's important is because there is a problem in the

1 literature where examiners know what results they're  
2 trying to get and they sometimes skew the results to  
3 help the officer to make a case, so what he may have  
4 been told before he did the examination could be  
5 important.

6 MR. HANNA: That's great for argument,  
7 Judge, but that's not -- he's asked the question --

8 THE COURT: Well you can ask him the  
9 question of whether he was told something but that's not  
10 the question I understood you were asking.

11 MR. DOGGETT: Let me clarify.

12 THE COURT: Yours was a could have  
13 question, was it not?

14 MR. HANNA: It should have. Should you  
15 have done it?

16 THE COURT: Or should have but not a did  
17 you or were you.

18 MR. DOGGETT: I'll clarify.

19 THE COURT: Maybe I'm wrong.

20 Q (By Mr. Doggett) Do you recollect having a  
21 conversation with the officer who submitted this  
22 evidence to you be examined?

23 A. No, I do not recollect.

24 Q. Is it possible you had such a conversation?

25 A. It is possible that we had a conversation at



1 the time of the submission, yes.

2 Q. Okay. But you don't remember whether you did  
3 or didn't -- did or did not have that conversation?

4 A. Not for something received September 27th of  
5 2010.

6 Q. Okay. And there's no documentation in your  
7 records about whether you had or did not have a  
8 conversation with the officer who submitted the evidence  
9 to you for examination.

10 A. There is a record that there was a request made  
11 and that the evidence was submitted but that's all I  
12 have.

13 Q. But there's no documentation as to whether or  
14 not you had further conversation about the case?

15 A. No, there is not.

16 Q. Okay. And you do not do that as a matter of --

17 THE COURT: May I ask? When you say  
18 further conversation, do you mean a conversation after  
19 the conversation he said he didn't have or didn't  
20 remember, or are you talking about the conversation he  
21 said he didn't remember?

22 MR. DOGGETT: What I'm getting at is  
23 whether or not he had a conversation with the officer  
24 about the case -- the facts of the case or anything  
25 that -- where they found the gun and the circumstances

1 of the killings, anything like that, anything  
2 substantive about the facts of the case, other than just  
3 the fact that here, here's a gun, we want you to examine  
4 it. And I'm not talking about, hey, how about those  
5 Astros; they won a game. I'm not talking about --

6 THE COURT: I understand.

7 MR. DOGGETT: -- superfluous --

8 THE COURT: No, I understand that but I  
9 thought the question you asked him was did you have a  
10 conversation with the officer about the case or the gun.  
11 Wasn't that the question --

12 MR. DOGGETT: Yes.

13 THE COURT: -- originally, and he said no.

14 MR. DOGGETT: I think he said he didn't  
15 know whether he did.

16 THE COURT: He said he didn't remember  
17 one. And you said could you have had one.

18 MR. DOGGETT: Yes.

19 THE COURT: Okay. Now, where are we going  
20 from there?

21 MR. DOGGETT: Well I think I made the  
22 point. He doesn't remember whether he had the  
23 conversation, it's not documented whether he had one or  
24 not.

25 THE COURT: You've made that point twice,

1 now three times. Okay. Go right ahead.

2 Q (By Mr. Doggett) Now, you said you took less  
3 than a day, according to what you reviewed in the case  
4 file to come to the conclusions you did in this case.

5 A. From the time I started my examinations, yes.  
6 And it appears that the firearm was received and  
7 decontaminated on one day and my examination started on  
8 the following day.

9 Q. Okay. Do you actually note the times in the  
10 report?

11 A. In the report, no. But there would be an  
12 electronic chain of custody that records the times I  
13 handled the evidence.

14 Q. But you don't have access to that?

15 A. Uh, yeah, I do not have access to that.

16 Q. All right. And in this case, you -- if I  
17 understand you correctly just now, you said you got the  
18 gun, decontaminated it, disassembled it, reassembled it  
19 but didn't begin your examination until the next day.

20 A. Yes.

21 Q. And there's nothing in the report that details  
22 the nature of the contamination, correct?

23 A. No, there is not.

24 Q. So you don't say in the report whether the gun  
25 was covered in blood or whether it was one speck of

1 blood or what the nature of the contamination was.

2 A. No, just that it was contaminated.

3 Q. But it does say in the report how you  
4 decontaminated it, correct?

5 A. Yes.

6 Q. And how did you decontaminate it?

7 A. Again that was -- it was followed by our  
8 standard operating procedures of using a ten percent  
9 bleach solution for ten minutes, so all the parts were  
10 placed in that solution for a period of ten minutes,  
11 they were removed and then they were rinsed with water  
12 to dilute the chlorine so that we don't cause any excess  
13 corrosion overtime.

14 Q. So to decontaminate it, you first took it  
15 apart?

16 A. Yes.

17 Q. And then you put it in the bleach solution?

18 A. Yes.

19 Q. And then you rinsed it to get the chlorine off  
20 of it to prevent further corrosion.

21 A. Correct.

22 Q. And then you oiled it and reassembled it,  
23 correct?

24 A. I would have dried it, in between there, I  
25 would have dried it after the rinsing and then oiled and

1 then reassembled it.

2 Q. All right. And you agree with me that that  
3 changes the condition of the gun from the way it was  
4 when it was brought in, do you not?

5 A. Like Ms. Eudaley stated earlier, it changes the  
6 condition how the parts fit together, not necessarily  
7 the condition of the metal itself.

8 Q. But it wasn't oiled when you -- it wasn't  
9 freshly oiled when you got it as far as you could tell,  
10 was it?

11 A. I mean, we don't really make those observations  
12 of whether or not a firearm is oiled.

13 Q. Could that affect the way the toolmarks are  
14 made if it's oiled or not oiled, the condition of the  
15 gun is in when it's fired?

16 A. If it's -- if it's to the point where the  
17 firearm is stuck together, it's that corroded from lack  
18 of oiling, then yes, there may be some issues. But for  
19 the most part, for the general firearm that comes into  
20 the lab on a daily basis, whether they're heavily oiled  
21 or a little oily, it does not make a difference.

22 Q. All right. When you -- when you took the gun  
23 apart to clean it, you put it back together then --  
24 well, first of all, why did you -- can you tell from  
25 your report, four years after the fact or three and a

1 half years after the fact, can you tell why you thought  
2 it was necessary to take the whole gun apart and put the  
3 whole gun in a bleach solution as opposed to just wiping  
4 whatever it was off the gun?

5 A. I cannot tell the condition of the firearm and  
6 why I made that determination, but I know that I made  
7 that determination because it -- the firearm did pose a  
8 hazard to myself and anyone else who handled that  
9 firearm.

10 Q. And when you took it apart to put it in the  
11 bleach solution, how did you handle it? With your bare  
12 hands?

13 A. No. I am one of the few examiners who would  
14 never handle a firearm without gloves on.

15 Q. So you had gloves on when you took it apart to  
16 decontaminate it, correct?

17 A. Correct.

18 Q. Why don't you just use the gloves the whole  
19 time and skip the decontamination?

20 A. During the firing process, any pathogens that  
21 could be potentially located in that blood can be  
22 aerosolized in the firing process, all that heat, all  
23 that pressure could spread those pathogens throughout  
24 the test-firing room exposing myself and anyone else in  
25 that room to those pathogens.

1 Q. Okay. When you took the gun apart,  
2 decontaminate it and put it back together again, could  
3 you tell whether any of the parts of the gun were broken  
4 or non-functioning?

5 A. I'll have to review my notes.

6 Q. Go ahead.

7 A. Yes, one of the parts, a magazine screen was  
8 broken.

9 Q. Was it like that when you took it apart as far  
10 as you could tell?

11 A. Yes.

12 Q. Can you tell from the documents in the case  
13 file that you have in front of you how long the actual  
14 examination of the gun took excluding the  
15 decontamination and disassembly and reassembly process?

16 A. Do you want hours, minutes?

17 Q. Whatever you can tell from looking at the  
18 documents.

19 A. I examined the firearm on September 28th of  
20 2010, and that was -- my completed examination took  
21 place during that day.

22 Q. So you can't tell how long it took the actual  
23 examination from the documents?

24 A. It took place on that day, within the context  
25 of that day. Any other examinations that occurred

1 outside of 9-28 of 2010 would have been noted as taking  
2 place outside of that date.

3 Q. Well I'm just trying to clarify, you said  
4 earlier that the whole process took less than a day.  
5 And I'm trying to differentiate between the  
6 decontamination process and the actual test-firing  
7 examination process, do you have any recollection or can  
8 you -- do the records reflect -- refresh your memory in  
9 any way as to how long the actual examination process  
10 took?

11 A. As I stated that the -- the decontamination  
12 process took place on September 27th, 2010, and my  
13 examination of the firearm, after it was reassembled  
14 started on September 28th, 2010 and was completed on  
15 September 28th, 2010.

16 Q. Well, what do you work, an eight-hour day?

17 A. Yes.

18 Q. Okay. You can't tell whether it took one hour  
19 versus eight hours?

20 A. No, I cannot.

21 Q. Do you have -- based on what you know about  
22 from reviewing the report, did that refresh your memory  
23 as to this gun and the particular items that you looked  
24 at?

25 A. No, I mean I have the information in front of



1 me.

2 Q. Well you looked at shell casings and you looked  
3 at a couple of bullets and you test-fired the gun and  
4 you took your three test-fires and you -- I assumed you  
5 compared your three test-fires to the casings and to the  
6 bullets, right?

7 A. Yes.

8 Q. Did you look at every -- if you could tell us,  
9 did you use every test-fire in the process or did you  
10 just use one test-fire?

11 A. The way that I conduct my examination is like  
12 Donna Eudaley, I look at my test-fires first, the three  
13 individual test-fires, compare them to each other to  
14 determine if -- the consistency between those test-fires  
15 to determine where are they marking the same and where  
16 is my best consistent area of reproducible marks.

17 Q. Right.

18 A. I then will take that area from one of those  
19 samples and compare those to any evidence or unknown  
20 samples that are submitted to determine if I can -- if I  
21 can tell that they were -- they came from the same  
22 origin, they were fired in the same gun.

23 Q. Now, do you remember or can you refresh your  
24 memory by looking at the report and tell us how many  
25 bullets you looked at to compare to the test-firing

1 bullets?

2 A. There were three bullets submitted in this  
3 particular case.

4 Q. How many casings?

5 A. Nine.

6 Q. Nine?

7 A. Yes.

8 Q. And your work was -- after you wrote your  
9 report, was your work checked by Ms. Eudaley?

10 A. Yes, I went through both a verification process  
11 and through the administrative and technical review  
12 process.

13 Q. Do you remember that -- you actually remember  
14 that happening or were you present when that happened?

15 A. I was -- I was present for part of the  
16 verification process, and then I would have either  
17 physically handed her the folder when my work was  
18 completed or left it on her chair or her desk for  
19 review.

20 Q. What do you remember about being physically  
21 present during the verification process?

22 A. For the initial request to examine the one  
23 item, that would have been done -- with me under the  
24 scope, I would have made my determination, my  
25 conclusion, generated the paperwork and then asked for

1 an available firearms examiner to verify that work so  
2 that we could release the result. Whoever was available  
3 at the time would have volunteered and looked under the  
4 exhibit -- under my microscope.

5 Q. And so would you have already placed the item  
6 in the microscope for viewing and then you would have  
7 found somebody else and said, come over here and take a  
8 look at this, and can you verify my conclusions?

9 A. Yes.

10 Q. Do you tell them before they look what your  
11 conclusion is?

12 A. I try not to, no.

13 Q. Do you sometimes tell them?

14 A. Sometimes it's -- we work very closely together  
15 in cubicles that are right next to each other, we have  
16 paperwork that's spread out. So, preventing an examiner  
17 from seeing that paperwork or overhearing a discussion  
18 I'm having with another examiner is very hard to do in  
19 the limited space that we have. But I'm not like, hey,  
20 come check out this I.D., no, I'm not doing that.

21 Q. I understand. Hey, come here, look, it's a  
22 match.

23 A. No.

24 Q. You're saying you don't do that.

25 A. I'm saying I do not do that.

1 Q. Okay. And do you remember how long Ms. Eudaley  
2 took to do the verification?

3 A. I do not.

4 Q. Do you know how she -- did she look at each and  
5 every item or did she just check, spot check one item?

6 A. She would be required to verify all of my  
7 identification conclusions.

8 Q. And do they do that by independently themselves  
9 looking at each and every item under the microscope or  
10 how is that done?

11 A. She would look at the comparison notes that I  
12 have which lists what item I used on the left side of  
13 the scope, what item I used on the right side of my  
14 scope and what area I was looking at. She would then  
15 set up those same items under the same condition, the  
16 left side and right side or they would already be set up  
17 for her. And she would independently look at, take as  
18 much time as she or another firearm examiner needs  
19 before coming to a conclusion. If her conclusion  
20 matches my conclusion, we come to the same conclusion,  
21 we're then able to release those results, either  
22 preliminary through email or some other line of  
23 communication if it's a priority or through our final  
24 report.

25 Q. All right. Now is it correct that there is no

1 known rate of error as to whether or not you guys are  
2 correct or incorrect in your opinions?

3 A. It would be very difficult to calculate that  
4 rate of error.

5 Q. So there is no -- there is no published rate of  
6 error for firearms examiners as to how often they get it  
7 right or get it wrong.

8 A. Or the -- outside of the studies already  
9 discussed --

10 Q. Right.

11 A. -- in this? Then none that I'm aware of.

12 Q. And those are proficiency studies which are not  
13 designed to detect a rate of error, correct?

14 A. Yes.

15 Q. And do you know that there is a big debate in  
16 the scientific community about whether or not uniqueness  
17 is a valid assumption?

18 A. There are discussions on how the forensic  
19 sciences that rely on uniqueness can improve themselves  
20 and to make their scientists more reliable.

21 Q. There are scientists who do not agree with --  
22 are you aware that there are scientists who do not agree  
23 that uniqueness is a fact?

24 A. It's -- that there are different opinions.

25 Q. Right.

1           A.    Whether or not it's coming from a scientific  
2 community, I -- it could be up for debate.

3           Q.    Well did you read the NAS report like  
4 Ms. Eudaley?

5           A.    Yes, I did.

6           Q.    And there are scientists in there that say that  
7 uniqueness has not been proven correctly, correct?

8           A.    What they have suggested is again, more  
9 research to be performed, just like in any science so  
10 that our theory can stand on firmer ground.

11          Q.    But there's no -- that science -- that  
12 research, additional research has not been completed  
13 yet, has it?

14          A.    Completed, no. But whether it's been ongoing  
15 and published, at least to some extent, I'm not aware of  
16 it.

17          Q.    You're not aware of that.

18          A.    No, I've been out of firearms examinations for  
19 about a little over a year now.

20          Q.    But before you left, nothing has been published  
21 on that giving you a definitive conclusion, right?

22          A.    We have been gaining more publications on  
23 reproducibility of marks, on consecutively manufactured  
24 tests, those things have been published since the NAS  
25 report was released.

1 Q. Can you cite any of those publications?

2 A. No. I do know that one, there was a  
3 three-barrel test performed by the -- I can't remember  
4 the county -- but it was basically out of Miami,  
5 Florida. FIE was the manufacturer, they submitted a  
6 three-barrel test to examiners who -- volunteered  
7 examiners from other laboratories, those three  
8 consecutively manufactured tests, and I did partake in  
9 that testing program and released my results back to the  
10 researchers who were going to publish a paper on that.

11 Q. Do you know if it's been published?

12 A. I do not.

13 Q. Have you ever published anything?

14 A. Yes, I have.

15 Q. What have you published?

16 A. I'm published as a co-author in a research  
17 project for arson investigation and I'm also published  
18 in the AFTE journal for research testing different  
19 substances to prevent hallow point expansion when firing  
20 bullets into a water tank.

21 Q. Is it correct that there is no set standard as  
22 to what it takes to say whether or not you have  
23 determined a match or not?

24 A. No, there is no set standard, as Ms. Eudaley  
25 stated. It is subjective; it is going to vary slightly

1 from examiner to examiner. We all have our own training  
2 and experience as background that help us determine when  
3 we reach the -- our on criteria for identification.

4 MR. DOGGETT: Pass the witness.

5 THE COURT: Let's break for lunch at this  
6 time. We'll resume at 1:30.

7 (Luncheon recess)

8 THE COURT: Thank you, folks, please be  
9 seated. Let's get our witness back up here.

10 MR. HANNA: Judge, the State has no  
11 questions for Mr. Colca.

12 THE COURT: Oh, okay. All right. Very  
13 well, in that case, you're fine, sir.

14 MR. DOGGETT: We don't mind letting him  
15 stand down from the stand. I don't want to hold him  
16 today. But I would like him, without re-subpoenaing  
17 him, I would like him to be on call to return to testify  
18 here in the trial of the merits. So, if he will just  
19 give the telephone number or something to the clerk.

20 THE COURT: Yes, sir. Do you understand  
21 what's being asked? They don't -- rather than  
22 subpoenaing you again and having somebody come bother  
23 you to hand it to you, they have asked that I simply  
24 swear you to return on a telephone call to be a witness  
25 at trial.



1 THE WITNESS: I understand that.

2 THE COURT: Okay. So, you have been  
3 sworn, you were sworn today, and I'm telling you under  
4 that oath that I'm simply ordering you to come back.  
5 How much time -- how much time does it take from the  
6 time you get a call to get down here without breaking  
7 all land speed records?

8 THE WITNESS: Probably two and a half  
9 hours.

10 THE COURT: Okay. We'll give you two and  
11 a half hours notice. Mr. Doggett, can you do that?

12 MR. DOGGETT: We'll even try to beat that  
13 if we can and give him even more notice than that.

14 THE COURT: Okay. Very well. In that  
15 case, you're free to go if you wish or you may stay as  
16 you wish. Okay?

17 MR. DOGGETT: Do we have a way to contact  
18 him? I don't think I do.

19 THE COURT: Yes. If you would, give your  
20 cell number to my bailiff, and that way that gives us a  
21 way to call you.

22 THE WITNESS: Okay.

23 THE COURT: Next witness.

24 MR. DOGGETT: We call Irma Rios.

25 (Witness sworn.)

1 THE COURT: All right. You may proceed  
2 when you're ready.

3 **IRMA RIOS,**

4 having been first duly sworn, testified as follows:

5 **DIRECT EXAMINATION**

6 Q (By Mr. Doggett) State your name for the  
7 record, please, ma'am.

8 A. Irma Rios.

9 Q. And what is your job title?

10 A. I'm the director for the Forensic Analysis  
11 Division for the Houston Forensic Science Center.

12 Q. And is that -- does your directorship include  
13 the firearms section of the Forensic Analysis Section?

14 A. Yes, it does.

15 Q. Okay. And the reason I called you to testify  
16 today was to talk about the issue of trying to get  
17 access to the lab to allow a Defense expert to examine  
18 the evidence.

19 MR. HANNA: I'm going to object, this is  
20 completely outside the scope of a Daubert hearing.

21 MR. DOGGETT: Judge, I just wanted to get  
22 a brief statement on the record about why it happened.  
23 I realize it's not directly on point to the Daubert  
24 issue. But my -- it effects it because my expert was  
25 not able to look at the evidence before he's going to

1 testify today, so I just wanted to get something in the  
2 record about it.

3 MR. HANNA: We can -- Judge, that's  
4 still -- unless she gets a subpoena \*support, you don't  
5 bring people in here because you have a question about  
6 some other issues. It doesn't have anything to do with  
7 the admissibility of the evidence in this case.

8 THE COURT: Well he's trying to make his  
9 record, I'm going to let him make his record. First of  
10 all, I think the inconvenience is not enough, it's  
11 over-shadowed by the importance of him being able to  
12 make a record. So, I'd like you to keep it pretty  
13 limited so --

14 MR. DOGGETT: It will be really short.

15 THE COURT: -- because we're really here  
16 for the Daubert part.

17 MR. FELCMAN: That means Stephen's going  
18 to be a witness, if we're going to have to do that  
19 because we're going to have to reply to the record he's  
20 about to do, and then maybe Mark would have to be a  
21 witness because --

22 THE COURT: Well --

23 MR. FELCMAN: So I mean, that goes way  
24 outside what the purpose of this is.

25 THE COURT: -- I can wait until the

1 Daubert is over and then we'll have this lady wait and  
2 then we'll have her do that at that time separate and  
3 apart.

4 MR. DOGGETT: I was trying to accommodate  
5 her.

6 THE COURT: All he's trying to do is like  
7 interjecting a witness out of line. But I mean, if it's  
8 going to be a problem that's what I'll do. One way or  
9 the other it's going to occur, so it makes sense to do  
10 it right now and get it over with and go on with what  
11 we're here for.

12 MR. HANNA: Okay.

13 THE COURT: Yes, sir, go ahead.

14 Q (By Mr. Doggett) How long have you been a  
15 director of the Forensic Analysis Section of the HFSC?

16 A. Houston Forensic Science Center, since -- just  
17 the last couple of months. I used to be -- well, I was  
18 hired to be the crime lab director for the Houston  
19 Police Department until we transitioned over to the  
20 Houston Forensic Science Center.

21 Q. I see. And how long were you the director of  
22 the crime lab?

23 A. I was employed in October, 2003.

24 Q. So you're one of the carryovers from HPD to the  
25 Houston Forensic Science Center, correct?

1           A.    Yes, I did transition over.

2           Q.    Okay.  Now, recently, last week sometime, did  
3 you receive a copy of an order from Judge Shoemake  
4 directing that the Forensic Science Center give access  
5 to the lab -- to the firearms section of the lab in  
6 order for a John Nixon to come and examine the firearms  
7 evidence in this case and use your lab equipment to look  
8 at the items in question?

9           A.    Yes, we did -- I did receive an order, yes.

10          Q.    Okay.  And it is the position of your lab that  
11 you would not allow Mr. Nixon access to the lab.

12          A.    Yes.

13          Q.    Okay.  And why was that?

14          A.    Based on policy and procedures that we have on  
15 our Quality Assurance Manual which is what we use for  
16 accreditation purposes.

17          Q.    Let me make sure I understood.  Policies and  
18 procedures --

19          A.    In our Quality Assurance Manual as part of our  
20 accreditation process.

21          Q.    And can you tell us specifically where in the  
22 Quality Assurance Manual it says no one else can come  
23 into the lab.

24          A.    It is on Page 69 of 71 on our manual.  It's  
25 laboratory equipment will not be used by any independent

1 analyst or outside expert.

2 Q. All right. And you're relying on that position  
3 that that might jeopardize your accreditation if you  
4 violated that part of your policy manual?

5 A. Yes.

6 Q. Even with the court order directing you to do  
7 it?

8 A. Yes.

9 Q. Okay. And did you communicate that information  
10 to the Fort Bend County District Attorney's Office?

11 A. I did communicate that there was a problem with  
12 entering our facility to use our equipment, yes.

13 Q. Did you have any -- prior to last week when  
14 this issue came up about Mr. Nixon getting access to the  
15 lab -- had you had any communications with the Fort Bend  
16 County District Attorney's Office about this possibility  
17 about somebody coming down from the Defense side, coming  
18 to look at the evidence at the lab?

19 A. Personally, I did not.

20 Q. Are you aware of anybody else in the -- at the  
21 center having those conversations?

22 A. I am not aware of any.

23 Q. Okay. Would there have had -- would there have  
24 been a problem if you had been directed to ship this  
25 evidence to the independent expert for his analysis in

1 another state?

2 A. There is not a problem as long as the proper  
3 chain of custody is maintained.

4 Q. Okay. And in fact, y'all ship evidence all the  
5 time, don't you?

6 A. We do ship evidence, yes.

7 Q. Okay. And how do you maintain the proper chain  
8 of custody?

9 A. We secure it through a proper shipping company.  
10 It could be Federal Express or in person, transportation  
11 of that evidence.

12 Q. Okay.

13 MR. DOGGETT: I pass.

14 THE COURT: All right.

15 **CROSS-EXAMINATION**

16 Q (By Mr. Hanna) Ms. Rios, when was the first  
17 time you became aware of the Defense's desire to have  
18 the evidence examined in your lab?

19 A. Recently, this last week -- or when I received  
20 the order.

21 Q. Okay. Do you remember what date that was?

22 A. I don't know. Right now, no, I don't.

23 Q. Is that the first -- did you not -- you had not  
24 heard or discussed it with anybody prior to receiving  
25 the order?

1           A.    I don't recall. We did have conversations  
2 about an order but I don't recall other than there was  
3 going to be an order.

4           Q.    Okay. So when you received the order was the  
5 first time that you started making any decisions on  
6 whether or not you're going to allow that to happen?

7           A.    Yes.

8           Q.    Okay. And then -- and that order was probably  
9 presented to you last week, you said?

10          A.    I believe so. It was unsigned at first, and  
11 then we had a conversation and then Tom Allen, one of  
12 the attorneys became involved.

13          Q.    Okay.

14                   MR. HANNA: I pass the witness, Your  
15 Honor.

16                   THE COURT: All right.

17                                   **RECROSS-EXAMINATION**

18          Q     (By Mr. Doggett) And what did y'all -- after  
19 you got the order and after you conferred with  
20 Mr. Allen, what have you done with the gun and the  
21 other -- the shell casings and the bullets that were  
22 examined in this particular case. Where are they now?

23          A.    I personally did not do anything with that  
24 evidence. It was my understanding that it was going to  
25 be turned over to the police department to release



1 evidence.

2 Q. Release it to who?

3 A. To the District Attorney's Office.

4 Q. As far as you know, was that done?

5 A. I don't know for a fact what exactly what was  
6 done. I have no personal knowledge of exactly what  
7 happened with it.

8 Q. To your knowledge, can you recollect the -- do  
9 you have any knowledge of anyone from the District  
10 Attorney's Office contacting the lab and asking if it  
11 would be appropriate or okay to ship the evidence to an  
12 independent examiner?

13 A. I don't have a specific recollection of that  
14 conversation. I know we discussed about having another  
15 person look at evidence, like I said, we do release  
16 evidence. We did have that conversation with the  
17 examiner.

18 Q. How long ago was that?

19 A. It would have been last week.

20 Q. Oh, last week. Okay. But nothing before that?

21 A. Nothing before that.

22 Q. All right.

23 MR. DOGGETT: I pass.

24 MR. HANNA: Nothing further, Your Honor.

25 THE COURT: All right. Can this lady go

1 about her business?

2 MR. DOGGETT: Yes, she can be released.

3 THE COURT: Thank you, ma'am. You are  
4 excused and you can go do what -- whatever you want to  
5 do. You can stay if you wish, you can leave if you  
6 wish.

7 THE WITNESS: Okay. Thank you.

8 THE COURT: Now for purposes of the  
9 record, I'd like to have that excluded from the record  
10 of the Daubert hearing, as I heard nothing in it that  
11 had anything to do with Daubert. So, do we have that  
12 agreement?

13 MR. DOGGETT: That's fine. I just wanted  
14 to get in the record about the denial of access by the  
15 lab.

16 THE COURT: I understand and that's why I  
17 let you do that. But I don't want it -- if for some  
18 reason the Daubert hearing is packaged to go up at a  
19 later date, then I don't want that to be part of it  
20 because they'll all be scratching their heads wondering  
21 what we're doing, so.

22 MR. DOGGETT: That's fine as long as it's  
23 part of the record.

24 THE COURT: It may be germane --

25 MR. FELCMAN: We're going to have to

1 expand on it and ask Mr. Doggett why he waited till the  
2 last minute. We can do that later.

3 MR. DOGGETT: I can expand on that, I have  
4 a folder ready to go.

5 MR. FELCMAN: I'm not going to ask that it  
6 be done now, I'm here for Daubert.

7 THE COURT: Let's finish with the Daubert  
8 hearing --

9 MS. SCARDINO: -- do it now.

10 MR. DOGGETT: Okay. We call William  
11 Tobin.

12 THE COURT: Okay.

13 (Witness sworn.)

14 **WILLIAM TOBIN,**

15 having been first duly sworn, testified as follows:

16 **DIRECT EXAMINATION**

17 Q (By Mr. Doggett) State your name for the  
18 record, please, sir.

19 A. I'm William Tobin, T-O-B-I-N.

20 Q. All right. I'm going to hand you --

21 MR. DOGGETT: May I approach, Your Honor?

22 THE COURT: You may.

23 Q (By Mr. Doggett) I'm going to hand you what has  
24 been marked as Defendant's Exhibit No. 1 and ask you to  
25 identify that, please.

1           A.    This is a copy of my most recent curriculum  
2 vitae, C.V.

3           Q.    All right.

4                   MR. DOGGETT:  Your Honor, I move to admit  
5 Defense Exhibit Number One.

6                   MR. HANNA:  Can I look at it first?

7                   MR. DOGGETT:  Well you had one, I saw it.

8                   MR. HANNA:  I want to make sure it's the  
9 same.

10                   MR. DOGGETT:  You want to make sure it's  
11 the same?

12                   MR. HANNA:  I do.

13                   MR. DOGGETT:  Yes, you can look at it.

14                   MR. HANNA:  I have no objection, Your  
15 Honor.

16                   THE COURT:  Defendant's Exhibit 1 is  
17 admitted.

18           Q     (By Mr. Doggett) What is your current  
19 occupation, Mr. Tobin?

20           A.    I'm a forensic metallurgical and material  
21 science consultant in -- for criminal, civil and  
22 non-litigious matters.

23           Q.    All right.  And tell us a little bit -- I don't  
24 want to go through everything that's in your C.V., but  
25 tell us a little bit about your background.

1           A.    I have a Bachelor of Science degree in  
2 metallurgy, which many institutions now change it to  
3 material science, from Case Institute of Technology in  
4 Cleveland, Ohio.

5                    I continued my formal education in  
6 graduate school at Ohio State University, at George  
7 Washington University and the University of Virginia. I  
8 acquired practical experience from my employments with  
9 Chase Brass and Copper Company as a plant metallurgist,  
10 at Monarch Aluminum, and in nuclear research with the  
11 National Aeronautics and Space Administration in  
12 Battelle, B-A-T-T-E-L-L-E, Memorial Institute.

13                   I then spent twenty-seven years as a  
14 special agent in the FBI. I retired as a supervisor as  
15 special agent in 1998.

16                   I was head of the Metallurgy -- Forensic  
17 Metallurgy Operation. I acquired -- sorry, I visited  
18 numerous metal manufacturing and processing plants  
19 throughout the United States and in Taiwan.

20                   And I've been a guest lecturer for most,  
21 if not all, of the professional metallurgical societies  
22 in the United States and in Canada, and I have authored  
23 numerous publications in the field of forensic  
24 metallurgy and material science.

25           Q.    And for dummies like me, tell us what the

1 relationship is between metallurgy and firearms toolmark  
2 identification.

3 A. Metallurgy is the most seminal science -- true  
4 scientific discipline related to the tribological  
5 issues, T-R-I-B-O-L-O-G-I-C-A-L, which derives from  
6 tribology which is the study of friction, lubrication  
7 and wear. That's the most seminal aspect for the  
8 current case at bar. But metallurgy is the most  
9 relevant discipline, all the way from extraction of the  
10 ore in the ground, even through refining processes  
11 through fabrication and forming and finishing processes  
12 and even in ultimate consumer use.

13 Q. Your experience as a plant metallurgist, could  
14 you tell us a little bit more about that, what your  
15 duties were and what that entailed?

16 A. I was responsible for production continuity  
17 primarily but which generally -- the harder production  
18 continuity is generally the tool and dye -- the tool, as  
19 in dye, is used in the forming and shaping operations.  
20 That's pretty much the heart -- or the nerve center of  
21 the operation.

22 Q. And what sort of plant was that?

23 A. It was Chase, Brass and Copper was -- our  
24 products primarily were wire and tubing. And then  
25 Monarch Aluminum Company was a fabricator of aluminum

1 products; products, primarily kitchenware, pots and pans  
2 for example.

3 Q. Did you get your degree after you completed  
4 your service in the Marine Corps or while you were in  
5 the Marine Corps?

6 A. My undergraduate degree was prior to my --  
7 before I went in the Marine Corps.

8 Q. Okay. And how long were you in the Marine's?

9 A. Three years.

10 Q. You served in Vietnam?

11 A. Yes, two years.

12 Q. And then -- when you came back from that, was  
13 that when you started the job as a -- working in the --  
14 as a plant metallurgist?

15 A. No. Actually, I went back to graduate school  
16 at Ohio State University and went back to Battelle  
17 Memorial Institute as a research metallurgist there. So  
18 -- and it was some period of -- it was about six months  
19 after that, when the FBI had indicated that they had  
20 accepted my application, which I never expected to, the  
21 ratio at the time was three hundred to one. So I was  
22 trying to be realistic and went back to graduate school.

23 Q. All right. So in your work at the FBI, you  
24 said you worked in metallurgy; is that correct?

25 A. Yes, forensic metallurgy.

1           Q.    And what were your -- in general terms, what  
2 did that involve?

3           A.    In the simplest terms, it was evaluating the  
4 interactions of solids and fluids; fluids being gases  
5 and liquids in all manners of activities and events,  
6 primarily the traumatic type events involving high  
7 strung rate behavior impacts, violence, shootings,  
8 bombings, plane crashes, train derailments, mine  
9 disasters.

10                            Toward the end, the last nine years, I  
11 believe it was, I was responsible for not only the  
12 technical aspects of the operation but also the  
13 administrative aspects of budgeting the equipment, the  
14 purchases, personnel performance, appraisals and other  
15 activities.

16           Q.    All right.  And you were in charge of the FBI's  
17 Metallurgy Lab; is that a fair way of saying it?

18           A.    I declined in 1986.  When my predecessor  
19 retired, I was offered, on two different occasions the  
20 title of Chief Forensic Metallurgist.  But I really  
21 wanted to stay scientific and technical and I really  
22 loaved administrative work, so I declined the offer.  
23 But as it turns out, it wasn't a smart move, it was like  
24 a fifteen thousand dollar pay scale improvement.  But I  
25 ended up having to do all of the duties, hence the term,



1 de facto chief forensic metallurgist, but didn't  
2 actually get compensated for it, so --

3 THE COURT: Was that a no?

4 MR. FELCMAN: That was a no.

5 THE COURT: Was that a no? I'm not sure.

6 THE WITNESS: I'm not real -- I don't  
7 remember the question.

8 THE COURT: The question was, were you --

9 MR. FELCMAN: Were you the chief  
10 metallurgist.

11 THE COURT: In charge of the labs. Is  
12 that -- wasn't that it?

13 MR. FELCMAN: It's a no.

14 THE COURT: And I'm not sure if I know the  
15 answer to that from what you said, so is it a yes or a  
16 no?

17 THE WITNESS: Well the answer, for the  
18 last -- for the last nine years, yes, the answer was  
19 yes.

20 THE COURT: Okay. Good. Thank you.

21 THE WITNESS: Sorry.

22 Q (By Mr. Doggett) All right. Did you do any  
23 toolmark examinations while you were working as a  
24 metallurgist with the FBI?

25 A. Yes, for twenty-four years.

1 Q. And would that include firearms toolmark  
2 examinations?

3 A. The only time I generally got involved in  
4 toolmarks or relating to firearms was when examiners in  
5 the firearms unit -- firearms toolmarks unit might  
6 encounter difficulties and were looking to explain why  
7 they were seeing what they didn't expect to see or why  
8 they weren't seeing what they expected to see. So, the  
9 only time I really got involved in those is when they  
10 came down to consult with me for special issues.

11 Q. All right. And how often would that occur  
12 where you got involved in consulting on firearms issues  
13 like that?

14 A. Not often, I would say maybe several times a  
15 year, probably, it's just a guess.

16 Q. But you worked with the firearms toolmark  
17 examiners while you were with the FBI?

18 A. Worked with them?

19 Q. Yeah.

20 A. Yes.

21 Q. Were you their supervisor or --

22 A. Oh, no, no, we were in separate units but we  
23 collaborated periodically.

24 Q. Okay. Whenever they had an issue like you were  
25 describing that you might be consulted on.

1           A.    Yes.

2           Q.    All right.

3           A.    Let me amend that, if you don't mind.  There  
4 would be cases where the military, for example, like the  
5 USSI or some other case where they would actually be --  
6 seek our input that did turn out to end up being  
7 toolmarks related issues on -- if you want to call  
8 eight-inch guns or sixteen-inch guns, firearms, but in  
9 armament issues and firearms.

10          Q.    Okay.  And you listed your professional and  
11 scientific organizations that you are a member of in  
12 your -- in Defense Exhibit Number One.  But can you give  
13 us like the top -- the top three that would be pertinent  
14 to this -- what we're talking about today?

15          A.    Oh, that's difficult.  I would say maybe the  
16 Society for Experimental Mechanics, the National  
17 Association of Corrosion Engineers, the American Society  
18 for Testing and Materials, the American Society for  
19 Metals, International.  I need to refresh my  
20 recollection.

21          Q.    That's enough.  Can you -- can you give me some  
22 of the publications, hone in on some of the publications  
23 that you made that relate to firearms toolmark analysis?

24          A.    The very first publication that I co-authored  
25 was relating to toolmarks, and then the last two are the

1 most relevant publications I would indicate and that  
2 would be Number's 18 and 19 on my C.V.

3 Q. All right.

4 MR. DOGGETT: May I approach again?

5 THE COURT: You may.

6 Q (By Mr. Doggett) I'm going to hand you what's  
7 been marked as Defendant's Exhibit 2, is this one of the  
8 publications that you have written that relates directly  
9 to the issue of firearms toolmark analysis?

10 A. Yes.

11 Q. And that was published in when, 2012?

12 A. 2012 or 2013. We submitted it in 2012, but I  
13 don't know if it made the 2013 -- the 12 issues or 13.

14 Q. And where was it published?

15 A. That was published in Law Probability and Risk.

16 Q. All right. Is that a peer-review journal?

17 A. Yes.

18 Q. I'm going to show you Defense Exhibit 3, ask  
19 you if you can identify that?

20 A. This is a copy of my most recent paper  
21 captioned Hypothesis Testing of the Critical Underlying  
22 Premise of Discernable Uniqueness in Firearms Toolmarks  
23 Forensic Practice.

24 Q. And where was that published?

25 A. That was published in Jurimetrics Journal,

1 properly cited as 53 *Jurimetrics, Journal* 121 dash 142,  
2 parenthesis, 2013.

3 Q. All right. And are both -- and that's also a  
4 peer-review journal?

5 A. Yes.

6 Q. All right. Tell me about some of the forensic  
7 science projects that you worked on?

8 A. As far as research goes?

9 Q. Well, let's talk about bullet lead analysis.  
10 Do you know anything about bullet lead analysis?

11 A. Yes.

12 Q. Okay. And what was that?

13 A. That was my second major research into forensic  
14 practices that did not appear, initially, to have any  
15 scientific foundation to it. And that was a forensic  
16 practice wherein it questioned and known thread  
17 materials or bullets couldn't be compared by the  
18 conventional, quote, ballistics examinations.

19 So the second choice -- the second  
20 examination of choice for forensic comparison was, it  
21 was thought that comparing compositions in parts, per  
22 million would provide a chemical, quote, fingerprint of  
23 the item. And that because of the precision of the  
24 analytical instrumentation, that that would be a prima  
25 facia indicator or dispositive of source. In other

1 words, by analyzing and comparing compositions, the  
2 elements in the bullets, that if they were found to be  
3 statistically similar, quote, unquote, they would be  
4 then inferred to be or the opinion would be proffered  
5 that therefore, they must have originated from the same  
6 source.

7 So it was a second level choice  
8 examination for bullets that couldn't be forensically  
9 compared ballistically.

10 Q. And was this a forensic method where they  
11 were -- to cut to the chase, this is where a police  
12 officer or whoever was testifying about this method  
13 would say, I can testify based on this lead bullet  
14 analysis that this bullet came from the same box, the  
15 bullets that we found in the defendant's apartment or  
16 something of that fashion.

17 A. Yes.

18 Q. And that was -- that was a forensic method that  
19 was accepted by courts for a long time, wasn't it?

20 A. Almost four decades, yes.

21 Q. All right. And --

22 A. Three and a half to be more specific.

23 Q. And it was used by the FBI, wasn't it?

24 A. Yes, they were the primary proponent of the  
25 evidence.

1 Q. All right. And is it used any longer by the  
2 FBI?

3 A. No.

4 Q. Why not?

5 A. On September the 1st, 2005, they -- a press  
6 release indicated that they were discontinuing the  
7 operation because -- and as close as I can recall the  
8 exact phrasing, quote, neither scientists nor  
9 manufacturers can determine the probative value of a  
10 claimed match, end quote.

11 Q. And did you have anything to do with the FBI  
12 abandoning that forensic method as a tool of law  
13 enforcement?

14 A. I did, yes.

15 Q. And what was your role in that?

16 A. I was asked by a doctor, a PHD, after --  
17 immediately after I retired to research the process to  
18 see if it had any scientific foundations.

19 Initially, I tried to decline that but --  
20 for a couple of reasons, but eventually I undertook and  
21 commissioned the first research team. And we looked  
22 into the underlying premises that are biological  
23 necessity required to be valid for the practice to have  
24 probative value and be of value. And we were quite  
25 stunned at what we found. So, I guess you could -- I've

1 been called the architecture of the pioneer of that  
2 particular research project. That was our first  
3 research.

4 The second related to probative value of  
5 availability in the commercial market, in other words,  
6 distribution availability, what's the probative value of  
7 a claimed match as indicia of guilt or innocence used in  
8 that regard. That was the second major research  
9 project, and we published our results in both of those  
10 research projects.

11 Q. As a result of that, that forty-year forensic  
12 tool that was used to convict people and put them in  
13 prison was abandoned.

14 A. That's correct.

15 Q. All right. Did you also do some forensic work  
16 in the area of arson and firearm investigation?

17 A. Yes, I did.

18 Q. And you're not an arson and fire investigator,  
19 are you?

20 A. No. I had examined -- investigated hundreds of  
21 them but I wasn't a, quote, certified fire investigator,  
22 no.

23 Q. But you were asked to consult as a metallurgist  
24 to review some of the science that was being used in  
25 arson cases, correct?



1           A.    Yes.

2           Q.    And what was the result of that work that you  
3 did?

4           A.    My research eventually concluded -- confirmed  
5 that a practice that had been admitted for several  
6 decades, certain indicia of whether an accelerate or a  
7 long slow smoldering fire, such as from a smoldering  
8 cigarette could have caused the fire. It turned out to  
9 be junk science and it was eventually abandoned. And my  
10 research now is part of the handouts by the National  
11 Firearm Administration, I believe is the name of the  
12 organization.

13          Q.    All right. Now, I want to jump to kind of a  
14 side issue. There was some testimony today that --

15                   THE COURT: Hold it just a minute, I'm  
16 sorry, I apologize.

17                   MR. DOGGETT: That's all right.

18                   (Discussion off the record.)

19          Q     (By Mr. Doggett) Anyway, you talked about the  
20 journals you published ended up being peer-reviewed, and  
21 I assume that involved something similar to what  
22 Ms. Eudaley testified about things being submitted in  
23 advance and reviewed. Now, you know who AFTE is, right?  
24 You know what AFTE is, right?

25          A.    Yes.

1 Q. And does -- is AFTE a peer-reviewed journal in  
2 the same sense as the journals that you published in?

3 A. No.

4 Q. Why is it not, why is it different?

5 A. In the true scientific community, we use what's  
6 called refereeing which is a more rigorous peer-review.  
7 Refereeing, for example, when I submit the manuscripts  
8 to the editor, my name is redacted. It's submitted to  
9 three anonymous scientists in the mainstream or true  
10 scientific community. They critique the manuscript,  
11 they submit their critique back to the editor, their  
12 name is then redacted from that critique and that  
13 critique is sent to me as the author. And then it's up  
14 to me to accept or reject the suggestions in the  
15 critique. That is the best blind peer-reviewing -- and  
16 we call that refereeing. Peer-reviewing is ruffed -- as  
17 generally used is ruffed with potential biases and is  
18 not the most rigorous review of submitted manuscripts.

19 Q. So the blind part of that is what we consider  
20 to be pretty important, the fact that they don't know  
21 who you are and you don't know who they are.

22 A. Correct.

23 Q. Does AFTE do it the same way, is theirs done by  
24 a blind peer-review or do you know?

25 A. AFTE is a very insular community. And to my

1 knowledge, the papers are not submitted outside the  
2 community of firearms examiners generally to be  
3 refereed. So I can't -- I'm not an AFTE member so I  
4 can't personally speak to -- but I'm not aware that they  
5 use the refereeing process as it is used in the  
6 scientific arena.

7 Q. What is an index journal, what does that term  
8 mean?

9 A. An index journal is part of the web of  
10 knowledge. It's an ISI function. And ISI is the  
11 Institute for Scientific Information, which is a proxy  
12 for the scientific importance or contribution to the  
13 scientific community as a particular journal and  
14 they're -- and authors as well, by the way -- they're  
15 given what are known as impact factors.

16 So in other words, the scientific  
17 community can gauge the significance or the importance  
18 of particular journals or media to their particular  
19 professional domain.

20 Q. Now are the two journals that you mentioned  
21 that you published in, are they index journals?

22 A. Yes, I believe they both are.

23 Q. All right. What about the AFTE publication or  
24 whatever it's called, is it an index journal?

25 A. No.

1 Q. Have you testified before on firearms  
2 ballistics issues as an expert?

3 A. Yes.

4 Q. How many times?

5 A. In -- oh, the firearms would be thirteen times,  
6 I believe was the last count I had on firearms toolmarks  
7 issues.

8 Q. All right. And what states -- just, is  
9 multiple states?

10 A. Multiple states, D.C., Florida, Texas -- and I  
11 believe Texas is there, too. I've testified in Texas --  
12 ten times in Texas but I'm not -- I don't remember how  
13 many firearms issues in Texas.

14 Q. All right. Now you've had the opportunity to  
15 be present in the courtroom and hear Ms. Eudaley's  
16 testimony and Mr. Colca's testimony and Ms. Rios,  
17 correct?

18 A. Yes.

19 Q. Okay.

20 MR. DOGGETT: Is the slide deal working on  
21 the Power Point?

22 MR. PHILLIPS: This one looks like  
23 pictures. There we go.

24 Q (By Mr. Doggett) It is the -- no, that's not  
25 it.

1           A.    And it should say trial final, I believe.  You  
2 might need to expand the first column so you can see the  
3 remainder of the file names.

4                   MR. PHILLIPS:  Oh, okay.

5                   THE WITNESS:  I prefer the PPTX, if you  
6 can.

7                   MR. PHILLIPS:  Which one?

8                   THE WITNESS:  The one that has the file  
9 extension, PPTX, assuming this computer can handle --

10                   MR. PHILLIPS:  Well, this one doesn't show  
11 what the --

12                   THE WITNESS:  Oh, it doesn't show the file  
13 extension.  Then go ahead and use the PDF version so the  
14 text is formatting the remaining -- there you go.  It  
15 will be the second file, the trial final and it shows  
16 PDF file.  There you go.

17           Q        (By Mr. Doggett)  There you go.  That's your  
18 slide show you prepared for us?

19           A.    It is, but actually the more I think about it,  
20 you want it for the full screen.  That doesn't give  
21 me -- you may have to go back and use the PPTX version.

22                   MR. DOGGETT:  Well, can everybody that  
23 needs to see it, see it like it is or do we need to go  
24 to full screen?

25                   THE COURT:  I can see it.

1 MR. DOGGETT: Okay. You can skip over  
2 that one.

3 Q (By Mr. Doggett) Okay. When a firearms  
4 examiner is looking at something, trying to determine  
5 whether or not a particular gun fired a projectile or  
6 fired a casing, a bullet casing, this is what they look  
7 at, right?

8 A. Yes, striations and impressions generally.

9 Q. And striations are what? The little lines that  
10 you see on the -- on the picture, and then the  
11 impression would be like a firing pin mark, is that a  
12 good, quick summary?

13 A. Yes.

14 Q. Okay. Ms. Eudaley already told the Judge what  
15 class characteristics are. Was she right in that about  
16 the way she defined it?

17 A. Yes.

18 Q. Okay. And then subclass is something you might  
19 see on a bullet or a casing that would be what? Why do  
20 you call it subclass?

21 A. The overview is, the class characteristics are  
22 designed into the item, subclass are fortuitously  
23 transferred to the item typically from manufacturing.  
24 In other words, it's -- they're not designed into the  
25 item but they just, coincidentally because of the

1 fabrication process are transferred to the work piece.

2 Q. And to give an example, something specific that  
3 would relate to firearms toolmark identification, that  
4 would be a subclass item.

5 A. Well, for example, the -- in a broaching  
6 process of forming the barrels of a firearm, the  
7 broaching tool will typically transfer characteristics  
8 to the barrel as it's being fabricated, and then that  
9 barrel will transfer characteristics to a thread  
10 material for a projectile or a bullet.

11 Q. All right. And individual --

12 A. -- Individual characteristics are, by  
13 definition are -- and there's a reason for that caveat,  
14 are unique to one particular item; and by definition in  
15 AFTE, individual characteristics would be unique to that  
16 item.

17 Q. All right. That's a picture of the comparison  
18 microscope, right?

19 A. Yes.

20 Q. They put one bullet on one side and one bullet  
21 on the other, and they try to compare them, right?

22 A. That's correct. The images that may typically  
23 be seen are shown on the right-hand side of this  
24 particular slide. There's a split screen image where  
25 the questioning sample is on one side and the known

1 sample is on the other side, and they're able to be  
2 directly compared as demonstrated.

3 Q. On the far right-hand side of that slide where  
4 it looks like the back of something, what is that  
5 showing a picture of?

6 A. On the right-hand side -- on the upper photo  
7 would be a close up view of the breech face -- of the  
8 cartridge after it's been fired of breech face  
9 impressions and striations and actually some firing pin  
10 on the right.

11 Q. All right. And is there any significance to  
12 those two photos or are they just examples of what you  
13 would look at?

14 A. They're just examples of what one might see  
15 using a comparison microscope.

16 Q. Okay. Now, this slide is kind of an AFTE  
17 theory of identification. Is this a quote from the AFTE  
18 materials about what their theory of identification is?

19 A. Yes. This is the primary substance of the  
20 underlying guideline used by the AFTE community to make  
21 their associations.

22 Q. And is this what most toolmark -- or firearms  
23 analysts use when they try to determine if there's an  
24 identification or exclusion of a particular weapon as  
25 being the weapon that fired a bullet?



1           A.    Yes.

2           Q.    All right.  Tell the Judge what, in your  
3 opinion is the problem with the AFTE theory of  
4 identification as it relates to science -- or problems,  
5 maybe I should say.

6           A.    Thank you.  This is -- problems are pervasive  
7 in this document or this -- these excerpts.  This  
8 does -- first, does not constitute a scientific protocol  
9 for numerous reasons, there are about five reasons.  But  
10 what I have done is this AFTE theory of identification  
11 is highlighted nonscientific terms that are vague,  
12 vacuous, ambiguous.  It's -- some of the flaws in this  
13 theory of identification is, is that it uses circular  
14 logic -- and I'll use an analogy of baking a cake here  
15 shortly.  But it also exhibits what are known as  
16 fallacies of presumptions.  And fallacy of presumption  
17 is basically premises that presume what they purport to  
18 prove.

19          Q.    And what do they presume that they purport to  
20 prove?

21          A.    I'm sorry?

22          Q.    What do they presume that they are purporting  
23 to prove?

24          A.    Well first presumption here.  And there's  
25 several is what's known as suppression of evidence --

1 suppression of evidence and false dichotomy. But in  
2 this case, for example, this starts out by presuming  
3 uniqueness, presuming an underlying premise of  
4 uniqueness. And the colored words in here are, for  
5 example, what is sufficient? Well sufficient is going  
6 to vary between -- what you might consider sufficient  
7 might be insufficient as far as I'm concerned and vice  
8 versa. It's a very general term. This does not  
9 constitute a scientific protocol.

10 Q. Well, surely, they go further than just this  
11 paragraph here. Don't they have standards to tell you  
12 what is sufficient and what's not sufficient?

13 A. No.

14 Q. No?

15 A. No. And the most salient flaw in this, with  
16 regard to scientific protocol is scientific theory must  
17 exhibit what's known as falsifiability, has to have  
18 refutability for it to be a proper scientific theory.  
19 Refutability -- I'm sorry, falsifiability is the ability  
20 to disprove the premise. And typically in the  
21 scientific arena, you don't establish a theory to be  
22 what you want to prove as the theory, you create what's  
23 known as a null hypothesis and you try your darndest to  
24 prove the null hypothesis. But let's -- if I can, just  
25 give you an example of why this is an inadequate -- it's

1 not even a protocol, I'll say guideline. Let's say  
2 we're making a cake; and the circular logic that is  
3 exhibited by this AFTE theory of identification, this  
4 says that if you have sufficient agreement, then you can  
5 declare an identification; and then it later goes to  
6 show that you have an identification if the items  
7 exhibit sufficient agreement. And in the cake baking  
8 analogy, it would be tantamount to saying, if you have  
9 the right ingredients, you can make a cake; and you can  
10 make a cake if you have the right ingredients. And so  
11 that's one of the numerous flaws exhibited by this  
12 theory of identification. It's vague, it's subjective,  
13 and the NAS has confirmed it does not present a defined  
14 pattern of process that can be used. And the two most  
15 critical cornerstones of the scientific method are  
16 repeatability and reproducibility.

17 Q. And what is repeatability?

18 A. It does not allow for that. Repeatability is  
19 the condition by which an experimenter, himself or  
20 herself, can repeat their own experiment and obtain the  
21 same results. Reproducibility, in the scientific domain  
22 is the property of allowing an external or a different  
23 experimenter to reproduce the results of the original  
24 experiment, in other words, to conduct the experiment  
25 again and to reproduce the results. And as, again

1 confirmed by the National Academy of Sciences, this  
2 guidelines does not allow for two critical cornerstones  
3 of the scientific method.

4 Q. The National Academy of Sciences has not --  
5 it's not just you that's being critical of the AFTE  
6 methodology or standards, the National Academy of  
7 Sciences has also issued reports that are critical for  
8 the reasons you've just stated.

9 A. That's correct.

10 Q. I have --

11 MR. DOGGETT: For the record, this would  
12 be marked Exhibit 5 and 6. May I approach, Judge?

13 THE COURT: Yes, sir, you may.

14 Q. (BY MR. DOGGETT) I'm going to hand you Defense  
15 Exhibit 4 which is the -- do you recognize that as being  
16 the Toolmark and Firearms Identification excerpt from  
17 the 2009 NAS report?

18 A. I do, yes.

19 Q. All right. And then Exhibit's 5 and 6, do you  
20 recognize that as being the 2008 NAS Ballistic Imaging  
21 Report?

22 A. Yes.

23 MR. DOGGETT: Judge, I move to admit -- if  
24 I hadn't already moved it, just for purposes of this  
25 hearing, one through six, if I haven't already -- I know

1 I moved on one but I can't remember if I did two through  
2 six.

3 THE COURT: You haven't.

4 MR. HANNA: Does he have two through six?

5 MR. DOGGETT: He does.

6 MR. HANNA: What's the difference between  
7 five and six?

8 MR. DOGGETT: It's the same report, it's  
9 just so thick, I couldn't get one binder clip around it.

10 MR. HANNA: Okay. No objection, Your  
11 Honor.

12 THE COURT: All right. I'm going to call  
13 this Defendant's Daubert 2, 3, 4, 5 and 6, along with  
14 one that was previously admitted, are admitted.

15 Q (By Mr. Doggett) What is this -- I heard  
16 Ms. Eudaley, I think talking about a non match. Can you  
17 tell the Judge what your understanding is about AFTE's  
18 non match criteria?

19 A. As the slide indicates, it requires an examiner  
20 to try to recall interspatial relationships of these,  
21 let's just say, striations, that they can recall from  
22 the past -- from prior examinations, which I think I've  
23 indicated in one or more of my papers, it requires a  
24 super-human effort to recall -- the simplest geometric  
25 form is a line, and to try to recall the interspatial

1 relationships of hundreds of thousands, if not millions  
2 of prior images that they have seen during their  
3 matches. So, as indicated on the slide here, they're  
4 told to think back on the best matching, known non-match  
5 that they can remember, which puts it in the --  
6 virtually a hundred percent subjective mode.

7           And this is one of the primary -- of the  
8 five reasons why the practice is not considered a  
9 science. There is no science that allows for a  
10 hundred percent subjective input. And based on training  
11 and experience, there is no science that allows for that  
12 as the determinant of an inference.

13         Q. All right. You talked about this, problems  
14 with the AFTE theory identification. There's no  
15 articulated protocol, meaning they don't tell you how  
16 many lines have to match or that there really is no  
17 standard written down anywhere, any place that tells you  
18 what you have to do to declare an identification or a  
19 match.

20         A. That's a good overview -- a lay overview of it,  
21 what we would characterize it -- and I've indicated I  
22 believe in one or more of my papers, is that there are  
23 no parameters of detection specified. And there are  
24 then also no rate -- no process of application of any  
25 rates of parameters. So in other words, there are no

1 metrics or indicia of detection and then there are no  
2 rules for application of any such. So they're missing  
3 two critical characteristics required in a -- of the  
4 scientific practice.

5 Q. All right --

6 A. -- I'm sorry; I didn't realize --

7 Q. You've got no parameters of detection, in other  
8 words, of application. All right. What's the problem  
9 with subclass versus individual?

10 A. Subclass versus individual is one of the two  
11 900 pound gorillas in the room. What the practice  
12 requires is that a forensic examiner be able to look at  
13 a -- some characteristics, let's just say striations,  
14 and decide, are those individual characteristics or they  
15 characteristics that actually derive from manufacturing  
16 called subclass carryover.

17 And one of the major problems that the NAS  
18 and my colleagues and I have is there are no literature  
19 reviews, no papers, indicating how an examiner is to  
20 discern subclass characteristics from purportedly  
21 individual characteristics.

22 Prior to 1989, the field did not even  
23 recognize the existence of subclass characteristics in  
24 any of their documents or official rules and  
25 regulations.

1                   They finally memorialized in 1989 that,  
2   hey, you better start looking for the possibility of  
3   subclass carryover which -- in subclass carryover, the  
4   importance of that is that manufacturing characteristics  
5   that do carryover could belong to a very unknown or even  
6   a very large lot of similar products. And I think the  
7   key issue that needs to be under focus in this  
8   particular practice is they make their identifications  
9   based on a few similarities or a handful of similarities  
10   in many, if not, most cases. They rationalize away all  
11   of the dissimilarities. And there is no other forensic  
12   practice -- let's just say bullet lead, for example;  
13   bullet comparisons used the single dissimilarity rule to  
14   exclude items. For example, when they were comparing  
15   the antimony, bismuth, arsenic or other elemental  
16   constituents of bullet lead. If any one of those  
17   indicia or metrics were found to be dissimilar, the  
18   examiner would then eliminate or exclude that item as a  
19   possible match. The field of firearms toolmarks  
20   examiners -- examinations do not use the single  
21   dissimilarity rule, so that dramatically increases the  
22   possibility of misattributions or errors. So in other  
23   words, what they're focusing on is a subset, a few in  
24   many cases, similarities and rationalizing away all of  
25   the dissimilarities. And in fact, one of the studies



1 has shown that it's not uncommon for items to exhibit  
2 more dissimilarities than similarities.

3 Q. That have been identified as a match?

4 A. That have been identified as a match. And in  
5 one particular study, one of the problems with the lack  
6 of parameters and detection and overrules of  
7 applications, they ask examiners, are these, quote,  
8 matches or not matches. They would render their  
9 opinions, but then those examiners were then asked which  
10 characteristics did you use to form your match. And one  
11 of the studies showed fifty-one percent disagreement up  
12 to thirty-one lines as to whether they matched or not.  
13 In other words, the examiners might have agreed -- it's  
14 called a type three error, but might have agreed that  
15 this was a match, but they disagree as to what formed  
16 the match, what caused -- what allowed them to opine  
17 that it was a match.

18 Q. What are you talking about here on this line?

19 A. That's the general opinion of the true  
20 scientific community. It's -- the practice -- forensic  
21 practice of firearms toolmarks is considered a  
22 fallacy -- individualization, rather, is considered a  
23 fallacy, and generally characterized as what's known as  
24 pathological science.

25 Pathological science was a term coined in

1 1953 by a nobel laureate at the Atomic -- Knolls Atomic  
2 Laboratory. And pathological science is a process by  
3 which an experimenter is exhibiting wishful thinking,  
4 self deceptions and some other characteristics. So it's  
5 not to indicate any nefarious attempts, but rather  
6 they're misleading themselves in interpreting their  
7 results.

8 Q. What are you talking about on here when you say  
9 probability of matching evidence came from the same  
10 batch source versus this bottom one that says came from  
11 a different batch source?

12 A. Well, that's actually -- this presentation  
13 wasn't customized for this proceeding, so that's a  
14 statistical set of issues that relates to what's called  
15 the likelihood ratio.

16 Q. Skip over.

17 A. It's very, statistically, complex.

18 Q. I'm going to skip over this, and in the  
19 interest of time, do you need to talk about it or not?

20 A. I would just say with this that their  
21 experimentations, the scores and scores of these  
22 purported validation studies do not comport to the  
23 scientific method for many reasons, so I'm just  
24 outlining what the scientific method is here, so I'd say  
25 let's go ahead and skip it.

1 Q. All right. What's wrong with their validation  
2 studies -- who did the validation studies?

3 A. The various firearm toolmark examiners have  
4 done this.

5 Q. Primarily AFTE?

6 A. Yes.

7 Q. What are examples of what's wrong with the  
8 validation studies from a scientific point of view?

9 A. That's the subject of one -- my next to my last  
10 paper, primarily. We point out the flaws, there are so  
11 many flaws that -- the general flaws are that the  
12 purported validation studies do not mirror real world  
13 cases, they don't mimic real world case work. They're  
14 not blind or -- I'm sorry, they're not double blind or  
15 even blind. They're typically pristine samples that are  
16 even prescreened to make sure they are -- have  
17 demonstrative characteristics on there.

18 And then there are many other problems  
19 with it. But the most glaring issue, from a scientific  
20 perspective is they are used to form what are known as  
21 inductive inferences as opposed to deductive inference.  
22 And that is a critical issue for the particular case at  
23 bar and the other situations where examiners are opining  
24 to some reasonable degree of ballistic certainly,  
25 practical certainty or -- and the difference is, if I

1 can just put it in lay language is, during one my  
2 congressional testimonies, I've indicated, for example,  
3 deductive logics would be where, if the experimenter can  
4 sample the entire -- all samples in the possible sample  
5 pool, then one can properly use deductive logic.

6           And the example I used on Capital Hill was  
7 the Blue Chevy Nova that I'm told by Senator Bradford  
8 that they still use it to this day -- if one knows that  
9 all Chevy Novas that were ever made were Blue and one  
10 finds a vehicle emblem at a -- let's say, the scene of a  
11 bombing that says Chevy Nova. One can properly deduce  
12 that the vehicle must have been blue, that's deductive  
13 inference.

14           Now, that doesn't mean all blue cars are  
15 Chevy Novas, that's another issue. But one can properly  
16 deduce that all -- that the vehicle was blue.

17           Inductive inference, however is the only  
18 available process in logic that can be used when the  
19 experimenter cannot test the entire sample pool. That  
20 is the case with firearms. It's not feasible or  
21 plausible that firearms examiners can sample the entire  
22 possible sample pool. So therefore, they must use a  
23 process of inference called inductive logic.

24           But that is very riddled with potential  
25 flaws and vulnerabilities. Inductive inference is used

1 everyday by people. For example, let's say you need a  
2 pair of shoes, you bought three or four pairs of shoes  
3 from Payless Shoes. And so you reason that, well,  
4 they've worn well in the past, this company's been good,  
5 I'm going to buy my next pair of shoes from Payless,  
6 that's in-acceptable use of inductive logic.

7 But in the scientific arena, inductive  
8 inferences must be appended by a confidence interval or  
9 a probabilistic statement of certainty that is founded.

10 What the NAS 2009 --

11 Q. Well, don't they do that by -- Ms. Eudaley  
12 said, I can say, to a practical certainty, that this is  
13 the same gun that fired these bullets and fired these  
14 shell casings; is that something she's doing?

15 A. No, sir, that is scientifically objectionable  
16 and unacceptable. That is a vacuous statement; an *ipse*  
17 *dixit* that has no scientific foundation for that type of  
18 a statement.

19 What the NAS 2009 basically said was,  
20 there is no forensic practice, other than DNA, that uses  
21 the proper -- the inference process. And it can be  
22 seen, for example, if anyone has seen Maury Povich or  
23 one of those TV shows, where they say that so and so was  
24 found to be the father or the blood samples' DNA match  
25 to a 95.7 percent, that is a proper use of inductive

1 logic. And as the NAS report points out in 2009,  
2 there's only one forensic practice that is properly  
3 employing inductive logic and that's the DNA. So they  
4 have basically said there is no other forensic practice  
5 that has currently shown to be able to scientifically  
6 make specific source attributions or individualizations.  
7 That's the different -- and if I would, one last color  
8 comment here. To show the vulnerability of inductive  
9 logic when used in the courtroom, a judicial setting,  
10 and particularly with firearms toolmarks issues -- you  
11 know what -- actually I think I have a slide for this.  
12 Do you want me to cover the Texas -- the guns in Texas?

13 Q. Do you want me to keep going?

14 A. Sorry, I didn't -- yeah, go ahead, keep going.

15 Q. I think you've already talked about that.

16 A. Yes. Okay. We can stop here, if you would.

17 One can never, quote, prove an inductive hypothesis by  
18 what's known as simple enumeration; or in this case, we  
19 can call it sample enumeration, it's the same thing.  
20 And what that means is an accumulation of positive  
21 instances. No matter how many combinations of firearms  
22 an examiner might try to test to, quote, prove the  
23 hypothesis of uniqueness, or even let's say in a  
24 specific case that there's a match, it is not  
25 scientifically possible. And I think the next slide

1 shows the guns in Texas -- oh here, we go.

2 To show the folly of trying to quote,  
3 prove, end quotes, inductive hypothesis. Let's assume,  
4 hypothetically, there are a hundred thousand guns in  
5 Fort Bend and maybe Harris County. Let's say that of  
6 those hundred thousand guns that are available, there  
7 are one hundred pairs that have confusingly similar  
8 striations, and let's also say that there are one  
9 hundred firearms examiners in the police department or  
10 in a crime laboratory, and every one of those firearms  
11 examiners conducts ten pairwise examinations per day for  
12 the next ten years of their life including weekends, at  
13 the end of 3.65 million comparisons, there is still a  
14 ninety-three percent chance that none of those hundred  
15 guns were ever compared. That is -- it demonstrates the  
16 folly of simple enumeration in the use of inductive  
17 logic. So for an examiner to opine a match, there is no  
18 scientific validation; and to opine it to some vacuous  
19 degree of certainty that they could have come from --  
20 that they were fired from the same gun is without  
21 scientific foundation.

22 Q. All right. You've already covered all of that.

23 A. Yes.

24 Q. Is this the AFTE critique again or the AFTE  
25 standards?

1           A.    Yes, this is basically saying that there's no  
2 rules governing what's to be considered the same and  
3 what's considered to be different.

4           Q.    All right.

5           A.    Okay. Do you want to hold it here a second? I  
6 also conducted a personal experiment to demonstrate one  
7 of the issues in these types of examinations. My  
8 working hypothesis was that one -- for example, let's  
9 say we're looking at firing pins. You're talking very  
10 tiny surface areas. My working hypothesis was, there  
11 are only so much space in order, where one can -- let's  
12 say, you manually place striations or lines on that  
13 surface area, there's only so many combinations in so  
14 much space that one can use to have striations.  
15 Therefore that suggests -- before my experiment, a  
16 priority, that there would be a certain likelihood of  
17 coincidental matches in such a tiny space. So I  
18 performed an experiment -- and my wife works at Cracker  
19 Barrel -- and I noticed you happen to have one right up  
20 the street here -- she's on the retail side. So I asked  
21 her, I said, please give me several hundred UPC or bar  
22 codes from your different products. And I then asked  
23 her, do you all put marketing information in your bar  
24 codes. And she said, no, we don't. For example, let's  
25 say you buy something at Wal-Mart, you can take it back,



1 they know that you bought it from Wal-mart and/or even  
2 which store you bought it. But she says, no, we don't  
3 put any marketing demographics in our bar codes. But  
4 just to be scientifically accurate, what I decided to  
5 do, when I put them both -- I just randomly selected two  
6 products that were totally unrelated, put the UPC's next  
7 to each other under a microscope; but to moot out the  
8 possibility that she was wrong about the marketing  
9 information, I turned one of the UPC symbol stickers  
10 upside down and I then compared them. Now, in many  
11 cases that I work, examiners typically -- I've seen  
12 three lines, four lines, six lines -- on the West Coast,  
13 under the CMS process, they only require six, two sets  
14 of threes or six consecutive matching stria before they  
15 will declare an ident or a match.

16 So I've seen three, four, five, six on  
17 purported matches. So, to see what the chance was of  
18 coincidental matches of the most simple geometric form  
19 on a very small finite surface area, this is what I  
20 saw -- you can go ahead -- under the microscope -- the  
21 split screen, down the middle, separates the two UPC's.  
22 And let's count -- I'll have to do it with my --

23 THE WITNESS: Oh, can I write on the  
24 screen, Your Honor?

25 THE COURT: Sure.

1           A.    Let's count the number of coincidental matches  
2 here. Let's say one -- whoops -- okay. Two, three,  
3 arguably four, we'll talk about the arguably; five,  
4 arguably six, arguably seven, arguably eight, nine, ten,  
5 eleven, twelve, thirteen, arguably fourteen, arguably  
6 fifteen, sixteen, seventeen, eighteen and nineteen.

7 Just in this experiment, we're showing already nineteen  
8 characteristics that would be probably declared to be  
9 similar. Now, what's the arguably that I discussed? A  
10 decision needs to be made by the evaluator, is a fat  
11 line and a thin line a match or a non match. So in  
12 other words, there is now required a judgment call to --  
13 some examiner might declare these -- how do I eliminate?

14                   THE COURT: Touch the right corner and the  
15 left corner, left corner.

16                   THE WITNESS: Oh, thank you.

17           A.    So, some examiner might declare, let's just --  
18 might say that this one, for example, is not a match;  
19 other examiners might say it is a match. So the quality  
20 of the lines themselves have to be subjectively assessed  
21 as to whether that's a match or not.

22           Q.    (BY MR. DOGGETT) But the point of all this was  
23 that we just took these bar codes and matched them and  
24 you had a bunch of random matches.

25           A.    Yes.

1 Q. And they came from different bar codes.

2 A. Yes.

3 Q. And basically, you're extrapolating that  
4 same -- the same thing can happen with bullets.

5 A. Well, yes. And I'm using this to demonstrate  
6 that there is a -- on a finite surface area, there is a  
7 probability of coincidental matches.

8 Q. All right. What's the difference in this  
9 photo?

10 A. This particular -- these are two photos that  
11 were presented in the AFTE literature to firearms  
12 examiners -- the split screen again in the middle -- of  
13 comparing two cartridge cases. And the caveat to  
14 examiners was look at the significant degree of  
15 concordance in these characteristics. And in -- it  
16 would be very easy, as the NAS has pointed out to  
17 confuse these and declare this -- these to be a match,  
18 when in fact --

19 Q. It looks like a match to me, the lines seem to  
20 line up. Is it a match or not?

21 MR. FELCMAN: We'll stipulate it's a  
22 match. I know what he's talking about.

23 A. That's the issue is this -- from my purposes,  
24 looking at this from a -- my twenty-four years of doing  
25 this -- this could very easily be declared a, quote,

1 match, when --

2 Q. (BY MR. DOGGETT) Was it a match or not?

3 A. No, they were known to have been fired from two  
4 different firearms. I believe that NAS may have even  
5 cited this as well as when I was -- I believe they may  
6 have cited it as well.

7 Q. All right. Do we need to talk about this or  
8 move on?

9 A. No, we covered all this. The only -- I think  
10 significant part of this slide would be the first bullet  
11 point. To this day, there's still no working  
12 methodology for distinguishing individual from subclass  
13 characteristics. I've actually had firearms examiners,  
14 through the years, kind of whisper in my ear. We just  
15 presume everything we see are individual  
16 characteristics. I'm not meaning from the FBI, I'm  
17 talking about from crime labs.

18 We can move on -- oh, I've already  
19 discussed this. This is one of the studies from Miller  
20 that shows -- and this supports my earlier comment that  
21 it's not uncommon that bullets or cartridge cases will  
22 actually show more characteristics of this similarity  
23 than those that were similar.

24 Oh, the second bullet point is critical,  
25 and that refers to what is known as the A-B-1717 study.

1 And this surprised experimenters. But what they were  
2 developing was a federal database like NIBIN or IBIS  
3 even at the time. What they were surprised at, it  
4 shouldn't have surprised -- it wouldn't be a surprise in  
5 the scientific community, but what the experimenters  
6 were surprised at is, as they would enter known matches,  
7 in other words, they would test-fire bullets or  
8 cartridge cases and enter the images into the database.  
9 Then when they were cued or when they were queried, the  
10 system would spit out information as to the top ten or  
11 fifteen, depending on the number they wanted, most  
12 likely matches. But what they were surprised at was the  
13 more data that got entered, the more irrelevant hits  
14 were resulted to the point where the position of known  
15 candidacy was degraded as more and more data were  
16 entered, such that the known firings didn't even show up  
17 in the top fifteen most likely candidates. Does that  
18 make sense? Do I need to rephrase that?

19 Q. You're saying that they have known something  
20 they knew was fired by the same gun --

21 A. Correct.

22 Q. -- that should have shown up in the database as  
23 a match and it wasn't showing up in the database, other  
24 things were showing up.

25 A. Correct. If you run the same sample over a

1 longer period of time, or Delta T as we would say, early  
2 on, the known source would show up in the top -- in the  
3 top ten or fifteen levels of candidacy. But over a  
4 longer period of time, when you start entering more and  
5 more firearms or bullets or cartridge case images into  
6 there, the known one didn't even show up in the top ten  
7 or fifteen.

8 Q. Is this a NIBIN system you're talking about or  
9 some other study?

10 A. I don't know which -- remember which study it  
11 was. The study is known as the AB1717, the author was  
12 DeKinder, but I don't remember which database they used.  
13 I believe it might have been, but maybe not.

14 Q. Okay. What's your point here about the effects  
15 of technology?

16 A. My point here is that, as a plant metallurgist,  
17 production continuity is critical. Down-time is very  
18 costly. So we did everything we could to try to keep  
19 tools and dyes from wearing. Plus technology, being  
20 what it was, it was a lot of research into trying to  
21 reduce the tribological -- or the wear of these tools.  
22 But the import for forensic purposes and judicial  
23 purposes is the less wear in production, the larger  
24 possible lot sizes result that could have subclass  
25 carryover.

1                   In other words, maybe in the stone age,  
2 you might get one or two weapons out of a particular  
3 tool; but now, you can get thousands upon thousands of  
4 samples, depending on the product. I remember when I  
5 was working at Federal Bombing, the -- Judge Robert  
6 Vance was killed in a bomb -- a package bomb --

7                   MR. HANNA: -- Your Honor, I'm going to  
8 object to the nonresponsiveness.

9                   THE COURT: Sustained.

10                  Q        (By Mr. Doggett) Well, what are you talking  
11 about? What types of metals do they use on these tools,  
12 say manufactured guns, what sort of metals do they use?

13                  A.       Well, minimally they'll use alloy steels or  
14 high strength low-alloy steels, possibly or even alloyed  
15 steels. But, generally the trend had been toward --  
16 what's WC, it's a simple tungsten carbide, and, of  
17 course, diamond inserts is a possibility. But those two  
18 items are two of the hardest substances known to man so,  
19 particularly in production so, it's generally tool  
20 steels or tungsten carbide.

21                  Q.       And how long does something like that last?  
22 Does it have to be changed out every day or once a week  
23 or once every six months or how long do those tools  
24 last? I guess it depends on the tool and what it's  
25 being been used for, I guess.

1           A.    D, all of the above.  It depends on the  
2 stresses, the forces, the amount of lubrication, the  
3 lubrication regime itself -- and there are three or five  
4 levels of lubrication regime.  But it's just variable,  
5 and it depends on the manufacturer, it depends on the  
6 work piece, the item, the types of stresses that are  
7 imposed during the forming of operation.

8           Q.    All right.  You've already talked about these,  
9 haven't you?  The problem of uniqueness and  
10 repeatability.

11          A.    No, actually we didn't discuss repeatability.  
12 But I would point out on the issue of uniqueness, my  
13 last paper indicates that in reality, uniqueness is  
14 always discussed in these forensic issues.  But what we  
15 point out in the paper is, uniqueness is a moot issue  
16 for forensic purposes.  The critical issue is not  
17 whether uniqueness exist, it has never been proven to  
18 exist, but the key issue is, for forensic purposes, is  
19 not whether uniqueness exist, the critical issue is  
20 whether discernable uniqueness exist.  And the  
21 difference is, as I point out in the paper, it's not a  
22 general disagreement in the scientific community that  
23 uniqueness, above the subatomic level, probably does  
24 exist.  But the critical issue is can a human observe,  
25 discern that uniqueness at some level.  And the answer



1 is there has been no scientific showing, no showing, to  
2 date that discernable uniqueness exist, such that  
3 examiners can say, this probably came from this source  
4 or from this firearm.

5 The issue of repeatability is a double  
6 edge sword that has been overlooked in the forensic  
7 community for decades.

8 And dichotomy is that the examiners  
9 presume that a bullet fired from a firing platform or  
10 from a firearm, today will be able to be, quote, matched  
11 to a bullet recovered six months, six years or sixty  
12 years from now. So the presumption there is that the  
13 firings result in repeatable transfer of characteristics  
14 over long periods of time. The problem is, however, how  
15 are you ignoring that some of the hardest substances  
16 known to man used in the fabrication processes are not  
17 repeatable. They claim that every firearm manufactured,  
18 one right after the other, after the other, that the,  
19 quote, tool is wearing so rapidly, end quote, that it's  
20 not repeatable. And that is, I think as we point out is  
21 nonsensical. The two assumptions can't be reconciled  
22 and haven't been to date. So they're assuming  
23 repeatability when it works to show -- or for the claim  
24 of a match that a bullet came from a certain firearm  
25 that was maybe used six years ago in a crime; and yet

1 within seconds, this hard tooling doesn't change -- I'm  
2 sorry, changes so rapidly that you can't -- that two  
3 items that are produced sequentially can't be  
4 confusingly similar. So that's a serious issue that has  
5 never been reconciled and it's a required underlying  
6 presumption for the practice.

7           We've already discussed this, there are  
8 two issues. Does uniqueness exist, but discernable  
9 uniqueness is the key issue.

10         Q. Well what -- why do you say that uniqueness has  
11 not been scientifically established? You say that, as a  
12 scientist, you can recognize that it could exist. Why  
13 do you say it hadn't been established though?

14         A. First you can't prove an inductive hypothesis,  
15 we've already talked about that. But there have been no  
16 studies to even do it properly, to do studies that have  
17 a properly appended probabilistic assessment to a  
18 certain confidence level or degree of certainty. So  
19 there's not been any meaningful studies to show -- to  
20 demonstrate, to any degree -- any confidence level, or  
21 as the NAS has indicated, to any agree of reliability or  
22 certainty or any confidence interval.

23         Q. Now the NAS -- the studies I read, the ones  
24 that have been introduced into evidence -- call for more  
25 studies to be done to try to determine whether or not

1 uniqueness can be scientifically demonstrated. Is it --  
2 is anybody working on that? Is somebody doing those  
3 studies?

4 A. I'm not aware of that issue. First of all, I  
5 think they would agree that uniqueness is not the  
6 seminal issue, but rather discernable uniqueness is, so  
7 -- but I don't know if there are any research projects  
8 under way.

9 Q. All right. I think we've covered this.

10 A. The purpose of this slide is to show that  
11 internally --

12 MR. HANNA: -- Your Honor, I haven't heard  
13 a question. We've sort of been through this. If  
14 there's a question and an answering format, it would be  
15 more appropriate.

16 THE COURT: Sustained. Let's do Q and A.

17 Q (By Mr. Doggett) Does AFTE itself recognize  
18 that there's some problems in their definition?

19 A. Yes. Many years ago they internally  
20 acknowledged that it's not a science and that there are  
21 serious problems and that the process is both  
22 inefficient and ineffective, by a memo that I got on the  
23 screen here from 1983.

24 Q. Who is Alfred Biasoti, what does he have to do  
25 with AFTE?

1           A.    Alfred Biasoti is one of the most respected  
2 researchers in the firearms community, it's considered  
3 an authoritative figure in the field.

4           Q.    Is he an AFTE or is he --

5           A.    Yes, he was, I believe.

6           Q.    But he was critiquing their method back -- as  
7 far as back as 1983, correct?

8           A.    Yes. They was basically stating that we had  
9 serious problems, that it's an inefficient process, it's  
10 an ineffective process, it's not a science, and I  
11 believe that's the import of this particular memo.

12          Q.    Now they finally have some --

13                   THE COURT: Mr. Doggett, let's take about  
14 a ten-minute break and we'll come back.

15                   (Recess taken)

16                   THE COURT: All right. Mr. Doggett, you  
17 may resume.

18          Q     (By Mr. Doggett) Mr. Tobin, I think it was  
19 Ms. Eudaley that said something about there being some  
20 validation studies. Have you looked at the -- there's  
21 quite a number of the validation studies that AFTE and  
22 similar organizations have produced to try to validate  
23 their methodology?

24          A.    Yes.

25          Q.    What's -- is there anything wrong with those

1 studies?

2 A. Yes. As I point out -- actually we point out,  
3 they're pervasively flawed. We've studied probably the  
4 overwhelming majority of the purported validation  
5 studies and find them to be persuasively flawed.

6 Q. In what way are they flawed, without going in a  
7 lot of detail. Scientifically, how are they flawed  
8 studies?

9 A. I don't think we have enough time today, but we  
10 probably are talking fifteen to twenty significant flaws  
11 in the studies. The bottom line is they do not measure  
12 what they represent to courts that they represent, I  
13 mean, unknowingly, in other words, it's not intentional.  
14 But they don't capture what they believe that they  
15 capture, they don't represent what they think -- what  
16 they're offered or typically proffer the studies to  
17 show.

18 Q. We've seen the problems with the studies?

19 A. Yes, we've already talked about the top two.  
20 The third is -- relates to case work. They don't engage  
21 in error detection in case work. That's the -- no  
22 access to ground truth. So typically, examiners will go  
23 testify and go back and never, except fortuitously, find  
24 out that they made an error.

25 The last bullet point is -- relates to the

1 statements of certainty that they typically will append  
2 to a claimed match, and that is to some, quote,  
3 reasonable degree of some kind of ballistic certainty --  
4 practical certainty. For decades, they were testifying  
5 to an absolute certainty.

6 But now, with the paradigm shift, that  
7 statement is now changing to practical certainty,  
8 ballistics certainty, all of which are still vacuous.  
9 There is no acceptable -- scientifically acceptable  
10 probabilistic model to be making such statements.

11 Q. And why do you say there's no model or no  
12 scientifically model to make those statements?

13 A. The practice and the experiments and the  
14 validation -- purported validation studies do not  
15 comport to the scientific method, and again they do not  
16 capture what they believe they captured.

17 That fact is even recognized within their  
18 own literature, because the -- some of the  
19 authoritative -- or the role models in the firearms  
20 toolmarks community have indicated in their own internal  
21 memos and even in some of the scientific papers that  
22 these validation studies are not -- they're only of  
23 value to the experimenters and -- and scientifically, we  
24 would say they don't have external validity.

25 There are two types of validity, there's

1 internal validity with an experiment and there's  
2 external validity.

3 Internal validity is the property by which  
4 the experiment has enough information data that it can  
5 be interpreted, that's called internal validity.

6 However, external validity, which these  
7 validation studies do not exhibit -- and probably the  
8 simple word to associate with it would be called  
9 generalizability. So external validity means can the  
10 experiment -- the results of that experiment be  
11 generalized to the field. And the short answer to that  
12 is virtually every one of those purported validation  
13 studies are irrelevant to any specific case at bar for  
14 many reasons.

15 Q. All right. I think she mentioned -- maybe she  
16 didn't. I thought she mentioned a ten-gun study. You  
17 have an example of a ten-gun study that was done --  
18 let's run over the ten-gun study like the one you're  
19 talking about.

20 A. I think you would just go down the list. There  
21 are many, many problems with it. But, probably the most  
22 understandable problems is that it use -- they use what  
23 are known as -- what -- the deductive logic.

24 And the analogy that I use in one of the  
25 papers is an analogy involving Octomom or a similar

1 situation.

2           Let's say that one of eight octuplets are  
3 cloned, and let's say that a respondent is presented  
4 contemporaneously with all eight possible samples in the  
5 sample pool. I have no problem with representations  
6 that there would be a low rate of error in associating  
7 the cloned octuplets with whatever -- whichever octuplet  
8 was cloned. I don't doubt that there could be a low  
9 rate of practice error in making that association.

10           But that doesn't mirror real case work or  
11 real world scenarios. That is called deductive logic.  
12 The entire possible sample pool is presented and can be  
13 compared contemporaneously. That's not the real world.  
14 What is closer to real world but still not imitation of  
15 real world -- the reproduction of real world is, let's  
16 say that the clone and octuplet number three is  
17 presented this month for examination or comparison.  
18 Then let's say that it's three or four months down the  
19 line, octuplet number seven is presented and down the  
20 line and so forth. So, assuredly the rate of error in  
21 the non-contemporaneously comparisons would  
22 insignificantly increase. It still does not represent  
23 real case work because they're not generally presented  
24 with any other firearms, so that is a major issue with  
25 regard to these ten guns. There are metallurgical



1 issues with the studies that is the subject of our next  
2 paper in tribology. But there are many, many problems  
3 with these studies, as you've seen from the slide.

4 Q. Let's talk about rates of error. Ms. Eudaley  
5 said there really aren't any real rates of error  
6 studies, and the closest they could come is try to  
7 extrapolate from their proficiency studies, which she  
8 agrees are not really a rate of error studies. Have  
9 there been any rate of error studies relating to firearm  
10 toolmarks identification?

11 A. Well, I've actually researched the rates of  
12 error, but are there any funded or research studies? I  
13 don't know, I'm not aware of any.

14 Q. This next slide where you talk about rates of  
15 error, where did you get this information?

16 A. These are based on, largely on literature  
17 reviews. These are declared error -- rates of error for  
18 various -- from various sources showing rates of error  
19 from 2.3 percent to 28.2 percent. And I would point out  
20 that these are minima based on some of the detection  
21 techniques or processes to show that rates of error  
22 are -- these proficiency tests are not good proxies for  
23 rates of error in the domain, in the field.

24 Q. Now you've got some examples in your slide  
25 presentations about specific cases where firearms have

1 been misidentified. The Evan Thompson case, the  
2 firearms examiner where he did an audit of his work --  
3 audit of his work and found errors in all of his cases,  
4 and other examples, we won't go through all of them  
5 but --

6 A. Yeah, there are numerous ones. I just picked  
7 several that involved police officers typically -- or  
8 officers of the court that were wrongly accused, as  
9 somewhat demonstrative, but in this particular case,  
10 Trotter V. Missouri, a police officer was believed to  
11 have been shot with his own weapon --

12 MR. HANNA: I object to nonresponsiveness,  
13 actually it wasn't a question at all, Judge.

14 THE COURT: Yeah, let's go to a Q and A.

15 Q (By Mr. Doggett) What about this case that's on  
16 the slide, the Trotter case?

17 MR. HANNA: I'm going to object to  
18 irrelevant, Judge, it's outside the scope of this  
19 hearing.

20 MR. DOGGETT: I'm just giving an example  
21 of this stuff, Judge.

22 MR. HANNA: It doesn't even go towards the  
23 Daubert issue that you brought up.

24 MR. DOGGETT: Well it does because it  
25 explains how misidentification occurred. And they say

1 they don't have them or they're only -- they're zero to  
2 one percent.

3 THE COURT: Well, we've gone over several  
4 so I think we need to push on.

5 Q (By Mr. Doggett) Okay. This Williams versus  
6 Quarterman, is that out of the HPD Lab?

7 A. Yes -- well, as you indicated it was. I didn't  
8 associate it with the HPD but --

9 Q. -- All right. And this was one where they  
10 misidentified a twenty-two as a twenty-five or vice  
11 versa, correct, out of the lab?

12 A. Yes.

13 Q. And it was checked several times by supervisors  
14 or the people in accordance with the procedures that  
15 Ms. Eudaley said they were supposed to do, and they  
16 still missed it, right?

17 A. Yes. But this isn't as statistically  
18 significant with regard to rates of error as the  
19 previous case that's -- yes, that's what you've  
20 indicated.

21 Q. All right. When you talked about the 2008 NAS  
22 study and the 2009 NAS study, and you've already talked  
23 about this quote -- I believe you have -- that DNA is  
24 the only one that uses the scientific method --  
25 acceptable scientific. There's problems with the

1 others, right?

2 A. Yes.

3 Q. And that was the conclusion -- that's not just  
4 your conclusion, that's the NAS conclusion, right?

5 A. Yes. They're basically saying that only DNA  
6 practices -- is able to make a scientific valid  
7 association with specific sources.

8 Q. All right. And they concluded the same thing  
9 you did, which was that extreme probability statements  
10 are without scientific foundation.

11 A. Yes. And that relates to the statement of, to  
12 some kind of degree of certainty that this came from  
13 that.

14 Q. All right. Again, these are quotes that --  
15 most of these you've already talked about, I believe and  
16 they're included in the exhibits that we've introduced.  
17 I'll skip over this. This is a reference to your paper,  
18 right?

19 A. Yes.

20 Q. Okay. Which we've introduced as one of the  
21 exhibits, right?

22 A. Yes -- well, actually, I don't know. Have they  
23 been proffered yet, I don't know.

24 Q. All right. I'm going to skip through these  
25 real quick.

1                   This is, again, you're listing the  
2 problems with the validation studies and proficiency  
3 tests?

4           A.    Yes.

5           Q.    All right. Now, based on your study of this  
6 problem and your publication in this problem, what--  
7 what, as the state of the science is today, do you  
8 believe it's appropriate for firearms examiners to make  
9 statements like Ms. Eudaley said that she can say -- I  
10 forget her exact words -- practical certainty that this  
11 is the same gun that fired the bullets that she looked  
12 at and the casings that she looked at, does the science  
13 support that?

14          A.    If I answer that, that indicates that I  
15 acquiesce to your premise, this is not a science. So  
16 I'll -- however, the answer would be yes, we do object  
17 to that as scientifically unfounded.

18          Q.    All right. What -- I'm talking about, what  
19 does -- do you believe the science allows, not the  
20 forensic --

21          A.    Oh, I'm sorry.

22          Q.    -- not the forensic -- believability versus the  
23 science -- what do you believe the science, as it stands  
24 today, would support -- as far as a forensic firearms  
25 examiners stating, regarding the probability that she

1 got a match? What do you think it would allow?

2 A. As indicated in my latest paper, based on the  
3 state of the art as it exist today, the most  
4 scientifically defensible opinion that can be rendered  
5 by a firearms examiner is either that the firearm cannot  
6 be eliminated as the firing platform or the source of  
7 the bullets or the cartridge casings that are being  
8 fired. Or in the alternative, the examiner would be --  
9 on scientific ground to be able to conclude something  
10 like, quote, in my opinion -- and that's the first  
11 caveat, that it's an opinion statement -- in my opinion,  
12 the characteristics I observe are consistent with having  
13 been fired from this particular firearm, end quote.  
14 That would be scientifically justifiable.

15 Q. One of those two?

16 A. One of those two, yes.

17 Q. You do not believe it's appropriate for an  
18 examiner to get up and say, it's probably the same gun  
19 or it's, to a practical certainly, the same weapon.

20 A. No.

21 MR. DOGGETT: Pass the witness.

22 MR. HANNA: May I proceed, Your Honor?

23 THE COURT: Yes, sir, you may.

24 **CROSS-EXAMINATION**

25 Q. (BY MR. HANNA) Mr. Tobin, you've been hired to

1 testify in here for this hearing for that opinion right  
2 there that you just gave?

3 A. Well, you had to ask my --

4 Q. I mean, we've gone through all this --

5 A. -- Mr. Doggett is why I was hired, but I'm here  
6 testifying to my opinion.

7 Q. Okay. This entire last two hours of testimony  
8 is based -- and your conclusions, based on all your  
9 research and everything is that a firearms examiner  
10 shouldn't say with -- should limit the language they use  
11 in identifying their identification?

12 A. Yes, sir.

13 Q. But that -- not that's it not a valid  
14 identification, just that they should temper their  
15 language.

16 A. Sure. I don't rebut the truth of the matter  
17 asserted of a claimed match. I only -- I'm only  
18 indicating, in my opinion that the firearm toolmarks  
19 examiner's opinion must be constrained to proper  
20 scientific framing.

21 Q. But the same -- now you're saying firearms  
22 examination is not a science, right?

23 A. Correct.

24 Q. Okay. So why would you take something that's  
25 not a science and try to apply the same standards that

1 you have in the world of science and apply those same  
2 standards?

3 A. Because in the overwhelming majority of their  
4 publications and their court testimonies and their --  
5 through transcripts or personal observation, they're  
6 continually representing this as a science. And our  
7 position is science, to a lay observer is imbued with  
8 the perception -- has a talismanic perception of  
9 infallibility. And all we're trying to say is look,  
10 juries and triers of fact -- and law rather -- need to  
11 know that this is opinion testimony, it's not Gospel  
12 from the mount, that it's based on this CSI belief that  
13 most prospective jurors would believe it to be. That's  
14 all we're doing.

15 Q. Wouldn't they have to apply that same thought  
16 process to your testimony?

17 A. I'm sorry?

18 Q. Wouldn't they need to apply that same  
19 skepticism that you encourage them to apply in firearms  
20 examination to your testimony also?

21 A. Well, sure.

22 Q. It's not uncommon.

23 A. I'm not going to usurp their role of judging my  
24 credibility.

25 Q. Okay. I want to talk to you about your



1 curriculum vitae, please.

2 A. Sure.

3 Q. And at the very top, you have -- and I'm going  
4 to reconcile what you said on the stand with what's in  
5 your Defense Exhibit Number One. What degree do you  
6 hold?

7 A. I have a Bachelor of Science Degree in  
8 Metallurgy. Like I said, now it's called Material  
9 Science, and I have a Master's Degree.

10 Q. Okay. Where is your Master's Degree from?

11 A. George Washington University.

12 Q. And in what discipline?

13 A. It's called Special Science -- Special Studies.

14 Q. Okay. And what is Special Studies?

15 A. It was taught by the law school and by the  
16 Forensic Department, but it was primarily law. Nine of  
17 my twelve courses were law courses.

18 Q. So twelve courses got you a Masters of Arts in  
19 Special Studies from George Washington University?

20 A. Yes.

21 Q. What kind of subject matter of the law did it  
22 cover?

23 A. Criminal Law One, Criminal Law Two, Criminal  
24 Law Three, Criminal Law Four, conspiracy, evidence law.  
25 Shoot, I don't even remember, that was, what,

1     seventeen -- thirty-one years ago. That's -- those I do  
2     remember -- business law, I'm sorry, that was another  
3     one --

4           Q.     And --

5           A.     -- primarily the UCC.

6           Q.     Do you hold any other degrees, other than the  
7     two you've mentioned so far?

8           A.     No.

9           Q.     Then in your curriculum vitae, what does the  
10    line called Graduate Studies in Material Science  
11    Engineering at University of Virginia? What is that  
12    for?

13          A.     Graduate Studies in Material Science, I don't  
14    know how to rephrase that.

15          Q.     Can you explain to the Court what that -- did  
16    you obtain a degree from the University of Virginia?

17          A.     No. The FBI would not --

18          Q.     You took some classes?

19          A.     I'm sorry?

20          Q.     You took some classes?

21          A.     Yes. The FBI would not allow me to complete my  
22    PHD, so I -- and I wasn't really trying to collect  
23    degrees anyway. So I was taking courses at the graduate  
24    level, some of whom actually became collaborated and  
25    colleagues with me, but --

1 Q. Okay. So, do -- you just took some courses and  
2 stopped and didn't obtain a degree from University of  
3 Virginia.

4 A. No, but I was also a subject. I had to  
5 pronounce, for example, the cause of the TWA, a midair  
6 explosion. That was ninety days out of my life that I  
7 had to spend, so I was continually interrupted with very  
8 high profile cases. But the answer is I don't have a  
9 graduate degree in Material Science or Metallurgy.

10 Q. Mr. Tobin, I'm going to try to be very specific  
11 in my questions, and I'll ask that you try to be very  
12 specific with your answers. Okay?

13 A. I'll try yes or no.

14 Q. In regards to your time with the FBI, I think  
15 you may have given two answers when you were on the  
16 stand. Were you ever designated a chief of the  
17 Metallurgy Division?

18 A. No, not the title of chief forensic  
19 metallurgist and that's what the term de facto means.

20 Q. Okay. What do you mean by de facto?

21 A. De facto means that the title was not codified  
22 or not -- was not codified. But in reality, I practiced  
23 as the chief forensic metallurgist. Two separate  
24 section chiefs indicated to me, I was in fact their de  
25 facto forensic chief metallurgist.

1 Q. So there's not a document saying that you  
2 held that. This is -- you're just saying you did the  
3 work so you should be called that.

4 A. Well that's what de facto means. It means not  
5 in reality, not codified but I performed all the  
6 functions of it, so.

7 Q. Okay. Was there an actual chief?

8 A. Was there what?

9 Q. Was there a chief who was assigned to perform  
10 the functions that you took over?

11 A. No, because I declined the position, they  
12 merged me into elemental and analysis unit.

13 Q. Okay. Do you have any firearms or toolmarks  
14 examination experience?

15 A. Yes.

16 Q. Have you ever testified as a firearms examiner?

17 A. As a firearms examiner?

18 Q. Correct.

19 A. No.

20 Q. Okay. You were over the FBI lab while they  
21 were conducting firearms examinations; is that correct?

22 A. Yes.

23 Q. Okay. But you just were their boss, you didn't  
24 do the actual examinations and go testify on behalf of  
25 the FBI?

1           A.    I think there's a misconception there.  I was  
2 not -- as the de facto chief forensic metallurgist, I  
3 was not involved with the firearms unit per se --  
4 directly.  I -- in other words, I didn't write their  
5 performance appraisals, I didn't work in the unit or  
6 none of them worked under me directly.

7           Q.    Okay.  So you never had the job where you're  
8 supposed to look at evidence that's submitted to a lab  
9 and make the conclusion or elimination in regards to the  
10 evidence submitted, you never had that position?

11          A.    I think you left out a key phrase.  Yeah, I did  
12 that everyday for twenty-four years.

13          Q.    From firearms evidence.

14          A.    I think that's the part you left out.

15          Q.    Okay.

16          A.    Not a firearms evidence.

17          Q.    Okay.  And you're not a member of AFTE?

18          A.    Is that a question?

19          Q.    Yes, it is.

20          A.    No.

21          Q.    Okay.  Are you familiar with the guidelines  
22 that Texas Courts have prior to the admission of  
23 evidence in that -- from a specialized area?

24          A.    That's a pretty broad question, I'm not sure,  
25 you mean 702 issues?

1 Q. Yeah, 702 issues. These hearings are often  
2 referred to as Daubert hearings. Are you familiar to  
3 that case?

4 A. Yes.

5 Q. Okay. Are you familiar with the other  
6 requirements that courts are required to comply with in  
7 the admission of what are referred to as soft sciences?

8 A. Yes, in most states in -- yes.

9 Q. Okay. Are you in Texas?

10 A. From my knowledge, Texas fairly closely tracts  
11 the federal rules but I'll just say to some degree.

12 Q. Okay. And what is your understanding of those  
13 requirements that courts require to comply with before  
14 it admits evidence -- well, for lack of a better term,  
15 I'll refer to it as a soft science.

16 A. I -- the general 702 is, if I have information  
17 that would be of -- helpful to a trier of fact.

18 Q. Okay.

19 A. But are you looking for the specific Daubert  
20 criteria?

21 Q. No, I'm not. I'm looking for something less  
22 than Daubert criteria.

23 A. Okay. Well, that's -- I'll leave my answer  
24 then.

25 Q. So you're not familiar with that?

1           A.    Well I don't know what it is you're looking  
2   for.  I can't cite the --

3           Q.    Are you familiar with the case, it's called  
4   Nenno, N-E-N-N-O?

5           A.    Oh, no.

6           Q.    You're not familiar with that?

7           A.    No.

8           Q.    Okay.  At the conclusion of your testimony when  
9   you finished a little while ago, it sounded like -- and  
10   then, I think during my initial question, you're okay  
11   with forensic firearm examination testimony coming  
12   before a jury to help them understand.

13          A.    Sure.  And I'm on public record as indicating  
14   that that's one of my three most effective forensic  
15   tools for investigative purposes.  And if properly used  
16   for potential guilt or innocence assessment -- a guilt  
17   or innocence assessment, yes.

18          Q.    Okay.  So you're not here advocating to this  
19   Court that he -- this Court should not allow the  
20   firearms examiners in this particular case to testify in  
21   front of a jury?

22          A.    Well, now that's the Judge's.  I don't want to  
23   usurp his and --

24          Q.    -- I'm not asking you to make the decision.  
25   I'm saying --

1 A. Sure.

2 Q. -- you're not of the opinion that he shouldn't  
3 allow them, because you just admitted that it's very  
4 valuable for a jury to hear.

5 A. So your question is?

6 Q. My question is, are you here to tell the Court  
7 that it should not allow firearms examiners to testify  
8 in front of a jury?

9 A. Not as it's been offered today.

10 Q. I don't know what that means, as what's been  
11 offered today?

12 A. As the potential testimony or the ultimate  
13 inference would be presented to the jury.

14 Q. Okay. As Ms. Eudaley mentioned that she -- the  
15 way she classifies her conclusions is okay. Because she  
16 doesn't say within one hundred percent certainly and she  
17 doesn't say to the exclusion of all other firearms.

18 A. In the simplest form, the answer is no. Any  
19 statement of probability or -- probability, possibility,  
20 those are all called probabilistic statements. There is  
21 no foundation for any probabilistic statement other than  
22 could have, possible, consistent with. That's as far as  
23 the current state of the art will -- the science will  
24 allow the current state of the art to present to a jury  
25 or court.



1 Q. But you're applying the scientific principle to  
2 something that you're saying is not science.

3 A. Correct.

4 Q. Are you familiar with the -- with the science  
5 of psychology, meaning you've heard of it?

6 A. Yes, heard.

7 Q. And you recognize that there's psychologists  
8 coming in and testifying in front of juries all the  
9 time?

10 A. Sure.

11 Q. Isn't there an error rate for Psychology?

12 A. I'm not aware of that.

13 Q. And is that something that can be validated, a  
14 psychologist's opinion?

15 A. But not in the domain so I can't address that.  
16 But I can indicate that rates of error may well -- those  
17 would probably be elusive as well, but there may be ways  
18 of presenting scientifically acceptable rates of error.

19 Q. Okay. Now you mentioned during direct  
20 examination of many times about the NAS report; and  
21 that's compiled by scientists, right?

22 A. Yes -- well, scientists, and they typically  
23 will have at least two legal -- two attorneys, one of  
24 whom was the chairman of the 2009 report.

25 Q. Okay. And that's the report that you've been

1 referring to, the 2009 report.

2 A. Yes, the Strengthening Forensic Science in the  
3 U.S.

4 Q. Okay.

5 A. Correct.

6 Q. And since then, since 2009, you've testified  
7 many times -- or how many times in regards to firearms  
8 evidence admissibility?

9 A. Since 2009?

10 Q. Um-hum.

11 A. I believe all thirteen were subsequent -- were  
12 post NAS. I can't be certain of that but I believe  
13 that's true.

14 Q. Okay. Which -- and I'll get back to this in a  
15 moment. But when you were with the FBI and you worked  
16 with the firearms examiners, what statements were they  
17 permitted to make in regards to the conclusions back  
18 then?

19 A. I did not monitor their courtroom testimony at  
20 the time, that wasn't one of my duties. And I would say  
21 probably the same conditions has existed for decades, up  
22 until the 2009 report.

23 Q. So they would say with absolute certainty.

24 A. I'm aware that that was done, yes. I don't  
25 know what policy it was but I'm aware that that was done

1 as many, if not most. And even reviewing of the  
2 transcripts that I did, yes, that was quite frequent in  
3 court testimony to an absolute certainty.

4 Q. Okay. When did you develop your opinion that  
5 you have now that that shouldn't be occurring?

6 A. I was actually asked to look into this by a  
7 professor at John J. College, Adina Schwartz is his  
8 name, and I believe that was in 2005 -- between 2004 and  
9 2006, it was pre -- both committees of the NRC and the  
10 NAS.

11 Q. And when was the first time that you testified  
12 as an expert in opposition to those statements being  
13 made by a firearms examiner?

14 A. That was in Washington D.C. I believe, to the  
15 best of my current recollection, and that would have  
16 been for attorney Larry Kupers, K-U-P-E-R-S. And you  
17 can -- I think you could even get the transcript, but I  
18 don't know what year that was. My guess would be --  
19 actually, I don't even want to guess, I'll say maybe  
20 2009, 2010, but it could have been earlier.

21 Q. Okay.

22 A. I'm only guessing now.

23 Q. Okay. I'm going to bounce around a little bit  
24 because I've taken some notes during your testimony, so  
25 forgive me. But one of the things that you were asked

1 by Defense counsel was in regards to the peer-review of  
2 ATF journal articles; do you recall that -- I'm not  
3 talking about ATF; AFTE, the A-F-T-E.

4 A. Okay. You're not -- yes.

5 Q. Do you recall that?

6 A. Yes.

7 Q. And your response was that they're not  
8 peer-reviewed the same way your stuff is peer-reviewed,  
9 right?

10 A. Yes.

11 Q. And how did you -- how do you know that?

12 A. Well I've worked with the community for decades  
13 and I have -- I collaborate with firearms toolmarks  
14 examiners. And I've also reviewed numerous transcripts  
15 from testimony, so, general knowledge that I have from  
16 my intimate interactions with the community.

17 Q. Okay. Are you familiar with an A.F.T.E.  
18 journal in the spring of 2002 that did an abstract  
19 article on the peer-review process for that particular  
20 journal?

21 A. No.

22 Q. Okay.

23 THE COURT: Mr. Hanna, how long do you  
24 think you're going to have on your cross? I hate to  
25 bump into you.

1 MR. HANNA: Judge, I do have quite awhile  
2 to go.

3 THE COURT: I've got a meeting that needs  
4 to take place at 4:00 o'clock. I don't think it's going  
5 to take more than thirty or so minutes and we could  
6 reconvene at maybe 4:30 or something like that. But I  
7 need to get them their time because it's a published  
8 meeting and they'll be people expecting to be here for  
9 that purpose. Would you all prefer to do it, say  
10 starting up at 4:30, and I'm good till maybe 5:30, or do  
11 you want to come back in the morning? I'll give you  
12 some -- y'all some input on that.

13 MR. HANNA: Judge, may I confer with  
14 Defense counsel?

15 THE COURT: Sure.

16 MR. HANNA: Judge, I'd like to be able to  
17 confer with my co-counsel --

18 THE COURT: Sure.

19 MR. HANNA: -- and sort of determine how  
20 much longer we think we're going to need. Mr. Doggett's  
21 expressed a concern to have Mr. Tobin finish today and  
22 be able to leave by the end of the day.

23 THE COURT: Okay.

24 MR. HANNA: So, if you want to go your  
25 meeting and we'll let you know when we get back.

1 THE COURT: Let's break for the meeting  
2 and y'all have a chance to talk while I'm doing that and  
3 then we'll reassemble when the meeting is over and we'll  
4 make a decision at that point in time. Okay?

5 MR. DOGGETT: We can leave our stuff here?

6 THE COURT: Yes, you may.

7 (Recess taken)

8 THE COURT: We're going to go till when?

9 MR. HANNA: It's up to the Court.

10 THE COURT: Well I got to be at Missouri  
11 City, a police thing at 6:15, so if I -- we got till --  
12 we could get in thirty, thirty-five minutes.

13 MR. DOGGETT: How much you got left?

14 MR. HANNA: It is the Court's inquiry  
15 whether or not you think we'll finish tonight, and if we  
16 won't, let's just start tomorrow or --

17 THE COURT: That's up to y'all. I mean,  
18 if you -- I'm fine for tomorrow morning. The jury's  
19 going to come in and they'll just -- they'll go back in  
20 the jury room and we'll give them some break time. And  
21 I'll buy some donuts on the way up here and give it to  
22 them and let them have a chance to just chat, and then  
23 when we're ready to start, we'll start.

24 MR. FELCMAN: Does he have another witness  
25 after this?

1 MR. DOGGETT: Yeah.

2 MR. HANNA: Yeah. And then my preference  
3 would be just start in the morning.

4 MR. DOGGETT: Well my preference would be  
5 to go and try to finish, because maybe we can finish  
6 with Mr. Tobin and he can leave. I hate for him just  
7 have to stay a whole extra day and --

8 THE COURT: I understand.

9 MR. DOGGETT: -- rearrange flight  
10 arrangements and all that.

11 THE COURT: I'm paying the expenses of all  
12 this.

13 MR. DOGGETT: Exactly, and that's what I'm  
14 thinking about.

15 THE COURT: But at the same time, you're  
16 welcome to go for another thirty minutes if you wish.

17 MR. HANNA: Okay. That's fine, Judge,  
18 we'll go.

19 THE COURT: And see what happens. And if  
20 we don't get there, we don't get think there. I don't  
21 want you to feel compressed into thirty minutes.

22 MR. HANNA: I won't, I appreciate that,  
23 Judge, thank you for that leeway.

24 THE COURT: Okay.

25

1                                **CROSS-EXAMINATION (CONTINUED)**

2             Q            (By Mr. Hanna) Okay. Mr. Tobin, before our  
3 break, we were talking about peer-review for the  
4 A.F.T.E. article. And you had heard, based on your  
5 experience that the peer-review was not similar to the  
6 peer-review that you have for articles that you write.  
7 And I think one of the language you used was a referee  
8 type system; is that correct?

9             A.        Yes, sir.

10                         MR. HANNA: May I approach the witness,  
11 Your Honor?

12                         THE COURT: Yes, sir.

13             Q            (By Mr. Hanna) I'm going to show you, for  
14 purposes of your examination, an article out of the AFTE  
15 journal, out of 2002, entitled the History of the AFTE  
16 Journal, the Peer-review Process and Daubert issues.  
17 Are you familiar with it?

18             A.        I think I've already indicated no.

19             Q.        Okay. Does it appear to be what it says it is?

20             A.        I haven't read anything other than the title  
21 so.

22             Q.        Okay. But you recognize that that's what the  
23 title says, what I just read into the record.

24             A.        Yes.

25             Q.        Okay. And on page -- this is an addition,



1 Volume 34, Number two, and then it's identified as Page  
2 Number 213. Under the summary, there are some  
3 highlighted text in there, and I highlighted it for the  
4 ease of finding it. Could you read that, please?

5 A. "The AFTE journal is a scientific journal  
6 published quarterly which has a formal pre-publication  
7 evaluation process" -- oh, editorial, and that's six --  
8 "committee with subject matter experts who function as  
9 referees and a post publication peer-review process  
10 designed to insure relevant and reliable information to  
11 the criminal justice community and members of the  
12 Discipline of Forensic Firearms and Toolmark  
13 identifications".

14 Q. Does this article change your opinion as to  
15 whether or not they have that peer-review process?

16 A. No.

17 Q. Do you think this is a lie?

18 A. It's misleading and misrepresenting and they're  
19 loosely using words that are not correct in this as  
20 they're used in their -- in the scientific -- in the  
21 true scientific community.

22 Q. Sort of like you did with the whole chief thing  
23 at the FBI?

24 A. That's not true, no.

25 Q. Oh, you say you were chief but you really

1 weren't. That's sort of --

2 A. I've never said I was a chief forensic  
3 metallurgist, I said I was the de facto chief forensic  
4 metallurgist. The definition of de facto means it's not  
5 codified, but I was functioning in that capacity and  
6 I'll maintain that to this day.

7 Q. Are you upset that you weren't actually given  
8 that position?

9 A. I turned it down twice -- well, you mean now or  
10 then? The answer now, I'm upset that I missed out on  
11 the fifteen thousand. If I would have known I was going  
12 to have to do the duties of a chief forensic  
13 metallurgist, I might have changed my mind but --

14 Q. Have you ever been a firearms -- I mean, I'm  
15 sorry, a toolmark examiner?

16 A. Well I don't know how to answer that.

17 Q. It's a tough one, uh?

18 A. But it is.

19 Q. Okay. Why is that a hard question?

20 A. Well there's spirit and intent, so I don't  
21 know -- I mean, literal or intent. The answer is yes, I  
22 did hundreds upon hundreds, if not thousands of, quote,  
23 toolmark examinations. I think where you're going --  
24 and I'll save you some time, was I a certified toolmark  
25 examiner? No.

1 Q. Okay. But you were one in spirit, I guess is  
2 what you mean?

3 A. Well the FBI apparently considered me -- my  
4 skills to be acceptable --

5 Q. Did you ever testify --

6 A. -- as did -- if I could finish, please -- as  
7 did other firearms toolmarks examiners as they would  
8 periodically consult with me for issues they did.

9 Q. Okay. Did you ever testify as a toolmark  
10 examiner?

11 A. I testified to toolmarks findings, yes. And  
12 that's the -- one example I was trying to use was the  
13 Judge Robert Vance case, where you cut me off, but the  
14 answer is, yes.

15 Q. Okay. Isn't the standards in which you had to  
16 use in order to express your opinion as a toolmark  
17 examiner the exact same standards as are implied or as  
18 included in the firearms examiners?

19 A. No.

20 Q. They're different?

21 A. Yes.

22 Q. What does AFTE stand for again?

23 A. Association of Firearms and Toolmarks  
24 Examiners.

25 Q. Okay. And so AFTE sets the criteria and -- or

1 I know you're not -- you say you don't really like AFTE  
2 but --

3 A. No.

4 Q. -- that's what they subscribe to.

5 A. I object to you're saying that I don't like  
6 AFTE, that's misrepresenting my position.

7 Q. Okay. What is your position about AFTE?

8 A. I don't have a like or dislike for them. I  
9 just address the objective issues of scientific  
10 principles and the scientific method related to AFTE  
11 activities.

12 Q. But, like you mentioned before, you don't  
13 consider the forensic discipline that AFTE is engaged in  
14 or that is associated with it as a science.

15 A. That's correct.

16 Q. So why apply those scientific principles to  
17 that area, that discipline?

18 A. Because they are persuasively representing the  
19 practice as a science and that's how jurors interpret  
20 the practice.

21 Q. Okay.

22 A. Now --

23 Q. Okay. I'm sorry.

24 A. As I pointed out in my last paper, you know,  
25 footnote regarding, for example the Grzybowski -- and I

1 think it's G-R-Z-Y-B-O-W-S-K-I --

2 Q. Um-hum.

3 A. -- paper. I think there are seven instances of  
4 the words science and scientific in the first two or  
5 three sentences. So it's a cognitive imbuing by  
6 repetitive -- by redundancy of a misleading and untrue  
7 representation.

8 Q. So it's not truly a science, but you testified  
9 earlier that it is something that you believe juries  
10 should hear.

11 A. I'm sorry, would you say that again?

12 Q. You testified that it is -- you're saying now  
13 that it should not be considered a science, but as you  
14 testified earlier, it is something that jurors should  
15 hear.

16 A. Well I was presuming appropriate limiting  
17 instructions to the jury when I said that. But the  
18 answer is under the right guidelines, as far as  
19 interpretation that I would say, then one of the two  
20 opinions would be acceptable. But I think jurors need  
21 to be instructed that A, this is not the perceived  
22 Gospel from the mount that most, if not many believe  
23 them to be; and B, this is an opinion from a  
24 non-demonstrated -- a practice that is not demonstrated  
25 to show appropriate reliability, hasn't been

1 appropriately tested, is not involved in rigorous  
2 peer-review, and I forgot the fourth major criterion.  
3 But -- but when I said that, I was assuming limiting  
4 instructions to a jury, and I now understand that that's  
5 not the case in Texas, so.

6 Q. So you're changing your opinion?

7 A. I'm not changing my opinion with regard to  
8 conforming to accepted -- acceptably conforming to the  
9 Daubert criteria.

10 Q. Okay. I think the language that you used, when  
11 you testified awhile ago was, the fact that -- it's  
12 similar to this, maybe not exact -- the fact that the  
13 firearm, slash, toolmarks is still in my opinion one of  
14 the top three most effective probative tools and it has  
15 significant probative value. Is that still your belief?

16 A. Yes -- well, I'm sorry, I might have missed the  
17 last few words. Could you read that again?

18 Q. I find the fact that the firearm toolmarks is  
19 still in my opinion one of the top three most effective  
20 probative tools and has significant probative value.

21 A. Could have significant -- could have -- I was  
22 trying to bifurcate my opinion with regard to it as an  
23 investigative tool, like a polygraph versus the  
24 probative value, but again, I was assuming limiting jury  
25 instructions.

1                   One of my bases for that is when I was  
2 working on the streets, I worked several IOC cases in  
3 Chicago. Those are interception of communications where  
4 we recovered from a -- we recovered some tapes where  
5 police departments were bugging jury deliberations. And  
6 what I heard was startling for a new agent, I mean, I  
7 was really startled with what I heard, how juries  
8 interpret expert testimony. So, that's part of the  
9 basis by which I have reservations about allowing  
10 uninterpretable and/or potentially unreliable evidence  
11 to go before a jury.

12           Q.     So now you're testifying that you're concerned  
13 about the way a jury will receive the evidence that you  
14 just testified awhile ago should be admitted.

15           A.     I'm sorry, say that again.

16           Q.     You testified earlier, very similar to the way  
17 I just quoted, and now you're qualifying that -- and  
18 this is after our break, right?

19           A.     Yes, sir.

20           Q.     This was after you talked to Defense counsel.

21           A.     Sure, yes.

22           Q.     I guess he was surprised by your opinion at the  
23 conclusion of -- before the break?

24           A.     I don't know if he was surprised or not.

25           Q.     Okay. Did you talk to him about it?

1 A. Yes.

2 Q. Okay. And so now you've come back with a  
3 different opinion; is that correct?

4 A. A modified opinion, but I was --

5 Q. Okay. And it's based on this new information  
6 that you got from the Defense attorney.

7 A. Yes.

8 Q. Okay. And you understand your job as an expert  
9 in this particular case is to advise the Judge about the  
10 science or lack thereof, correct?

11 A. Yes.

12 Q. And not to interpret the way juries may or may  
13 not perceive it, or are you saying that because of your  
14 concern of the way a jury may perceive the evidence,  
15 that will effect your decision on whether or not it  
16 should be admissible or not?

17 A. When I responded to the earlier question, I was  
18 assuming that the jurors would be advised that -- of  
19 what I've already indicated.

20 Q. Why were you assuming that?

21 A. Well that's the way it is in the federal venue  
22 and most of the states where I've testified that jurors  
23 do get limitations -- or instructions, rather on how  
24 they should interpret -- not the ultimate issue  
25 obviously but, about how they should evaluate expert



1 testimony.

2 Q. And where did you learn that? What state --  
3 what federal rule allows a court to constrain a jury's  
4 consideration of evidence?

5 A. Well, that's pretty standard in the federal  
6 system. They're allowed to include, in their jury  
7 instructions the limitations on what they can and can't  
8 do with regard to how they evaluate it and the number of  
9 states that I've testified. I just was not aware that  
10 there would be no concomitant instructions to a jury in  
11 this venue.

12 Q. Okay. So, you're saying that if the Judge  
13 limits it -- and you have to -- you don't know how a  
14 Judge might limit it, right?

15 A. Correct.

16 Q. You don't know. But if a Judge limits it then  
17 it's not junk science; but if a Judge doesn't limit it  
18 then it is junk science. Is that what you're saying?

19 A. I'm not calling it junk science, I've never  
20 characterized this practice as junk science.

21 Q. Okay. You don't characterize it as science at  
22 all?

23 A. Well that's another issue, but it's not a  
24 science nor is it a junk science, so.

25 Q. When you testified before, and you said, no, I

1 think the jury should hear this. What limiting  
2 instruction, for lack of a better term, were you  
3 imagining?

4 A. That this -- well, first of all, I had already  
5 indicated that there were no -- I think there was only  
6 one at the time, the Daubert criteria that I felt that  
7 this even partially complied with, so I was actually  
8 addressing the Daubert criteria for admissibility. Now,  
9 with the Judges -- obviously the Judge's decision on  
10 whether to ring the bell or not to allow the jury to  
11 hear this, so -- but that was assuming that the jury  
12 would know that this is not what you've perceived it to  
13 be watching CSI on a television that this was -- and I  
14 think the Mayfield cases really woke up a lot of people  
15 to the fact that this is not a sacrosanct Gospel from  
16 the mount forensic practice.

17 Q. Okay. So that's an instruction that the Judge  
18 should say that this isn't CSI?

19 A. No, I'm generally not around for the  
20 instructions nor do I get them. I don't even get them  
21 in post -- in appellate matters either. So, I -- those  
22 were not -- those would be communicated to me through my  
23 clients generally.

24 Q. So, what -- when you gave your opinion earlier  
25 that it should be something for a jury to consider, what

1 instruction were you imagining the Judge would give to  
2 make that appropriate?

3 A. Now you're -- I didn't say it should be, I did  
4 not say that this evidence should be. I said that it  
5 would be scientifically acceptable with certain  
6 limitations. That's all I was saying earlier.

7 Q. Okay. And you're saying that that evidence  
8 should be admitted even though you believe that it only  
9 meets one of the Daubert criteria.

10 A. I've just -- you just -- I'll say it again. I  
11 did not say it should be admitted. That's again,  
12 usurping the Judge's role, and I don't presume to do  
13 that.

14 All I'm addressing is that I don't find  
15 these -- this practice to comport to any of the Daubert  
16 criteria. And particularly -- I don't know if you've  
17 read the advisory committee notes, the proposed Rule 702  
18 Amendment, but they pretty well articulate various  
19 criteria at the time by which evidence -- this evidence  
20 should be -- well, evidence, not this evidence, should  
21 be evaluated. So my current position is that I don't  
22 find the practice to comport to any standards --  
23 appropriate stands of reliability, testability of  
24 peer-review -- peer-review is partially satisfied but  
25 not fully. And I forgot the fourth, you'll have to help

1 me there.

2 Q. Okay. Well you're going through the Daubert  
3 criteria, correct?

4 A. Sure, yes.

5 Q. But are you aware that in Texas, if something  
6 isn't a hard science or not science at all, that the  
7 Daubert factors aren't applied to it? Did you know  
8 that?

9 A. No, no. But there again, we're talking about  
10 now having a cake -- trying to have the cake and eat it,  
11 too. The domain adamantly represents this as a science.  
12 And yes, they're now -- now you're proposing that they  
13 look for the exception because it's a soft science; I  
14 don't understand. I mean, that's a difficult issue, a  
15 challenging issue to reconcile.

16 Q. You agree with psychologists, it's a science?

17 A. I'm sorry?

18 Q. Is psychology a science?

19 A. I'm not qualified to address; I don't know much  
20 of the field, so I can't address the issues in  
21 psychology.

22 Q. Well, do you recognize that it's considered a  
23 science?

24 A. Sure, yes.

25 Q. Okay.

1           A.    I mean -- and again, they would use, for  
2           example, a scientific method to try to gather  
3           information inductively or by using an inductive  
4           inference to assess trends or potentials or whatever.  
5           So, yes, in good part, I would accept that it's a  
6           science.

7           Q.    Okay. Your testimony has changed as a result  
8           of your conversation with Defense counsel; is that  
9           correct?

10          A.    It's been modified.

11          Q.    Okay. And you're claiming that it's because of  
12          a misunderstanding of the law. But I've asked you, what  
13          was your understanding of the law before, and you're not  
14          able to tell us.

15          A.    My -- well, understanding --

16          Q.    What instruction did you anticipate the Court  
17          to give when you rendered your opinion prior to our  
18          break?

19          A.    That the practice is not a science, and that  
20          this is a personal opinion based on an examiner using a  
21          methodology that hasn't been established to be reliable,  
22          it hasn't been properly tested and is not the most  
23          rigorously peer-reviewed. And again, I'm missing the  
24          fourth criteria. But my -- whatever that was, I  
25          remember reviewing that as well and that failed as well.

1 Q. Okay. So it doesn't meet any -- it doesn't  
2 meet any one of the Daubert requirements.

3 A. Well half of that one. I have a slide that  
4 graded the various criteria for CLE's, and there were  
5 three F's and a C, I think was what I --

6 Q. Did you learn anything in regards to this  
7 aspect in your criminal law classes that you took  
8 towards your Masters, any specialized studies?

9 A. I don't know what this aspect is here, it's  
10 under evidence -- with evidence law.

11 Q. And what year did you get out of school?

12 A. 1983. In fact, I wrote a manual that the  
13 Department of Justice wanted to publish and the FBI  
14 overruled them. They didn't feel that scientists should  
15 be writing legal guidelines -- legal guides, it was  
16 standards for appellate review issues.

17 MR. HANNA: Can I approach the witness,  
18 Your Honor?

19 THE COURT: You may.

20 Q (By Mr. Hanna) First, I have some questions.  
21 Mr. Tobin, do you recall testifying in the United  
22 State's District Court in the Northern District of  
23 Georgia, in Atlanta; it looks like back on July 25th of  
24 2012? And the case was Clifford Jackson and Clifford  
25 Durham. (sp)

1           A.    Yes, I don't remember the date, but I remember  
2 that trial, yes.

3           Q.    Okay.

4           A.    I'm sorry, the hearing or the trial -- actually  
5 it was a hearing.

6           Q.    It was a hearing, it was a hearing about the  
7 admissibility of forensic ballistics or firearms  
8 examining evidence?

9           A.    Yes, the former U.S. Attorney was a Judge in  
10 that case.

11          Q.    Okay. And the Judge asked you some questions  
12 during your testimony, did he not?

13          A.    Yes.

14          Q.    In an attempt to try to clarify some of the  
15 issues for himself, he asked you questions about your  
16 testimony and your opinion. And do you remember what  
17 your response was when the Judge asked you --

18                   MR. HANNA: Your Honor, just for purposes  
19 of expediency, can I approach the witness with this?

20                   THE COURT: Sure.

21          Q     (By Mr. Hanna) This is a portion of the  
22 transcript. I'd like you to read it -- and you can read  
23 it to yourself. I want to ask you if you remember this  
24 dialogue between yourself and the Judge.

25          A.    Sure.

1 Q. And to recap so everybody else in the courtroom  
2 knows what we're talking about. The Judge asked you, so  
3 you're here today to tell me that at no level is that  
4 comparison that ballistic examiners do, which you are  
5 not one, is ever useful or admissible in a case. And  
6 your response was, oh, no, Your Honor, I'm -- in fact  
7 I'm on public record as indicating that I do not have  
8 issues or I don't take issue with the practice, and I  
9 find them to be very effective at finding and comparing  
10 similarities in the pattern matching practice. Is that  
11 a true statement?

12 A. Sure, yes.

13 Q. In other words -- you continue, this bullet  
14 exhibit -- this bullet exhibits quite an impressive  
15 concordance, if you will, or similarities to opine that  
16 they are so similar.

17 A. Yes.

18 Q. That's accurate?

19 A. Sure.

20 Q. And that was -- that was to that particular  
21 case.

22 A. Yes.

23 Q. And you continue on. But in fact I have even  
24 indicated, I'm on record as indicating I find the  
25 practice of firearm toolmark is still in my opinion one



1 of the top three most effective probative tools and has  
2 significant probative value.

3 A. Sure, yes, yeah.

4 Q. And then you continue on. However, the -- I'm  
5 going to paraphrase, the ultimate inference of this  
6 specific source attribution, in other words, that it  
7 came from this gun to the exclusion of all of -- or  
8 exclusion of the other ten thousand guns that came in  
9 that production lot is scientifically unfounded.

10 A. Sure, yes.

11 Q. And that's consistent with what you said  
12 earlier today, correct?

13 A. Yes.

14 Q. You almost quoted some of that verbatim when  
15 you gave one of your answers to my questions. But  
16 nowhere in this discourse, in your correspondence with  
17 that Judge, do you qualify your opinion based on a  
18 limiting instruction that the Judge were to give the  
19 jury.

20 A. Sure, that was a federal case.

21 Q. Right.

22 A. So I was assuming a limiting jury instruction  
23 as well.

24 Q. So --

25 A. We didn't discuss that in that hearing.

1 Q. Right. So you're just assuming that the Judge  
2 is going to limit it some way and then that makes it  
3 okay for it to be admissible as long as the Judge gets  
4 some kind of limiting instruction on what the jury can  
5 do with that information?

6 A. Well he did limit it.

7 Q. Well there's an agreement by the parties in  
8 that case but it wasn't by law.

9 A. No, no, but you were saying that --

10 Q. In your statement prior to that -- and you  
11 weren't aware of that agreement had been reached prior  
12 to your testimony.

13 A. No, that agreement had not been reached prior  
14 to my testimony.

15 Q. Correct.

16 A. That agreement occurred in my presence in the  
17 courtroom.

18 Q. Correct.

19 A. Yes.

20 Q. So your statement never qualified that, I feel  
21 this way only if you tell the jury this limiting  
22 instruction.

23 A. That's correct.

24 Q. But now, after you met with Defense counsel and  
25 you found out what he wants the Court to do in this

1 particular case, you're changing your testimony.

2 A. I modified my testimony. But I was never  
3 asked -- and I try not to, as you can see where I get my  
4 knees cut off, when I try to move things along by  
5 proactively addressing issues, I try not to address  
6 questions that aren't on the table. So I was not asked  
7 by the Judge nor either advocate as to my opinion as to  
8 the limiting instructions.

9 Q. Are you trying to imply that you're not -- you  
10 don't provide more than enough information in your  
11 responses to the questions that Defense counsel and  
12 myself have asked?

13 A. I try to be thorough in my responses.

14 Q. Right. And make sure that the Court  
15 understands your full position.

16 A. As much as I can in the limited time.

17 Q. Okay. Let me ask it way --

18 MR. HANNA: And I'm almost done, Judge.

19 Q (By Mr. Hanna) Just so that I understand and  
20 the Court understands, what is your opinion about the  
21 testimony of firearm examiners before a jury?

22 A. If juries are aware that these do not -- that  
23 such a practice does not comport to the scientific  
24 method, do not comport or comply with the various  
25 Daubert criteria, and that this -- it is an opinion of

1 an art -- a practice of art, then -- they don't propose  
2 to usurp the Judges. All I can say is the practice does  
3 not -- is objectionable or is -- does not comply with --  
4 from a scientific de facto to the indicia of  
5 reliability. That's all I can really say.

6 I don't want to -- I think it's up to the  
7 Judge, after I make that statement to -- whether this  
8 goes or not before a jury. I do see there's a risk of  
9 misinterpretation, understanding of the reliability --  
10 again, partially, from the IOC cases that I worked with.  
11 Juries just don't get -- they perceive -- what they  
12 perceive to be scientific endeavor to be infallible.  
13 And like I said, have a talismanic --

14 Q. -- You continue to mention that. But it's  
15 really outside your area. You're trying to tell the  
16 Judge what jurors -- how jurors interpret evidence and  
17 this kind of thing.

18 A. That's exactly what I'm trying to tell you I  
19 don't want to do here.

20 Q. Well, that's what you're doing because you're  
21 saying, don't let this evidence in, if you're not going  
22 to tell the jury how to view it. So you're saying that  
23 you're afraid that the jury will misconstrue the  
24 validity or the significance or credibility of the  
25 testimony that you've already said should be before a

1 jury.

2 A. I'm supposedly here to testify about issues of  
3 science.

4 Q. Right.

5 A. The ultimate issue of legal is obviously up to  
6 His Honor. So my point is, it does not meet the  
7 scientific acceptability with regard to the Blackman  
8 (sp) Courts criteria. And I do indicate that when I try  
9 to convey this information to a lay -- just regular  
10 citizens or people that are not scientists or attorneys,  
11 it's a bit confusing.

12 There's a strong CSI perception that this  
13 is infallible as was fingerprints prior to Mayfield, the  
14 Mayfield case.

15 Q. Okay.

16 MR. HANNA: Judge, I'll pass the witness.

17 THE COURT: All right. Mr. Doggett.

18 MR. DOGGETT: May I approach?

19 THE COURT: Yes, sir.

20 **REDIRECT EXAMINATION**

21 Q (By Mr. Doggett) This is Defendant's Exhibit 7,  
22 it's a hard copy of your -- will you verify for me that  
23 that's a hard copy of your slide show.

24 A. It looks to be, yes.

25 MR. DOGGETT: I offer Defendant's Exhibit

1 Number 7.

2 MR. HANNA: I have no objection, Judge.

3 THE COURT: And that's -- did you say  
4 seven?

5 MR. DOGGETT: Seven.

6 THE COURT: Seven is admitted.

7 MR. DOGGETT: And I'm done.

8 THE COURT: Okay. Very good. You can  
9 leave the stand, thank you very much.

10 THE WITNESS: Am I released, Your Honor?

11 THE COURT: Yes, you are.

12 THE WITNESS: Thank you.

13 THE COURT: All right. I would like to  
14 look at this study before I make my finding.

15 MR. DOGGETT: Well, I'm done with this  
16 witness.

17 THE COURT: Oh, I'm sorry, I thought you  
18 were done, I thought you were done. Okay.

19 MR. DOGGETT: I have another witness.

20 THE COURT: Okay. Good. Well, that gives  
21 me a chance --

22 MR. DOGGETT: We would like you to look at  
23 the study.

24 THE COURT: That gives me a chance to look  
25 at the study tonight then. I'm going to call us to a

1 conclusion for today.

2 MR. DOGGETT: Yes, sir.

3 THE COURT: And you don't have a problem  
4 with the witness that you have remaining, right?

5 MR. DOGGETT: No.

6 THE COURT: The timing, that kind --

7 MR. DOGGETT: No. We've already made the  
8 arrangements to extend a little bit.

9 THE COURT: Okay. Good, that will be  
10 fine.

11 MR. HANNA: Judge, for housekeeping  
12 purposes, we have a witness for the guilt part of the  
13 trial flying in from Alaska, who we prefer to -- if we  
14 have to, put on tomorrow to comply with his needs to get  
15 back to Alaska in a short period of time. So we maybe  
16 asking the Court for not included with the hearing to --  
17 I don't know, we're going to have to come up with an  
18 idea to try and get his testimony before the jury  
19 sometime tomorrow. I don't know how much longer we  
20 have, you've got one more witness that you think will  
21 not take as long as --

22 MR. DOGGETT: No, it won't take as long as  
23 Mr. Tobin.

24 MR. HANNA: Okay.

25 MR. DOGGETT: We're going to work tonight

1 to shorten the testimony. So, I'm guessing we could be  
2 through in maybe an hour, hour and a half, max.

3 MR. HANNA: Both of us?

4 MR. DOGGETT: I don't think you're going  
5 to ask many questions -- I don't think you're going as  
6 many questions.

7 MR. HANNA: Then that might make you feel  
8 better about getting the opening statements done or  
9 anything --

10 THE COURT: Yeah, I don't think it's going  
11 to take us a long time in the morning.

12 MR. HANNA: Okay. Judge, just for  
13 purposes of my preparation tonight, you mentioned you  
14 wanted to read the report. Which report is it that  
15 you're referring to?

16 THE COURT: The NIS report, wasn't that  
17 it?

18 MR. HANNA: The N-A-S report.

19 THE COURT: N-A-S report.

20 MR. HANNA: Yeah, it's been admitted by  
21 Defense counsel; it's very brief.

22 THE COURT: Right. That's what I wanted  
23 to look at.

24 MR. DOGGETT: There's two of them, there's  
25 one in '09 and one in '08. The '09 is very short, the



1 '08 is --

2 THE COURT: I'll take both.

3 MR. HANNA: I have some of that stuff that  
4 I offer to the Court, too.

5 THE COURT: Okay. All right. Thank  
6 y'all. See you in the morning.

7 (Proceedings adjourned for evening)

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1 THE STATE OF TEXAS §

2 COUNTY OF FORT BEND §

3 I, Karen Woolsey, Official Court Reporter in and for  
4 the 434th District Court of Fort Bend County, State of  
5 Texas, do hereby certify that the above and foregoing  
6 contains a true and correct transcription of all  
7 portions of evidence and other proceedings requested in  
8 writing by counsel for the parties to be included in  
9 this volume of the Reporter's Record in the above-styled  
10 and numbered cause, all of which occurred in open court  
11 or in chambers and were reported by me.

12 I further certify that this Reporter's Record of the  
13 proceedings truly and correctly reflects the exhibits,  
14 if any, offered by the respective parties.

15 I further certify that the total cost for the  
16 preparation of this Reporter's Record is \$ \_\_\_\_\_ and  
17 will be paid by Fort Bend County.

18 /s/ Karen Woolsey

19 \_\_\_\_\_  
20 Karen Woolsey, CSR  
21 Texas CSR 1828  
22 Official Court Reporter  
23 434th District Court  
24 Fort Bend County, Texas  
25 301 Jackson  
Richmond, Texas 77469  
Telephone: 281.633.7654  
Expiration: 12/31/2015

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