

1 behind there in the apartment, correct?

2 A Yes, sir.

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

5 THE COURT: Anything further?

6 MR. LESLIE: No further questions, Judge.

7 THE COURT: May this witness be excused?

8 MR. LESLIE: Yes, Your Honor.

9 THE COURT: Is that all right,  
10 Mr. Newman?

11 MR. NEWMAN: Oh, yes, Your Honor. Sorry.

12 THE COURT: Thank you. You are free to  
13 go.

14 Call your next witness, please.

15 MR. LESLIE: State calls Jason Schroeder.

16 (Witness sworn)

17 THE COURT: And if you would please state  
18 and spell your name for my court reporter.

19 THE WITNESS: Yes, ma'am. My name is  
20 Jason Schroeder, S-c-h-r-o-e-d-e-r.

21 THE COURT: And you may proceed.

22 **JASON SCHROEDER,**

23 having been first duly sworn, testified as follows:

24 **DIRECT EXAMINATION**

25 Q (BY MR. LESLIE) Mr. Schroeder, where do you

1 work?

2 A I am currently employed as a manager for the  
3 trace evidence laboratory at the Harris County Institute  
4 of Forensic Sciences.

5 Q And what are your duties as a manager there?

6 A Mainly operations. One of my primary duties  
7 is the analysis of gunshot residue, day-to-day  
8 operations and management of the lab.

9 Q What sort of training and education does it  
10 take to analyze gunshot residue?

11 A For me specifically it was, I have a  
12 bachelor's of science degree in forensic biology, a  
13 master of science degree in forensic science and an MBA.  
14 And leaning more directly to gunshot residue, we have an  
15 extensive in-house OJT training program that leads to an  
16 initial competency exam and annual proficiencies to  
17 insure that we are properly trained in the performance  
18 of gunshot residue.

19 Q How long have you been an analyst for gunshot  
20 residue with the Harris County Institute of Forensic  
21 Sciences?

22 A For gunshot residue specifically, about six  
23 years, with a break due to military duty, and I have  
24 been with Harris County for 13 years.

25 Q And have you ever testified as an expert in

1 gunshot residue before?

2 A Yes, sir, I have.

3 Q Would that be on few or many occasions?

4 A I would say many.

5 Q And have you testified in the courts of Harris  
6 County?

7 A Yes, sir, I have.

8 Q And were you working as a gunshot residue  
9 analyst in November of 2012?

10 A Yes, sir, I was.

11 Q Did you conduct any gunshot residue and  
12 analysis associated with this case?

13 A Yes, sir, I did.

14 Q Before we get into that, let me ask you a few  
15 questions about, what is gunshot residue?

16 A Gunshot residue is a particle consisting of  
17 three individual elements. The elements are barium,  
18 antimony and lead. The individual elements are  
19 freestanding in nature. So in our analysis if we see  
20 these individual particles, it is of no concern, but if  
21 we see an individual particle containing all three  
22 elements, then due to extensive research, we can  
23 confidently say that is gunshot residue, and, further,  
24 that gunshot residue has an association with the  
25 discharge of a firearm.

1           Q       So essentially what you're saying is, if you  
2 just found one of those elements, like lead on someone's  
3 hands, you wouldn't be able to say that they had handled  
4 a firearm or fired a firearm?

5           A       Yes, sir, that's correct. Barium, antimony  
6 and lead, each of the elements, they're freestanding in  
7 nature. Specifically, barium is found in soil.  
8 Antimony is common in makeups. So the individual  
9 element is of no concern for our analysis.

10          Q       And you described these as particles; is that  
11 correct?

12          A       Gunshot residue is particles and the  
13 individual barium, antimony and lead as elements, yes,  
14 sir, that's correct.

15          Q       What are some of the factors that would affect  
16 how many of these particles are on someone's hands?

17          A       There's a number of factors. Most notably and  
18 most importantly, I would say time in between the  
19 discharge of a firearm and the effort in collection.  
20 Any effort at washing the hands or getting rid of the  
21 evidence, something as simple as wearing gloves during  
22 the discharge or during the commission of a crime in  
23 which there was a discharge of a firearm.

24          Q       What about just dusting off your hands or  
25 wiping them off on something?

1           A       Yes, sir, to that point, something as simple  
2 as reaching into your pockets for car keys, the  
3 particles, they don't degrade, but they do slough off  
4 and they slough off relatively easy. So your scenario,  
5 sir, rubbing the hands, nervousness, reaching into  
6 pockets, anything like that could get rid of GSR pretty  
7 easily.

8           Q       Now, you said a moment ago that time is one of  
9 the biggest factors in determining if there's going to  
10 be gunshot residue; is that correct?

11          A       Yes, sir, that's correct.

12          Q       And what sort of time are we looking at that  
13 would be significant when you would expect to see  
14 gunshot residue or not?

15          A       Assuming no washing of the hands, just normal  
16 day-to-day activities, six to eight hours is generally  
17 considered a benchmark as to when you wouldn't expect to  
18 see any GSR.

19          Q       What about after two or three hours?

20          A       Two to three hours, it's possible. It's  
21 difficult to quantify. There's no studies to say a  
22 specific amount. Two to three hours would introduce the  
23 possibility of, again, handling, reaching into pockets,  
24 washing your hands, anything like that.

25          Q       How does the gunshot residue kit come to you?

1           A       It comes to us from the law enforcement  
2 agency, usually through our evidence room.

3           Q       And what steps do you take in analyzing it?

4           A       We analyze the gunshot residue kits by  
5 scanning electron microscopy, commonly referred to as  
6 SEM, and it's a form of microscopy in which the  
7 traditional light that we're all familiar with that form  
8 of microscopy, a beam of light is replaced by a beam of  
9 electrons. That beam of electrons will give us a  
10 picture of the image that we're looking at just like are  
11 very similar to traditional microscopy, but more  
12 importantly, that beam of electron will give us an  
13 elemental composition, allowing us to identify, again,  
14 barium, antimony and lead.

15          Q       And when you received this kit, did it  
16 indicate when and where it had been performed?

17          A       Yes, sir.

18          Q       Do you recall where and when this kit was  
19 administered?

20          A       I would have to refer to my notes.

21          Q       If that would help to refresh your  
22 recollection.

23          A       Yes, sir, I have it here.

24          Q       Where and when was this test administered?

25          A       This is a field note commonly submitted along

1 with the gunshot residue kit and this field note by the  
2 officer indicates that it was collected on  
3 November 17th, 2012, at 12:55 a.m. or almost 1 o'clock  
4 in the morning.

5 Q Is there always going to be gunshot residue  
6 like, let's say, hypothetically someone fires a gun and  
7 you or an officer are right there on the scene and  
8 immediately collect the gun?

9 MR. NEWMAN: Object to that as being a  
10 very leading question. It's about as leading as it  
11 gets.

12 THE COURT: If you want to rephrase it.

13 Q (BY MR. LESLIE) Do you always expect to find  
14 gunshot residue?

15 A There are some scenarios where gunshot residue  
16 is not found even after the discharge of a firearm.

17 Q And what are some things that would make that  
18 true?

19 A Most specifically it is the type of  
20 ammunition. There are some ammunitions, primarily 22  
21 calibers and a few others, that due to manufacturer  
22 variances don't necessarily included barium, antimony  
23 and lead. They are a little bit uncommon, but they do  
24 occur. Other variables could include the type of  
25 firearms, most notably, environmental conditions, but

1 for that scenario to exist, in my experience it is most  
2 determined by the type of ammunition.

3 Q Would 45 caliber ammunition be something that  
4 you would expect to not see gunshot residue?

5 A With 45 caliber ammunition we would expect to  
6 see gunshot residue the vast majority of the time. I'm  
7 not real familiar with specifics or a specific type of  
8 ammunition. I have been led to believe that they do  
9 occur, but I haven't experienced any 45 caliber  
10 ammunition that does not produce gunshot residue.

11 Q Now, who was the individual that the gunshot  
12 residue was collected on in this case?

13 A The field notes from the officer indicate that  
14 it was collected from a Mr. Derion Caldwell.

15 Q And what were the results of your gunshot  
16 residue analysis in this case?

17 A The results on the report that we issued were  
18 negative for both the right hand and the left hand of a  
19 Mr. Derion Caldwell.

20 MR. LESLIE: Pass the witness, Your  
21 Honor.

22 THE COURT: Mr. Newman.

23 **CROSS-EXAMINATION**

24 Q (BY MR. NEWMAN) Is it Mr. or Doctor?

25 A Mr.

1           Q       Mr. Schroeder, I just wanted to ask a couple  
2 of questions. You said that anything after six to eight  
3 hours you would expect, even without washing, for the  
4 residue of gunshot residue to fade away, correct?

5           A       Yes, that's a fair timeline based on the  
6 research that's been conducted based on variances.

7           Q       Real quickly, the way that you do your job  
8 from a procedural standpoint, if you were to be provided  
9 with, say, multiple samples from multiple suspects or  
10 even witnesses or even a decedent in a case, do you have  
11 some method of tying those all together so you have that  
12 information in one place?

13          A       Yes, sir, we do. There's a couple of ways.  
14 We cross-reference the cases, we analyze each collection  
15 kit that has been collected and issue an individual  
16 report per kit, but the cases are cross-referenced.

17          Q       So you would have the ability to know if there  
18 were any other SEM kits submitted to you for analysis in  
19 relation to this case, correct?

20          A       Yes, sir, that's correct.

21          Q       To your knowledge, were there any others other  
22 than Derion Caldwell?

23          A       To my knowledge, no, sir.

24          Q       And you said that with a 45 caliber handgun,  
25 that in the vast majority of cases you would expect it

1 to at least initially leave gunshot residue?

2 A Yes, sir, that's correct.

3 Q Now, understanding that -- understanding the  
4 time lapses and hands can be washed and there can be  
5 transfers, absent that, if you're talking two hours and  
6 15 minutes, would you still expect to find it?

7 A On a surface uninterrupted or, to your point,  
8 sir, not washed or anything else, we would expect to see  
9 gunshot residue after two hours and 15 minutes, yes.

10 Q In the absence of that, as Mr. Leslie pointed  
11 out, it could be due to washing, hand washing, correct?

12 A Yes, sir, that's correct.

13 Q Or transfer?

14 A Correct.

15 Q Or using gloves?

16 A Sloughing off.

17 Q Sloughing off?

18 A Yes, sir.

19 Q Or having never fired a firearm, correct?

20 A That's correct.

21 MR. NEWMAN: I'll pass the witness.

22 THE COURT: Mr. Leslie?

23 MR. LESLIE: Nothing further, Judge.

24 THE COURT: May this witness be excused?

25 MR. LESLIE: Yes.

1 MR. NEWMAN: Yes, Your Honor.

2 THE COURT: Thank you, sir. You are free  
3 to go. Please do not discuss your testimony with any of  
4 the other witnesses.

5 THE WITNESS: Yes, ma'am.

6 THE COURT: Call your next witness.

7 MR. LESLIE: State calls Jill Dupre.

8 THE COURT: Right up here, please, ma'am.

9 (Witness sworn)

10 THE COURT: And please state and spell  
11 your name for my court reporter.

12 THE WITNESS: Yes. My name is Jill, last  
13 name, Dupre, D-u-p-r-e.

14 THE COURT: And you may proceed.

15 MR. LESLIE: Thank you Judge.

16 **JILL DUPRE,**

17 having been first duly sworn, testified as follows:

18 **DIRECT EXAMINATION**

19 Q (BY MR. LESLIE) Ms. Dupre, where do you work?

20 A I work for Harris County at the Institute of  
21 Forensic Sciences in the firearms laboratory.

22 Q And how long have you worked there?

23 A I have been employed with Harris County for  
24 approximately since 2002.

25 Q What are your duties at the Harris County