(Open court, defendant present, no jury)

(Witnesses sworn)

THE COURT: So, the Rule has been invoked. Don't discuss your testimony in the presence of other witnesses or be in the courtroom when another witness is testifying.

And who is your first witness, Alycia?

MS. HARVEY: Davis.

THE COURT: Okay. Mr. Davis, you can have a seat on the first row.

Ma'am, you can wait outside.

(Open court, defendant and jury present)

THE COURT: Thank you. Please be seated.

Ladies and gentlemen, welcome back.

Ms. Harvey, you may proceed.

MS. HARVEY: State calls Dr. William Davis.

THE COURT: Ladies and gentlemen, this witness was sworn outside your presence.

You may proceed.

MS. HARVEY: Thank you, Your Honor.

DR. WILLIAM DAVIS,

having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MS. HARVEY:

Q. Would you tell the jury what your name is?

A. Yeah. Good morning. My name is William Davis.
Q. How are you employed?
A. I am the director of physical evidence at the Harris County Institute of Forensic Sciences.
Q. And as the director of physical evidence, what are your job duties?
A. My job duties are to oversee two sections within the crime laboratory service of the institute. One is the trace evidence laboratory and one is the firearms laboratory.
Q. And what is your educational background?
A. I have degrees in chemistry. I have a bachelor's degree from Syracuse University and a Ph.D. from Columbia University.
Q. Were you the director of physical evidence at the firearms lab back in March of 2011?
A. I was not.
Q. When did you become the director?
A. I became the director in January of this year, 2013.
Q. And before you were the director?
A. Prior to that, I was the trace evidence manager.
Q. And what is a trace evidence manager?
A. I oversaw that little, little piece of the

realm there where we do gunshot residue and fire debris analysis.

Q. Are you, in fact, an expert in gunshot residue?

A. Yes, I am.

Q. And what specific training have you had in that area?

A. The training for the actual analysis was done at the Institute of Forensic Sciences. The instrumentation that we use, I was trained -- taught the basics and operation of it at Lehigh University.

Q. And do you keep up with any changes in the science?

A. Yes, I do.

Q. On -- back on November 13th of 2011, did you do a gunshot residue analysis in the case of the -- in the case of Ms. Dinanno?

A. The date is approximately correct, yes. I'm not quite sure when the exact analysis was. November of '11.

Q. Of 2011?

A. Yes.

Q. Okay. And can you explain to the jury what gunshot residue is?

A. Sure. The term "gunshot residue" is sometimes misleading. People think it's just gunpowder that was

left behind, but the forensic examination of gunshot residue has to do with microscopic particles that are -- that are left behind, but not by the gunpowder, but by the primer that's present in the ammunition itself. The primer is what's responsible for lighting the gunpowder. So, it's this primer residue that we look at.

Q. And when a gun is fired, where does that primer residue go?

A. The primer residue gets caught up in all of the gases that result in the explosion of the gunpowder. Gases routinely will find their way out through any hole. So, it will come out through the front of the weapon. It will come out through ejector ports of semiautomatic pistols, the slide mechanisms of semiautomatic pistols. It will come out the cylinder gaps of revolver-type pistols.

Q. And when the primer residue is ejected from the weapon, where does it go?

A. It will travel, depending on which breach it's going from. It goes tens of feet out the front and within 10 to 15 feet out the sides, but what it's -- as it's ejected, it's liquid. And then it cools off and then it falls. All right? So, it will fall onto a surface from which -- and you can collect it with a piece of tape.

Q. How long will gunshot residue stay on an item after it has fallen there?

A. It -- that will be indefinite as long as that surface is not disturbed.

Q. And what level of disturbance will cause a change or a -- cause the gunshot residue to go away?

A. Minor disturbances. Wind. If it were an outdoor event, wind would be able to -- a breeze will be able to move it around.

Q. Are there specific elements that you're looking for in gunshot residue?

A. Yes. The chemical formulation of primers is -- it's a proprietary thing amongst manufacturers, but they all use the same basic chemical substances. Those chemical substances contain lead, they contain another element known as barium, and a third element known as antimony.

Q. Are those elements readily available in the environment?

A. Individually they are.

Q. How about together?

A. Together, in -- in the form of particles that have all three of those elements, the only source is primer residue.

Q. So, when you see these particles that contain

lead, barium, and antimony, is it fair to say there's -- the only place that those particles can come from is a gunshot primer?

A. That's correct.

Q. Now, if the particles get moved around, can I just -- having walked through a room, say, days, months, weeks, after a gun has been fired, can I pick it up on myself?

A. There's a possibility of that.

Q. And do you -- do you do or are you aware of studies to show the existence of gunshot residue on your average person?

A. Not necessarily your average person.

Q. Okay. So, what kind of studies have there been to examine gunshot residue and its existence on people?

A. The most prevalent studies are the amount of gunshot residue that you can find on police officers that are assigned to desk duty. So, police officers that report to work but are not necessarily involved actively in -- with their service revolvers.

Q. And in those studies, what kind -- or what are the levels of gunshot residue found on those officers on desk duty?

A. The levels that have been found are on the order of one particle per hundred people.

Q. So, in -- when you're doing analysis and you are looking for particles, how many particles does it require to be present on an item in order for you to make a conclusive analysis?

A. We -- our procedures require three.

Q. How is gunshot residue collected?

A. It is -- it's collected using a piece of special tape. That tape is double-sided. So, one side is already affixed to a special aluminum platform that allows one to just dab the other side onto a surface of interest. And then that -- what that does is that sort of keeps people from touching the piece of tape because it's in a special container. And then you can cover it up and submit it to the laboratory for us to analyze.

Remember, these are microscopic. They're not -- these particles are not visible to the naked eye. So, whoever does the collecting has to have, you know, some knowledge of why and where to collect.

Q. And, I guess, what kind of knowledge is it that you would want someone to know before they go and do a collection?

A. The circumstances of things, like what kind of activity had been -- if known, what activities that surface had undergone.

Q. And with respect to -- did you do a number of

gunshot residue analyses in this case?

A. Yes, I did.

Q. And the first one I want to talk to you about is the gunshot residue that you conducted on the victim in this case, Henry Joseph Breaux.

A. Yes.

Q. Now, where does your -- these lifts that you're talking about, the stickies that get submitted to you, where does that come from in a case where you have a decedent who's, say, in the M.E.'s office?

A. The procedure of the pathologist service -- pathology service is to collect gunshot residue on every gunshot victim, the hands of every gunshot victim.

Q. And who does that collection?

A. That is done at autopsy.

Q. And how is it sent to you?

A. Usually it is sent to our laboratory via the agency that is investigating the death.

MS. HARVEY: May I approach the witness, Your Honor?

THE COURT: You may.

Q. (By Ms. Harvey) I am showing you what has already been marked and entered as State's Exhibit 108. This is sealed, but inside we've had testimony that there are -- that there is a gunshot residue kit that

was submitted from the M.E.'s office (indicating).

A. Yes.

Q. And you can verify that by feeling it, yes?

A. Yes. I can actually read the labels.

Q. And the labels that you're reading, are those, in fact, the gunshot collection disks that you tested?

A. Yes.

Q. And with respect to the hands of the victim in this case, Henry Joseph Breaux, what did you find in terms of gunshot residue particles, whether they were present or not present?

MR. VARELA: We'll object, Your Honor, to denial of confrontation and cross. May I take this witness on voir dire, please?

THE COURT: What is your specific objection?

MR. VARELA: I've got reports that show the analyst was a Steven Houck and not this witness.

THE COURT: You may take the witness on voir dire.

VOIR DIRE EXAMINATION

BY MR. VARELA:

Q. Doctor, did you conduct the analysis in this case or did Steven Houck of your office?

A. The analysis was originally performed by Steven

Houck and I reanalyzed it.

Q. Did you file a supplemental report?

A. Yes, I did, sir.

Q. Did you bring a copy of that with you?

A. Yes, I did.

THE COURT: Your objection is overruled. You may --

MR. VARELA: I'll withdraw the objection, Your Honor.

THE COURT: Thank you.

You may proceed, Ms. Harvey.

DIRECT EXAMINATION

CONT'D BY MS. HARVEY:

Q. What did you find with respect to whether or not there was gunshot residue particles present on the hands of the victim in this case, Henry Joseph Breaux?

A. In this case, there was -- there were two of these lifts that were submitted. One labeled "right hand," one labeled "left hand." The left hand had two particles of gunshot residue.

Q. And what does two particles of gunshot residue indicate to you?

A. It indicates to me that there's gunshot residue there, but it's not enough for me to say that it's primary -- the primary source was a shooting event.

There is a small probability that that was transfer.

Q. When you have someone in this case who has been sent to the medical examiner's office with a number of gunshot wounds, is it uncommon to find gunshot residue on a person who has, in fact, been shot?

A. No.

Q. And why is it -- why is that not uncommon? Why does that not surprise you?

A. Well, as I mentioned, the gunshot residue does travel out any breach in the weapon. The main breach where it's going to be traveling is out through the barrel.

Q. So, in terms of when the gunshot residue was expelled from the barrel, or wherever, that residue then could have been transferred on him that way, correct?

A. Yes.

Q. And that's not indicative that he was handling a gun?

A. No.

Q. Did you also test a number of clothing items in this case?

A. Yes.

Q. And I would like to start with the pajama shirt and pajama pants, which are -- they have already been entered as State's Exhibits No. 113 and 205. The

contents of these bags were previously admitted. And inside the bags, what is the clear vial with the brown top (indicating)?

A. This is an example -- this is a specific lift that was used for that item of clothing.

Q. And is that the lift that you tested?

A. Yes, it is.

Q. In State's Exhibit No. 25, again, the contents which have been already admitted and present inside is another one of those clear vials with a brown top. Can you identify that for us (indicating)?

A. This is also a lift that was used for the pants.

Q. Okay. And with respect to both the pajama shirt and the pajama pants, what did you determine in terms of the presence or absence of gunshot residue?

A. There were no particles of gunshot residue found on either item.

Q. Now, there has previously been testimony that the pajama pants were wet in a pile of clothing when they were found. How would wet pants affect gunshot residue, if at all?

A. It would have an effect that it could possibly reduce the number of particles, if there were any particles there to begin with.

Q. What if the pants were placed in water before the gunshot residue lift was taken?

A. Again, that is a significant activity. And activities reduce the number of particles that can be recovered, if they're there to be recovered in the first place.

Q. Secondly, I'd like to look at the socks and the white blouse that were recovered in this case. And those have previously been admitted as State's Exhibits No. 22 and 24. And in State's Exhibit 24, did you test a gunshot residue cylinder as we've seen in the other cases in State's Exhibit 24 (indicating)?

A. Yes.

Q. And the same with State's Exhibit 22?

A. Correct.

Q. In both of those instances, what did you determine with respect to whether or not there was gunshot residue present?

A. There were two particles on the socks and two particles on the blouse.

Q. And what conclusions, if any, can you draw when you find two particles on clothing?

A. Again, gunshot residue was present. There is a possibility of secondary transfer.

Q. With respect to the towel, and that was State's

Exhibit 48, a small white towel that was tested for gunshot residue, what, if anything, did you determine with respect to the towel?

A. The towel was positive for gunshot residue. We found 20 particles.

Q. Now, hypothetically, if the towel was found on the floor of a closet where a shooting was alleged to have occurred, does the -- does the presence of gunshot residue on that towel surprise you?

A. No.

Q. Would you expect to have gunshot residue on a towel found in a closet where a shooting was alleged to have occurred?

A. Yes. If -- any surface that is exposed to these plumes, it's not surprising that gunshot residue is present.

Q. Additionally, did you also test a pair of slippers?

A. Yes.

Q. And those slippers are in evidence as State's Exhibit 73. Are those, in fact, the slippers that the -- did you test a vial, a gunshot residue collection kit from these slippers?

A. Yes, I did.

Q. And what did you find with respect to gunshot

residue present on the slippers?

A. Again, I found there were 13 particles on that, a positive result.

Q. And what conclusion, if any, can you draw from 13 particles on the slippers?

A. That it most likely resulted from a primary association with a shooting event.

Q. And when you say "a primary association with a shooting event," can you tell us in layman's terms what that means?

A. That means that it was directly exposed to a plume or a surface that had been exposed to a plume without any intervening steps.

Q. So, the slippers were present when the gun went off?

A. Not necessarily. They could have been touched immediately after a gun went off.

Q. With respect to the gunshot residue collection from the hands of Marcia Dinanno, I want to show you that. It has been admitted into evidence as State's Exhibit 110. And inside this white envelope, again, we find a number of vials (indicating).

A. Yes.

Q. What are these vials?

A. These vials are -- it's a -- it represents

three samples taken from the subject, from the right hand, the left hand, and then one is labeled as a control.

Q. And what is -- what is the control?

A. The control is meant to be one that is known to be negative.

Q. And when we talk about the collection, the sticky surface is the bottom side of the cap?

A. If you remove the clear plastic cap, it will expose -- you can do it. It's not going to really have much of an effect. Yeah. The little black -- that looks like a "D," but that's a piece of tape that is used. You just take that and dab the surface of interest.

Q. And with respect to the hands of the defendant, Ms. Dinanno, what did you find in terms of gunshot residue present?

A. In this particular case, there were five particles on the left hand.

Q. And what conclusion, if any, can you draw with respect to five particles of gunshot residue being present on her left hand?

A. The presence of those particles most likely resulted from either firing a weapon, being in close proximity to a fired weapon, or handling a weapon that

was recently fired.

MS. HARVEY: Pass the witness.

THE COURT: Mr. Varela.

MR. VARELA: Yes.

CROSS-EXAMINATION

BY MR. VARELA:

Q. Doctor, did you bring a copy of your own personal reports with this --

A. Yes, sir.

Q. -- analysis with you today?

MR. VARELA: Move for production under Gaskin, Your Honor.

THE COURT: Granted.

MR. VARELA: Thank you, ma'am.

May I have a minute, Your Honor?

THE COURT: You may.

(Pause)

MR. VARELA: Okay. May I inquire, Your Honor?

THE COURT: You may.

Q. (By Mr. Varela) Doctor --

A. Yes, sir.

Q. -- you also had, previous to your analysis, an analysis of the same items done by Steven Houck. Did I pronounce his name correctly?

A. Houck, yes.
Q. Houck?
A. Houck.
Q. Have you seen his reports with his results?
A. Yes, I have.
Q. And in some cases notably the measurement of the number of particles --
MS. HARVEY: Your Honor, I'm going to object to the introduction of a prior report. This is why we had it retested.
THE COURT: Sustained.
You can rephrase your question.
Q. (By Mr. Varela) Does it surprise you that an analysis conducted by your office at one time of the same item could differ from an analysis conducted at another time?
A. No, it does not.
Q. Okay. So, you expect varying results testing the same item, correct?
A. There will be variances in the numbers, yes.
Q. You're looking at very small elemental particles, correct?
A. Yes, sir.
Q. You're looking for lead atoms, right?
A. Not atoms. You're looking for particles that

contain the three elements, lead, barium, and antimony.

Q. So, all three atoms have to be present for you to call it gunshot residue?

A. Elements. All three elements.

Q. Yes. Where you see a particle and it contains a barium atom, a lead atom, and an antimony atom, then you say that's particle of gunshot residue, correct?

A. That's correct, sir.

Q. All right. And these little items are not visible even with an optical microscope, correct?

A. That's correct.

Q. You have to use a scanning electron microscope to find them?

A. Yes, sir.

Q. And there's no way that you can look at an item with either the naked eye or the eye assisted by an optical device and tell you're in the presence of gunshot residue, correct?

A. That's correct.

Q. The things that make up gunshot residue are simply too small?

A. Yes.

Q. So, an electron microscope focuses a beam of electrons, does it not?

A. Yes, that's correct.

Q. When that beam of electrons hits something that you're looking for, it gives you a readout that you're finding what you're looking for, right?

A. It alerts us to the fact that something may be present that's worth looking at again.

Q. Right. But you can't -- the beam of electrons doesn't help your eyes to see anything, it's just simply too small?

A. Right.

Q. Okay. Let's talk about guns for a second. You have studied what happens when guns are fired, correct?

A. Yes, sir.

Q. Have you ever fired a gun?

A. No, sir.

Q. You've never fired a firearm?

A. Nope.

Q. Okay. Well, let's just talk about it. Let's talk about Exhibit No. 66, which is in evidence. The room is kind of crowded. I'm going to try to point it in a direction where nobody is. When a firearm is fired, a number of things come out the end of the barrel, correct?

A. Yes, sir.

Q. I guess generally most importantly a bullet comes out the end of the barrel or a projectile?

A. Yes, sir.
Q. And that bullet is made out of typically a lead core?
A. Yes.
Q. It may be an all-lead bullet, correct?
A. It could be.
Q. It could be a bullet that's partially jacketed with a copper jacket?
A. Yes, sir.
Q. Or some other jacketing material, correct?
A. Yes.
Q. Or it could be a lead core that's totally enclosed by a jacket, right?
A. Yes, sir.
Q. But the lead in the gunshot residue you're looking for doesn't come from the bullet, right?
A. It may not.
Q. It comes primarily from the primer, correct?
A. Yes, sir.
Q. Let's talk about the primer. When you have a case, a cartridge, obviously the bullet is at one end of the cartridge, right?
A. Yes, sir.
Q. And at the other end of the cartridge, there's that little round thing in the head of the cartridge,

right?

A. Yes.

Q. And that's the primer?

A. The primer is contained within that, yes.

Q. Right. We call that the primer. And the priming compound is within that?

A. Yes.

Q. And the primer, I guess -- you know approximately how an automobile engine works, don't you?

A. Yes, sir.

Q. In a cylinder in a car, you have a fuel-air mixture, but it has to be ignited by something, correct?

A. That's correct.

Q. That would be a spark plug?

A. In the case of a gasoline engine, yes.

Q. We are talking about an ordinary passenger car with a gasoline engine. You have a spark plug that provides an electric spark that provides heating that lights that fuel-air mixture, correct?

A. Yes.

Q. Well, in this situation, you have a cartridge that's full of what we call smokeless gunpowder, right?

A. Some propellant.

Q. Okay. The propellant is hard to light on its own, harder than some other types of compounds?

A. Well, I wouldn't expose it to a match.
Q. Yeah, but --
A. It will burn. If I had it out in a ditch on this surface, it would be benign.
Q. Right. So, you have to have that match to get that powder going, correct?
A. Yes.
Q. And the little primer provides the -- I guess, the initial flame or the spark, so to speak, that gets that propellant burning?
A. Yes.
Q. And it's the component that causes the lead, the barium, and the antimony to be found where a gun is firing?
A. That's correct, sir.
Q. Okay. So, let's talk about this. When a firearm is fired, in addition to that bullet coming out the end of the barrel, other things come out the end of the barrel, too?
A. Yes.
Q. There's a quantity of a very hot, rapidly expanding gas?
A. Yeah.
Q. There is always particles of unburned powder?
A. Yes.

Q. There is also a very fine ash that comes out that's completely burned powder, correct?
A. In some instances, yes.
Q. And then all that is mixed up with this gunshot residue from the little primer, right?
A. Yes.
Q. Okay. Finding gunshot residue on a person or object -- let's talk about people first. Finding gunshot residue on a person doesn't mean that person has just fired a gun, right?
A. That's correct.
Q. The more particles you find in a given test, that increases the probability that that person was holding a gun when it was fired --
A. No.
Q. -- correct? No?
A. No.
Q. Then how does it work?
A. The number has to do with whether or not -- the statistics are whether or not there was -- you were within that area where the residue found itself after the shooting event. So, it's -- it's the primary association with the event. It's not the firing of the weapon. It's being near the weapon. The test will never say that a person fired the weapon --

Q. Right.
A. -- statistically or otherwise.
Q. So, when I have gunshot residue on my hand, I could have gotten it from firing this weapon, correct?
A. That's one way of doing it.
Q. I could have gotten it from handling a firearm that had recently been fired several times?
A. Yes, sir.
Q. Obviously, cleaning a weapon would release some of these particles that are still within the firearm, correct?
A. Yes, sir.
Q. I'd get that on my hands?
A. Yes, sir.
Q. In fact, cleaning a firearm, normally people like run patches soaked with fluid down the chamber, down the barrel, and down these cylinder chambers, correct?
A. I -- it's beyond my purview. I don't own a weapon or fire a weapon, but if that's how people clean them, that's how they clean them.
Q. You don't know how people clean weapons?
A. No.
Q. If they clean them with that sort of method, by wiping it out inside and out, that would release some

more of these particles, correct?
A. Yes, sir.
Q. And if I, say, took this gun which had been fired several times and rubbed it on my clothes, that would transfer a quantity of these gunshot residue particles onto my clothes, right?
A. It could.
Q. As well as my hand?
A. Yes, sir.
Q. So, that's why no examiner will say: Oh, there's gunshot residue on X's hand; therefore, X fired a firearm. Correct?
A. Correct.
Q. You just can't say that.
You could get -- you could get a transfer from one person to another of gunshot residue particles, couldn't you?
A. You can.
Q. If I fire a gun several times and then shake your hand, there could be a transfer?
A. Yes, sir.
Q. If I pat you on the back, that could be a transfer?
A. Yes, sir.
Q. It could be transferred from, say, an article

of clothing to another article of clothing?

A. Yes, sir.

Q. Let's talk about houses. If a house has no guns in it, it's a fair statement to say it's probably not going to contain any gunshot residue, right?

A. Yes, sir.

Q. As a general rule that would be true?

A. Yes, sir.

Q. If you had a household where guns are fired, stored, cleaned, that would increase the possibility that certain surfaces would contain gunshot residue?

A. Yes, sir.

Q. And gunshot residue doesn't evaporate or go away on its own, does it?

A. That's correct.

Q. If you -- let's say this State's Exhibit 66 was covered with gunshot residue. And I've been kind of putting it on surfaces here. If this surface wasn't cleaned, we could come back in a year, swab it, and, quite likely, you'd find those particles still there, correct?

A. If there were particles on that item when it was placed on that surface --

Q. Right.

A. -- in the beginning, yes.

Q. They'd still be there, wouldn't they?
A. They could be.
Q. And, obviously, up the scale. If you had a household where -- are you aware that some people reload their own ammunition?
A. Yes, sir.
Q. They actually take that fired case, replace the primer, put powder in it, and put the bullet in and fire it again?
A. Yes, sir.
Q. It's a little more complicated than that, but that's the basic operation, right?
A. Yes, sir.
Q. Now, that would release a whole lot of gunshot residue around a house or a workshop where all that occurred, correct?
A. Yes, sir.
Q. You'd have a large quantity of fired cases being handled, cleaned, manipulated; you'd have expired primers kicked out of the case in quantity. That would just release a number of particles of this stuff, right?
A. Yes, sir.
Q. Okay. Now, Mr. Breaux had gunshot residue on his left hand, correct?
A. That's what we found.

Q. Certain particles on his hand?
A. Yes, sir.
Q. You can't say how they got there, can you?
A. No, sir.
Q. He could have fired a weapon?
A. Yes.
Q. He could have been present and his hand in close proximity to a weapon as it was fired?
A. Yes.
Q. He could have come into contact with any kind of surface that had gunshot residue on it, correct?
A. Yes.
Q. Either while he was alive or after he was dead, right?
A. Correct.
Q. Now, gunshot residue, we've already said about -- what -- four times is a very small particle?
A. Yes, sir.
Q. When it's fired out of a gun, the gunshot residue doesn't go as far as the bullet, correct?
A. No.
Q. The bullet can go anywhere from hundreds of yards to a mile out of a gun, correct?
A. A long distance.
Q. But we're not talking about those kind of

distances with gunshot residue?

A. No, sir.

Q. Typically only a few feet out the end of the barrel and it basically slows down and becomes a part of the atmosphere, right?

A. Tens of feet.

Q. Right. But you wouldn't expect to see across a large room gunshot residue to be transported immediately?

A. No.

Q. If I fired a gun from that corner of that room, a pistol, you would not expect gunshot residue to be found on that opposite wall, correct?

A. Probably not.

Q. But in an area -- let's say, in this area like where these clerks are working, it wouldn't shock you at all to find some element and particles of gunshot residue in that area?

A. That's correct, sir.

Q. And these things being very small particles can remain airborne for quite some time, correct?

A. That's not certain.

Q. Well, you can compare it to a very fine dust that remains airborne, right?

A. They're very dense.

Q. So, they're going to sink out of the atmosphere?

A. Yes.

Q. But they don't fall as fast as a big bullet or a buckshot made out of lead or that kind of thing, correct?

A. I don't know if -- there are -- it's a tough question --

Q. It is, yeah.

A. -- to answer because, I mean, they -- yes, they do have some -- we call it buoyancy because of their size. They'll get caught up in air currents that keep them from falling, you know, as if this pen were falling. It's not that (indicating). So, they're caught up in these air currents, but it would be -- I guess the best analogy would be if you -- I remember as a kid I did have an airgun that we used to put -- stick it in the dirt and you get a clump of dirt in the end and you shoot the clot of dirt. And the dirt would go, but the little pieces of dirt would go further and would get in your friend's eye and you'd get in trouble for a week, but the big clot would fall quickly. So, that's the way I look at it.

Q. Okay. You found spots of what you considered to be five particles on Marcia Dinanno's hand, correct?

A. Yes, on that stub. Yes.
Q. And you found 13 particles on slippers?
A. Yes, sir.
Q. Now, the slippers. Let's talk about shoes. Okay? We talked about what, guns, houses. Now we'll talk about shoes. If you'll look at me, you'll see I'm wearing a pair of shoes. If I stand here and fire that revolver, like State's Exhibit 66, some gunshot residue, you would expect, would precipitate out of that revolver, through the atmosphere, and fall on the shoes?
A. Yes, sir.
Q. All right. Now, let's suppose I am not standing in the shoes, but there's a pair of shoes in front of me and I fire that same revolver. That same process may take place onto the slippers, correct?
A. Yes, sir.
Q. You can't tell if the person who was firing the gun was standing in the slippers or not?
A. That's correct.
Q. Okay. All you know is that a gun was, apparently, fired near the slippers and gunshot residue fell down onto the slippers?
A. Yes, gunshot residue was on the slippers.
Q. Right. Or the gunshot residue was precipitated onto the slippers some other way, correct?

A. Right.

Q. By some means of transfer, other than a direct transfer from a firearm to the slippers?

A. Correct.

Q. All right. You don't know whether Mr. Breaux was right-handed or left-handed, do you?

A. I do not.

MR. VARELA: Okay. Pass the witness.

REDIRECT EXAMINATION

BY MS. HARVEY:

Q. Who is Steven Houck?

A. Steven Houck was an employee of the institute. He was a forensic chemist that was assigned to the trace evidence laboratory. He performed gunshot residue analysis and fire debris analysis, as well as drug chemistry analysis. He was originally from West Virginia. He got homesick and went and took a job in Roanoke, Virginia, Department of Forensic Sciences.

Q. So, instead of flying him back in from Virginia, did we ask you to retest the testing that he had originally done?

A. Yes, ma'am.

Q. And, I guess, if you do a retest of something and your analyses and your conclusions come out completely different than the first analysis, what would

happen?

A. I would issue a report on what I found. And then we'd open up a nonconformity, if it were -- if there were a substantial -- that it changed the report substantially, we would investigate it.

Q. And was this case investigated for any level of nonconformity?

A. No.

MS. HARVEY: Pass the witness.

THE COURT: Mr. Varela.

RECROSS-EXAMINATION

BY MR. VARELA:

Q. Do you know which hand Ms. Dinanno was tested for?

A. Which?

Q. Which hand? Which hand or both hands was she tested for for gunshot residue?

A. The results of gunshot residue were only on one hand, the left hand.

Q. Okay. Which hand was that?

A. The left hand.

Q. Was the right hand also tested?

A. There was a stub submitted. It was labeled as "right hand."

MR. VARELA: All right. We'll pass the

witness.

REDIRECT EXAMINATION

BY MS. HARVEY:

Q. Would you expect to find more or less gunshot residue on a person after they bathed?

A. Less.

Q. Would you expect to find more or less gunshot residue on a person after they changed clothes?

A. Less.

Q. When you talked about the -- the fact that this study was done on police officers who are on desk duty and they were found to have one particle per hundred police officers, how statistically significant is it to find five particles?

A. It's very, very large statistically. It's on the order of a billion to -- in the same population of police officers, the odds of finding five on one of those police officers is about a billion to one.

Q. When you are talking about transfer and transfer of gunshot residue, would you expect -- if you have source one and a source two onto which it's transferred, when tested, would you expect to find more particles on the original source or the source onto which it was transferred?

A. Could you repeat that?

Q. Sure. And I'm sorry. It's kind of a bad question.

But let's say a gun gets fired and there's gunshot residue on the table. And I walk along and I touch the table. Now we test my hand and the table. Which would you expect to have more gunshot residue on it?

A. I can't answer that.

Q. In terms of items that have been washed, say, with soap, would you expect to find more gunshot residue on them or less than after -- than before they were washed with soap?

A. I would expect -- if it were there to begin with, I would expect less.

MS. HARVEY: Pass the witness.

MR. VARELA: No further questions, Your Honor.

THE COURT: May this witness be excused?

MS. HARVEY: Yes, Your Honor.

THE COURT: Thank you, Doctor. You may step down and you're excused.

Call your next witness, Ms. Harvey.

MS. HARVEY: State calls Jill Dupre.

THE COURT: Ladies and gentlemen, this witness was sworn outside your presence.