1 Police Department crime lab?
2 *A.* Couple of months short of four years.
3 ***Q.*** And where are you currently assigned? What
4 is your responsibilities there?
5 *A.* I am a case writing analyst. So, I can do
6 testing, serological testing and DNA testing. I'm
7 also a supervisor in the laboratory. I supervise 10
8 other analysts, help out with training. And I'm also
9 the backup technical leader for the DNA section.
10 ***Q.*** And what sort of training and educational
11 experience do you have?
12 *A.* I have a Bachelor's degree in biology with
13 a minor in chemistry. I also have a Master's degree
14 in forensic molecular biology with a concentration in
15 molecular biology.
16 And I have been working in the field
17 for almost 12 years. Initially, 12 years ago when I
18 first started, I did a lot of training, a lot of
19 hands-on, a lot of testing, a lot of written tests,
20 oral tests. I have testified probably 50 times. So,
21 I have got a lot of training and experience.
22 ***Q.*** Okay. And what sort of continuing
23 education have you had?
24 *A.* Each year we're required to have eight
25 hours of continuing education. So, actually, I have

fulfilled my eight hours. Last week we had a speaker come in and give a presentation on some new technology in the field; and so, that was my continuing education for the year.

Q. I want to turn your attention to this particular case that you're here for to testify today. What was the incident number for the case that you worked on?

A. It was 083298010.

Q. Okay. And does the case -- or your notes indicate the name of the defendant or the complaining witness?

A. The defendant is Rodney Milum, Jr.; and the complainant is Imani Hilton.

Q. And what is it exactly that you did with regards to this case?

A. Is it okay if I check my notes?

Q. Sure.

A. I extracted some samples, quantified some samples, amplified some samples; and I loaded some samples onto our genetic analyzer.

Q. Briefly, just tell me about extraction. What does that consist of?

A. Basically, you want to get the DNA out of the cells that they are contained in; and so, we use

a process of a chemical that helps break up the bonds and cell walls to get the DNA out. And then we must clean it up in order to get rid of all the other junk, if you will, that's inside of a cell so we can get that pure DNA that we're looking for.

Q. And you also said that you were responsible for amplification of some samples. What does that mean?

A. Basically, during the amplification process, there are certain regions on the chromosome that we are looking for forensically. So, we first target those locations; and then we try to make a bunch of copies so that we can have ample product to hopefully get a good DNA profile we can work with.

Q. And what about the load process?

A. The loading process is basically taking that amplified DNA and putting it into a genetic analyzer. That genetic analyzer runs the samples and ultimately gives us a DNA profile that we, as analysts, are trained to look at and determine if it is usable; and if it is, if we can draw conclusions.

Q. Now, are you -- are you qualified to issue conclusions with regards to DNA testing?

A. Yes, I am.

Q. Okay. And have you done that before in

other cases?

A. Yes, I have.

Q. Okay. Did you do that in this case?

A. No, I did not.

Q. Okay. In your training and experience, when a DNA analyst is issuing a conclusion to their work that they have done in a case, a lot of times people expect for DNA analysts to say "This is a person's DNA profile" or "This DNA belongs to this person" because that's kind of what happens on TV, right?

A. Right.

Q. Okay. Is that the reality of your practice? Is that how things happen according to your training and experience?

A. No.

Q. Okay. And why is that?

A. Well, we can't test every single person's DNA in the whole world; and so, we have a database that basically is a representation or how frequent or how rare certain locations on the DNA are. And so, once we have a profile that we have obtained from an evidence item, we can compare that to a reference that we might have and see if the locations in the reference match up with the locations that are on the

1 evidence.
2 If there is a match, then we can do
3 statistics to kind of back that up and to give that
4 information to let you, the jury, or investigators or
5 attorneys know if it's what we might call a good
6 match. Something that has very low statistics or
7 something that might be a lower match that has
8 something like 1 in 4 or 1 in 20, sometimes we see
9 stats that are 1 in quadrillion or quintillion,
10 that's really large.
11 ***Q.*** Okay. So, let's talk about the stats that
12 are really, really low. What -- in your training and
13 experience, what does that indicate to you?
14 *A.* It could be an indication that there is a
15 mixture of DNA. So, sometimes when we're looking at
16 evidence profiles, we don't always get a sample that
17 has just one person's DNA. We might get something
18 that has had a whole lot of people's DNA; and,
19 therefore, we have to consider all of the
20 possibilities of what that evidence profiling
21 entails. And so, that would be one reason why
22 statistics would be lower.
23 When you have a single source profile,
24 that's when you get the statistics that are up in the
25 quadrillions or quintillions. Sometimes we don't

always get a great DNA profile. We might be missing information, and so after the location that we don't have all the data for, we can't perform a statistical calculation on those locations; and so that will drop the statistical numbers, as well.

Q. Okay. So, for what you would consider to be a great DNA profile, what sort of statistics would you generally expect to see?

A. Well, just to give you an idea, the earth population is about 7 and a half, maybe approaching 8 million; and so, anything higher than that, I would consider to be a pretty good stat. Therefore, you can say that you would expect to take the whole population of the earth; and you wouldn't expect to see that DNA profile again.

Q. Okay.

MR. LEONARD: Judge, may I approach?

THE COURT: You may.

Q. ***(BY MR. LEONARD)*** All right. And just to show you, are you familiar at all with some of the statistics that were given in this particular case?

A. I looked at the report once; but other than that, I haven't really looked at them.

Q. Okay. And just from your training and experience, would you consider -- let's say a partial

male DNA profile, 1 out of 1.5 million, what kind of statistics would you consider that to be?

A. I would think it was a portion profile, and the statistics was still 1 in 1.5 million. That's pretty high for only having a part of the information. So, that would tell me most likely it came from a single-source profile.

Q. Okay. What about a full-male DNA profile that was, let's say, 1 in 54 quintillion, what kind of statistics would you consider that to be?

A. Very high.

Q. Okay.

MR. LEONARD: I pass the witness.

THE COURT: Thank you.

Mr. Smith?

CROSS-EXAMINATION

Q. ***(BY MR. SMITH)*** Do you just do statistical analyses, or do you do any steps in the process?

A. In this case I actually did most of the laboratory work. I didn't do the statistics calculations.

Q. Okay. And it's possible for DNA to be transferred from one item to the other; is that right?

A. It's possible, yes.

1 **Q.** By contact --
2 *A.* Yes.
3 **Q.** -- right?
4 And depending on the contact, you
5 might have a situation where you might get a partial;
6 is that right?
7 *A.* That's one explanation.
8 **Q.** Another concept that I want to kind of talk
9 with you about is when -- when you have a -- a major
10 profile that's found on an item, it is possible that
11 that major profile can mask or cover up minor
12 profiles; is that right?
13 *A.* It's possible.
14 **Q.** And you have seen that happen before,
15 right?
16 *A.* Yes.
17 **Q.** And in those circumstances, you're unable
18 to tell whether or not there is another person's DNA
19 contained within that sample; is that right?
20 *A.* There could be some indications that there
21 might be an additional contributor. A lot of times
22 we see it with sexual assault evidence where there is
23 a ton of female DNA and just not a lot of male DNA;
24 and so, sometimes the female masks that male. So, we
25 could do some additional tests to try to bring up the

1 male profile.
2 **Q.** All right. In this particular
3 circumstance, there was an allele that was taken from
4 the epithelial portion of the panties that turned up
5 a 12. That would have been the D5-S818 allele; is
6 that correct?
7 *A.* Yes.
8 **Q.** Okay. Neither one of the two known samples
9 contained a 12; is that correct?
10 *A.* That's correct.
11 **Q.** So, that would mean somebody else's DNA was
12 there, correct?
13 *A.* Well, given the fact that it looks like
14 there are additional alleles on other places,
15 perhaps. This 12, if we were just looking at this
16 one location, it's possible that that 12 could be
17 stuttered, which is something that we see happen in a
18 location that would be -- like, for example, that 13,
19 sometimes we will see a small amount of what we call
20 stutter come up in the base pair position, that is
21 one before that, which would be one explanation for
22 that 12.
23 **Q.** Okay. Also, in that particular profile, if
24 you were to look at the location TPOX, there is an 8
25 there in minor as well as an asterisk; is that

1 correct?
2 *A.* That's correct.
3 ***Q.*** That asterisk denotes there is another peak
4 out there that's not come out; isn't that right?
5 *A.* Below the threshold.
6 ***Q.*** Below the threshold.
7 If you were to look at the known
8 buccal swabs of Rodney Milum, in that particular
9 location, which is TPOX, he is only an 8; is that
10 correct?
11 *A.* That's correct.
12 ***Q.*** And there is another unknown allele that
13 appears in the first location which is D8S117; is
14 that right?
15 *A.* There is a 14. Is that what you mean?
16 ***Q.*** Yes, that is 14.
17 *A.* A minor.
18 ***Q.*** Then there is an unknown allele; is that
19 correct?
20 *A.* On the portion of the panties from the
21 epithelial fraction?
22 ***Q.*** I'm talking about that, yes, that is true.
23 There is a 14 there. That's a minor?
24 *A.* Uh-huh (affirmative.)
25 ***Q.*** But when you look at the sperm fraction,

which is just below the sperm fraction from the carpet, there is an unknown allele there, too, correct?

A. Right. The sperm fraction from the carpet that is 14; and then this is an asterisk, again. So, it's below the threshold.

Q. Okay. And then if we go back to D5S818 one more time, in the sperm fraction from the carpet, there is an unknown allele there, as well, right?

A. It's below the statistics. So, we don't know what it is.

Q. Okay.

A. Or if it's even real.

Q. And -- but that's an indication that there might be something there; is that correct?

A. That's correct.

Q. Okay.

MR. SMITH: Pass the witness, Your Honor.

THE COURT: Thank you.

MR. LEONARD: Nothing further from the witness, Judge.

THE COURT: Thank you.

Then you're excused.

THE WITNESS: Thank you.

(Witness released)

THE COURT: Does the State have any other witnesses?

MR. LEONARD: No, Judge. The State rests.

THE COURT: Thank you.

So, tomorrow morning, if the Defense wishes to present any evidence, the Defense case will begin. We finished all the witnesses. So, all the conflicts got resolved. So, you don't have to worry about that.

Tomorrow I'd like for you to come in at 10:30 instead of 10:00 so we can get some things done before you get here. Please remember all of the instructions I have given you before. Don't discuss the case with anyone or read or listen to anything about the case. We will see you tomorrow at what time?

A JUROR: 10:30.

THE COURT: All right. Great. Thank you.

All rise, please, for the jury.

(Jury released)

THE COURT: Mr. Smith, if you have a motion, let's do that tonight, save time in the