Witness: Angelynn R. Moore

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Called by: People (prosecution)

Phase: Guilt

Examinations: Direct – David Harris (continued from previous day)

Day 2 of 2 for this witness

Court: San Mateo County Superior Court, Redwood City (People v. Scott Peterson)

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July 22, 2004

D. HARRIS: Ms. Moore, I'm going to present back to you the photographs that were marked yesterday afternoon. And you've had a chance to look at these before resuming the stand today. Do you recognize what's depicted in those photographs?

MOORE: Yes.

D. HARRIS: And these photographs are of the bags and some of the contents of these bags, items that you either prepared or examined?

MOORE: Yes.

D. HARRIS: What I'd like to do is present, put up on the screen up there 1MOORE: And can you describe for us what this is in this photograph?

MOORE: I recognize the one in the middle as an envelope I prepared to send a sample to the FBI, and the one on the right is a transport envelope, and the one on the left I don't recognize.

D. HARRIS: Okay. Let me just go through this. When you either receive something or you package something off to send it to someplace else, do you use these envelopes and, and make notations on them?

MOORE: Yes.

D. HARRIS: Let me show you a closer up of some of these envelopes. 162 B. Do you recognize this?

MOORE: Yes.

D. HARRIS: And this has an item number of 18-A. Is this the blood card that you were referring to yesterday?

MOORE: Yes.

D. HARRIS: Do you recognize this or see some handwriting that you're familiar with up there?

MOORE: In the top left corner is our case number and my initials and the date I opened the sample.

D. HARRIS: Now, it says that there's a, on the preprinted label there is some letters, EDTA, with a circle around it. Is that the circle that you were describing yesterday? Or let me try that again. That says stain type. Can you explain to us what that EDTA is.

MOORE: It's a preservative used for the blood.

D. HARRIS: Looking at 162 E. I'm not sure if you can see it, but did the, after you performed your tests, were the items repackaged and submitted to the FBI at some point in time?

MOORE: Yes.

D. HARRIS: And are we looking at another photograph up here in the top left of this that's that same 18 A part that we just looked at?

MOORE: Yes.

D. HARRIS: And this was after it was resealed and submitted back to the FBI?

MOORE: Correct.

D. HARRIS: Showing a closeup, 162 I. Does that appear to be the same, same item?

MOORE: Yes.

D. HARRIS: Underneath the sealed tape at the top, can you barely make out your initials again that you previously described in the other photograph?

MOORE: Yes.

D. HARRIS: Showing you 162 C, do you recognize this particular package?

MOORE: Yes, I do.

D. HARRIS: And how is it that you recognize that package?

MOORE: I can see on the top right corner our case number, my initials, and the date I opened the package.

D. HARRIS: Okay. What was the case number that was assigned that you worked on in this particular case?

MOORE: BK-03-000203.

D. HARRIS: This particular item that's depicted in 162 C, was this the Sharon Rocha cheek swab that you were referring to?

MOORE: Yes.

D. HARRIS: And showing you 162 F, is this the same package after you, you resealed it and submitted it to the FBI?

MOORE: Yes.

D. HARRIS: Showing you 162 D, do you recognize this item?

MOORE: Yes, I do.

D. HARRIS: And what is this item?

MOORE: This was a cutting from the tibia that I took and packaged so that it could be sent to the FBI.

D. HARRIS: And is there handwriting on there that you recognize?

MOORE: Yes. The, our case number, the item number I assigned to it, and the information about what is contained in the envelope, my initials, and the date I took the sample.

D. HARRIS: Now, does it also read on there "cutting from tibia, item DNA 4"?

MOORE: Yes.

D. HARRIS: And beneath that, is that your writing where it says "sanded and cut on 5/5/03"?

MOORE: Yes.

D. HARRIS: Now, were these smaller items packaged into a larger transport item for them to be returned?

MOORE: I believe so.

D. HARRIS: Showing you 162 G, do you recognize this particular package?

MOORE: Yes, I do.

D. HARRIS: And does it have your writing on it?

MOORE: Yes.

D. HARRIS: Is that in the lower left corner?

MOORE: Yes. Our case number, my initials, and the date I opened the package.

D. HARRIS: Does this indicate a list of items that were in this package?

MOORE: Yes.

D. HARRIS: Now, not all of the items were sent to the FBI; is that correct?

MOORE: Correct.

D. HARRIS: Showing 162 H, is this again that same package, with the contents now set out to the side?

MOORE: Yes.

D. HARRIS: Showing you 162 J, is this a closeup of the two smaller packages that just came out of the larger one?

MOORE: Yes.

D. HARRIS: And the last, 162 K. Do you recognize that one?

MOORE: Yes.

D. HARRIS: How is it that you recognize that?

MOORE: It was the cheek swab that I received for Dennis Rocha.

D. HARRIS: And is it marked at the top as a DR2?

MOORE: Yes.

D. HARRIS: Does it have your initials or something on there?

MOORE: Has my case number, my initials, and the date I opened the package.

D. HARRIS: Okay.

JUDGE: Mr. Harris, I have only as far as J. You said K. Did I make a mistake here?

CLERK: There is a K.

JUDGE: There is a K?

CLERK: Yes.

JUDGE: There was ten, now we have 11.

D. HARRIS: I'm sorry, the last we put up was 162 K.

GERAGOS: I had A through J.

JUDGE: That's what I had. So there was one additional?

GERAGOS: A through K?

CLERK: Yeah.

JUDGE: Yeah.

D. HARRIS: Ms. Moore, you were describing for us yesterday that you received these particular items, and you'd go out and you were telling us about the extraction process. Take the DNA out. Did you do that with the contents of these envelopes that we've been looking at?

MOORE: Yes.

D. HARRIS: Now, the contents of these envelopes, they're a, they're considered in the scientific world kind of a biohazard material?

MOORE: Correct.

D. HARRIS: Not safe to bring in the courtroom, so we use photographs instead?

MOORE: Yes.

D. HARRIS: What I'd like to do now is have marked a chart and two small charts next in order.

JUDGE: 163 A, B and C.

GERAGOS: Bates number?

D. HARRIS: 19885.

GERAGOS: 19885?

D. HARRIS: Yes.

D. HARRIS: Ms. Moore, I'm going to put up by you a chart. Start with this one, 163 A. Do you recognize this chart?

MOORE: Yes, I do.

D. HARRIS: Is that a blow-up of a page from your report?

MOORE: Yes.

D. HARRIS: I also have 163 B and C. Are these also smaller copies of the same report?

MOORE: Yes.

D. HARRIS: And is there some color highlighting on these particular reports?

MOORE: Yes.

D. HARRIS: And did you place the color highlighting on there to help explain your testimony?

MOORE: Yes, I did.

D. HARRIS: All right. What I want to do is we're going to project up on the overhead that particular chart that you're, that's up by you so that we can make sure everybody sees it. As the judge indicated, there's a pointer by you so you can point to the chart. Why don't you grab the pointer. Now, going just pretty much down this. At the top of this particular report it indicates EXAMINATION. And the first item that you of listed is that DNA 1.

MOORE: Yes, it is.

D. HARRIS: And did you create a column, somewhat of a box grid, of all of the different tests and the different items that you?

MOORE: Yes, I did.

D. HARRIS: And so the DNA 1, what was that item again?

MOORE: That was the femur from Baby Doe.

D. HARRIS: And that would be in this particular column right here?

MOORE: Yes.

D. HARRIS: The next item you took a muscle, sample from the muscle tissue of the Baby Doe?

MOORE: Correct.

D. HARRIS: That would be DNA 2?

MOORE: Yes.

D. HARRIS: That would be this particular column right here?

MOORE: Yes.

D. HARRIS: Actually, Judge, if we can have the lights dimmed, that might help it a little bit.

JUDGE: You want it off or on?

D. HARRIS: Well, it's kind of, a little bit easier to read, but it's a little brighter now, so we'll try it that way.

JUDGE: All right.

D. HARRIS: The next item was DNA 3?

MOORE: Correct.

D. HARRIS: What was that?

MOORE: The muscle tissue from Jane Doe.

D. HARRIS: This column right here?

MOORE: Yes.

D. HARRIS: DNA 4?

MOORE: Was the tibia from Jane Doe.

D. HARRIS: And that would be this column right here?

MOORE: Correct.

D. HARRIS: The next right in your report?

MOORE: The cheek swab from Dennis Rocha.

D. HARRIS: That would be this column right here?

MOORE: Correct.

D. HARRIS: Now, each of these columns, as we're going through and describing them, do they have a descriptive term what each of those items is included in the box?

MOORE: Can you rephrase that question, please.

D. HARRIS: For example, we're looking at the DR2. Does it include the descriptive phrase "cheek swab from Dennis Rocha"?

MOORE: Yes.

D. HARRIS: So if you were to look at this chart, you could tell which item it is without just looking at the number?

MOORE: Yes.

D. HARRIS: All right. And the next item?

MOORE: The cheek swab from Sharon Rocha.

D. HARRIS: And that's the SR2?

MOORE: Correct.

D. HARRIS: That would be this column right here?

MOORE: Yes.

D. HARRIS: And the last item?

MOORE: The bloodstain from Scott Peterson.

D. HARRIS: And what particular item was that?

MOORE: The 18 A.

D. HARRIS: And that's this last column over here?

MOORE: Correct.

D. HARRIS: Now, did, at the top of your report going down, the second sentence, or second paragraph where it's spaced there, is there something about item sample 26 A-1?

MOORE: Yes, there is.

D. HARRIS: What was that?

MOORE: Those were hairs I received from a hairbrush and, that Laci Peterson had used.

D. HARRIS: Did you attempt to do anything with the hairs from the hairbrush?

MOORE: I attempted to extract DNA from the root ends, but I was unable to get any DNA from those.

D. HARRIS: Did you, did that affect any of your results?

MOORE: No, it didn't.

D. HARRIS: Why not?

MOORE: I had other things to compare the samples to.

D. HARRIS: Now, going down to the next statement in your report, is that where you talk about the extractions from 18 A, DR2 and SR2?

MOORE: Yes.

D. HARRIS: The next paragraph, does that kind of explain in scientific terms and with brevity what it was that you did?

MOORE: Yes, it does.

D. HARRIS: Can you explain to us that particular paragraph?

MOORE: It basically explains that I took the extracts, that I amplified them as I described earlier. We have two kits that we use that are manufactured by a company, Applied Biosystems, and one kit Profiler Plus, includes ten of the loci, or areas of DNA that we want to test for, and nine of those being loci and one being that amelogenin, which is the marker for gender. And then the other kit we use is COfiler, and it has some of the same loci, or area, in that kit as Profiler Plus, but it includes the four additional loci, and also has amelogenin, the same marker for gender. And then once we have the amplified DNA, we put it on the capillary electrophoresis instrument that I described yesterday, to get the profile for the samples.

D. HARRIS: When you do this, was that chart the chart that you were showing us as part of your PowerPoint where you get these kind of peaks and valleys?

MOORE: Yes.

D. HARRIS: And from that you were able to identify a number that is assigned to it?

MOORE: Yes, we call that an allele.

D. HARRIS: And when you do these alleles, is it one number or is it two numbers?

MOORE: We get two numbers for alleles, because one is inherited from the mother and one from the father.

D. HARRIS: So as you go through this process, did you run out all of these machines, or all of these samples through this capillary machine and receive those kind of peaks and valleys?

MOORE: Yes.

D. HARRIS: And from that were you able to come with up those pairs of alleles that you've been describing?

MOORE: Yes.

D. HARRIS: I want to go through this, looking at your chart up there. And I'll zoom in on this one. Actually, if we could have the light dimmed now. Now we see up here on the screen the first box that says ITEM number, Description, Locus. What is that?

MOORE: I'm stating that to the right I'm giving the item number and the description of what that item number is, and then the locus are all, or loci are all those numbers below it. And those are the different areas of DNA that we tested.

D. HARRIS: So underneath that, in the column to the left, there's this D3S1358. What does that stand for?

MOORE: It's the number designation that they give to identify that locus or area of the DNA. And it basically tells us what chromosome we're looking at and what area on that chromosome we were looking at to get that type.

D. HARRIS: And you were telling us you first went through the process of trying to do this comparison with Jane Doe. Let's go through here and just go from left to right. What is it that you're seeing with that particular locus?

MOORE: Could you rephrase that, please.

D. HARRIS: We see numbers to the right here where it says 16,18 what does that mean?

MOORE: That means when I tested that particular area on the DNA from the femur from Baby Doe, I got a 16 allele and an 18 allele.

D. HARRIS: And to the right of that is DNA-2. Did you receive the same thing from the same test?

MOORE: Yes.

D. HARRIS: Did you expect that?

MOORE: Yes.

D. HARRIS: And why is that?

MOORE: Because you have the same DNA type in every cell in your body.

D. HARRIS: Going down what is the, the next one the column on the left VWA?

MOORE: Yes.

D. HARRIS: What is that?

MOORE: Would you rephrase that?

D. HARRIS: What is VWA in the left column?

MOORE: It's just another area of the DNA that we tested.

D. HARRIS: So looking at the column on the left, each one of those designations, except for the, I'm not sure I can get the pronunciation right, the amelogenin?

MOORE: Amelogenin.

D. HARRIS: Amelogenin. Is each one of those kind of a different address or a different place on the genetic profile for an individual?

MOORE: Correct.

D. HARRIS: So it's all of these that you test out and come up with some kind of compilation of the person's profile?

MOORE: Correct.

D. HARRIS: After you had done all of that, is that when you went through the process of looking at known subjects to these unknown, being Jane Doe and Baby Doe?

MOORE: Yes.

D. HARRIS: Okay. On the ones that you've highlighted for us, did you start with Dennis Rocha and Sharon Rocha to try and determine Jane Doe?

MOORE: Yes.

D. HARRIS: And if Jane Doe was suspected of being Laci Peterson, would, is it easy to go and get the parents' DNA to make a comparison that way?

MOORE: Yes.

D. HARRIS: And that's that parentage comparison you were referring to yesterday?

MOORE: Correct.

D. HARRIS: I'd like to put up 163 B. If you can describe for us what we see up there.

MOORE: Here I'm doing a comparison of Dennis Rocha and Sharon Rocha to the sample I received from the tibia. So in each case, if you look at each locus, you can see where those samples match up.

D. HARRIS: So if we look at the SR2, which is Sharon Rocha's, for the top one, that D3S1358, we see that she has a 14,14?

MOORE: Correct.

D. HARRIS: And then for Dennis we see a 15,16?

MOORE: Correct.

D. HARRIS: Then for the DNA-4, which is Jane Doe, there's a 14,16 combination?

MOORE: Correct.

D. HARRIS: Now, for the aid of visual simplicity, have you highlighted Miss Rocha, Sharon Rocha's information in pink?

MOORE: Yes, I have.

D. HARRIS: And did you highlight Dennis Rocha's information in blue?

MOORE: Yes.

D. HARRIS: Now, you were describing for us how you inherit things from both of your parents, something from the father, something from the mother. Did you go through and break down with DNA-4 for Jane Doe all of the inherited characteristics from the parents that you found at those particular alleles or locations?

MOORE: Yes.

D. HARRIS: Did you highlight in pink and blue the representations based on what was inherited from Dennis Rocha and Sharon Rocha?

MOORE: Yes.

D. HARRIS: What was your ultimate determination?

MOORE: That it was consistent with being a biological child of those two parents.

D. HARRIS: And if the person was not the child, would you find things that would exclude them?

MOORE: Yes. You would see instances where they did not match.

D. HARRIS: Did you also do the same thing with, let me try this again. From that information, were you confident, or was Jane Doe consistent with being Laci Peterson?

MOORE: Yes.

D. HARRIS: Based on that determination, did you then try and do a determination of Laci Peterson and Scott Peterson as to Baby Doe?

MOORE: Yes.

D. HARRIS: Put this up on the screen. This would be 163 C. Did you also do the same kind of visual aid with this particular item, blue for the defendant, Scott Peterson?

MOORE: Yes.

D. HARRIS: For all the different markers in that column?

MOORE: Yes.

D. HARRIS: And that was item 18 A?

MOORE: Correct.

D. HARRIS: Then you had DNA-4 that you've identified as Laci Peterson, or Jane Doe. Did you highlight all of that information in pink?

MOORE: Yes.

D. HARRIS: Did you go through and then compare the inherited characteristics from Scott Peterson and Laci Peterson, DNA-4, to DNA-1, Baby Doe?

MOORE: Yes.

D. HARRIS: And what do we see?

MOORE: It's consistent with being a biological child of those two parents.

D. HARRIS: Now, at the bottom of your report behind you, you talk about the profile obtained from the tibia of Jane Doe is consistent. Do you put that information in your report to sort of, kind of conclusion at the bottom of that?

MOORE: Yes.

D. HARRIS: Now, these different loci that you're referring to, are there databases that allow you to determine kind of a statistical frequency that that shows up in the population?

MOORE: Yes.

D. HARRIS: Do you, once you make this kind of determination, those peaks and valleys and get these allele addresses, did you run these profiles through the databases?

MOORE: Yes, I did.

D. HARRIS: Is there a mathematical formula that you then statistically determine the probability of, of numbers or range or frequency, whatever the term is that's used?

MOORE: Yes.

D. HARRIS: Did you do that in this particular case?

MOORE: Yes, I did.

D. HARRIS: What were the numbers that you came up with?

MOORE: You want the final result?

D. HARRIS: Well, this is kind of a long process to go through --

MOORE: Yes.

D. HARRIS:, this database, isn't it?

MOORE: Yes.

D. HARRIS: Lot of, a little bit of mathematics involved?

MOORE: Yes. First we, the database has the frequency that you would see that particular allele in, it's representative of the general population and it includes different ethnicities, so we look at each of those ethnic populations and see how often you see that particular allele in that population, and get a frequency. So we take those frequent, that frequency and compare it to what you expect to find if you've got, between the two parents, the possibility of getting that allele from those two parents. We take that and divide it by that frequency from the general population, and that gives us a likelihood of getting that particular allele for this child. Once we get that, those numbers, we take all of them and multiply them and get a final product of the chance that you're going to get this entire profile for that child from these two parents, as compared to out of the general population.

D. HARRIS: Based on those compilations, what did you ultimately determine the probabilities were?

MOORE: That it was one point nine billion times more likely to get this profile from these two parents than from a couple that you would pick out of the general population.

D. HARRIS: And for the Baby Doe, did you do the same type of statistical analysis?

MOORE: Yes, I did.

D. HARRIS: And what did you determine?

MOORE: I don't think that result's on that page, so I have to refer to my notes. In that instance it was 18 billion times more likely to get that profile from those two parents than from a couple out of the general population.

D. HARRIS: Now, the word that you used, just so I make sure that I heard you correctly, is "billion"?

MOORE: Yes.

D. HARRIS: And that's for both of these percentages?

MOORE: Correct.

D. HARRIS: So scientifically are you comfortable with the fact, or is it your opinion, that Jane Doe was consistent scientifically with being Laci Peterson?

MOORE: Yes.

D. HARRIS: And the Baby Doe is consistent scientifically with being Conner Peterson, the biological child of Laci and Scott Peterson?

MOORE: Yes.

D. HARRIS: The People have no other questions.

JUDGE: Mr. Harris, any questions on cross-examination?

P. HARRIS: No.

JUDGE: No questions? Can this witness be excused?

GERAGOS: Yeah. I offered to stipulate that this was Laci and Conner, so I don't have any questions.

JUDGE: You have no questions.

GERAGOS: I have no questions.