

1 Mr. Clavell, you are free to go. Thank
2 you very much.

3 Who is your next witness?

4 MS. EASTMAN: Your Honor, may I be
5 excused, and Ms. Walker can take over, so I can
6 explain to Mr. Clavell?

7 THE COURT: Who is your next witness?

8 MR. RUCKER: Mr. Chiafari.

9 (Witness was sworn.)

10 Thereupon,

11 FRANCIS CHIAFARI

12 Called for examination by counsel for the
13 defense, having been duly sworn, was examined and
14 testified as follows:

15 VOIR-DIRE EXAMINATION

16 BY MR. RUCKER:

17 Q Mr. Chiafari, good afternoon, sir.

18 A Good afternoon.

19 Q Would please state your name and present
20 occupation.

21 A Yes. My name is Francis A. Chiafari, and
22 my current occupation is molecular geneticist.

23 Q And where is your office or your business

1 located?

2 A In Baltimore at the Baltimore RH typing
3 laboratory.

4 Q How long have you been in that position?

5 A Well, I have held the position of manager
6 of molecular technology for approximately a year
7 and a half.

8 Prior to that time, I was the supervisor
9 of the DNA laboratory.

10 Q And do you in the course of your
11 employment in your laboratory, do you do testing,
12 DNA testing?

13 A Yes, we do.

14 Q And for whom do you do it?

15 A Well, we do it for a wide range of
16 applications.

17 We do paternity, forensic, immigration
18 and clinical testing for clients really around the
19 world, including the State of Washington and the
20 State of Montana, the State of New Jersey,
21 Pennsylvania.

22 We have done some testing in Virginia as
23 well as South Carolina, North Carolina, Maryland,

1 and various other states as well as testing for
2 various countries, India, Haiti, Japan, really all
3 around the world.

4 Q And do you contract with the City of
5 Baltimore for DNA testing?

6 A Yes. We have a contract -- we are
7 actually in the seventh year of a contract with the
8 Baltimore City Police Department for DNA testing.

9 Q And is that in the area of the DNA
10 forensic testing?

11 A It is.

12 Q And what is your educational background?

13 A I have a Master's degree in biology from
14 the University of Maryland.

15 Q And have you published any articles or
16 books on DNA, DNA identification, DNA forensics?

17 A Yes. I actually have over 17
18 publications.

19 The first publications were while I was
20 in undergraduate school. I began to publish in the
21 immunogenetic applications for forensics and
22 paternity in 1987. And I think I published 13
23 articles since then having to do with methods and

1 calculations involved in DNA testing.

2 Q And have you been called upon to testify
3 in courts?

4 A Yes, I have.

5 Q And are they both in paternity cases and
6 in criminal cases?

7 A Yes. Approximately 65 civil cases and 13
8 criminal cases.

9 Q Have you qualified as an expert in the
10 area of DNA analysis in Virginia?

11 A Yes, I have. In Henrico County.

12 Q And have you qualified as an expert for
13 both the prosecution and the defense?

14 A Yes, I have.

15 Q Do you more often testify for the
16 prosecution or more often for the defense?

17 A More often for the prosecution. I think
18 it is about two to one.

19 MR. RUCKER: Your Honor, I would move
20 Mr. Chiafari in as an expert in DNA forensics.

21 THE COURT: Any voir dire?

22 MS. WALKER: Yes. I have a couple of
23 questions.

1 BY MS. WALKER:

2 Q Do you do forensic examinations yourself?

3 A Well, I have a laboratory.

4 I'm actually the technical manager as
5 defined by the DNA Advisory Board and SWIGDOW
6 (phonetic).

7 Q What does that mean?

8 A Well, the technical manager is the person
9 who by definition is the final quality control
10 person who reviews the results and is essentially
11 in charge of the people in the laboratory.

12 Essentially I'm the director of the
13 forensic laboratory.

14 Q But do you do forensic examinations
15 yourself?

16 A I have done forensic examinations myself
17 for many years.

18 MS. WALKER: I have no objection.

19 THE COURT: All right. Ladies and
20 gentlemen, the witness will be received by the jury
21 as an expert.

22 DIRECT EXAMINATION

23 BY MR. RUCKER:

1 Q Mr. Chiafari, I would ask you to look at
2 what I'm going to ask to be marked as Defense
3 Exhibit No. 3.

4 And I will ask you, sir, if you can
5 identify Defense Exhibit No. 3.

6 A Yes. It is a copy of my curriculum
7 vitae.

8 THE COURT: Are you moving 3?

9 MR. RUCKER: Not at the moment.

10 BY MR. RUCKER:

11 Q Mr. Chiafari, can you see this diagram
12 from your position?

13 A Yes, I can.

14 Q This is Commonwealth's Exhibit No. 30.
15 And a Ms.. Palmer, who testified earlier in this
16 case, did some DNA forensic analysis of some blood
17 samples involved in this case.

18 She did some analysis on a Mr. Grant, on
19 a Mr. Dicks and a Robin Lovitt.

20 A Yes.

21 Q And are you familiar with this exhibit?

22 Have you seen copies of the exhibit
23 previously?

1 A Yes, I have.

2 Q And you have reviewed this exhibit on
3 another occasion?

4 A Yes, I have.

5 Q Now, I direct your attention to the
6 location vWA on this exhibit.

7 And I direct your attention to the
8 location where it says, Stained Area B of vWA.

9 A Yes.

10 Q In that stained area or in that area you
11 see an 11,14 and a 17. Is that correct?

12 A That's correct.

13 Q Does that indicate to you that there are
14 one or more people involved or DNA involved in that
15 location?

16 A Its indicates to me that at that
17 particular location DNA was detected from more than
18 one individual.

19 Q Now, in a normal DNA test of one person,
20 how many alleles would you expect to see at vWA
21 location?

22 A Well, most of the time you would see one
23 or two. Occasionally you might see three if there

1 was a duplication in the genome.

2 Q Now, if you saw only one allele, what
3 would that mean?

4 A It would mean that the person was most
5 likely homozygous, meaning that they had two copies
6 of the same gene at that location or potentially
7 that there was a null, that the DNA sequence was
8 missing completely.

9 Q If you have a known sample, as we had in
10 Mr. Dicks, and at TH01 you have a 7,7, would you
11 see two alleles at that location?

12 A No. You actually only see one.

13 Q And am I correct in assuming that because
14 you know the known sample and you only saw one, you
15 would necessarily assume that it's a 7,7?

16 A Well, yeah. There is some argument about
17 how that should be reported.

18 Most people would report it just as a
19 phenotype, which would be a single 7, but the
20 majority of the time the 7,7 is accurate.

21 Q Now, if, for example, the mixture of DNA
22 at vWA, if this 17 -- is it possible this could be
23 a 17,17?

1 A Well, it is possible that it could be a
2 17,17. It is possible that it could be an 11,17.
3 It is also possible that it could represent a
4 mixture of a 14,17 with obviously other
5 individuals.

6 Q Now, if this is an 11,17 and you see that
7 Robin Lovitt is a 16,17 --

8 A Yes.

9 Q -- if this is a 17,17, would that exclude
10 Robin Lovitt as the donor of that material?

11 A Yes, it would.

12 Q If this is an 11,17, would that also
13 exclude Robin Lovitt as the donor of that material?

14 A Yes, it would.

15 Q And if this is a 14,17, would that
16 eliminate Robin Lovitt as the donor of that
17 material?

18 A Yes, it would.

19 Q Now, when you have three alleles like we
20 have in this particular case --

21 A Yes.

22 Q Is there an explanation other than what
23 you have talked about, the masking, this being a

1 17,17, for there being three alleles?

2 A There are other explanations.

3 One explanation would be, as I mentioned
4 earlier, that it just so happens this person has a
5 duplication.

6 If you were see that, you would expect
7 that all of the alleles would be of equal
8 intensity.

9 As you notice on the chart, you see the
10 17 is parenthetical, which means that it is at much
11 lower intensity with regard to the 11 and the 14.

12 So it looks clearly to me as if it's two
13 different DNA sources mixed together.

14 There is the possibility of course that
15 there is another allele present in combination with
16 the 17 which was lost because of stochastic
17 effects.

18 Q What is a stochastic effect?

19 A A stochastic effect is a situation where
20 because of random distribution when you're sampling
21 a particular sample, you happen to only get one
22 portion of the DNA mixture that happens to be in
23 that sample.

1 And all of the DNA testing that is
2 performed in this day and age is set up so that at
3 normal DNA concentrations you will not see that
4 effect.

5 However, as the amount of DNA goes down,
6 there is the possibility that as you get towards
7 the edge of detectability, you are going to lose an
8 accompanying allele.

9 Q Now, Ms. Palmer referred to it not as a
10 stochastic effect, but I believe as dropping an
11 allele.

12 A Dropping an allele is another term for
13 it.

14 Q Now, Ms. Palmer also testified that in an
15 occasion where you have a dropping of an allele
16 that it does occur more frequently with the higher
17 number. Would you agree or disagree with that?

18 A I would agree that it does occur more
19 frequently with the higher number.

20 Q So if that's the case here, then we would
21 have had a 17,18?

22 A Or a 17,19 or a 17,20, a 17,21 or
23 potentially a 17,22, which is very rare.

1 Q Is that as high as the ladder goes?

2 A That's the highest I have ever seen of a
3 vWA allele.

4 Q At this location?

5 A Yes.

6 Q Now, if it was any one of those, a 17,18;
7 17,19; 17,20; 17,21, would that exclude Robin
8 Lovitt as the donor of that material?

9 A Yes, it would.

10 Q If it were a 17 -- or 16,17, that would
11 include Robin Lovitt as the donor, would it not?

12 A That's what would be required, yes, sir.

13 Q And if it were a 15,17, it would exclude
14 Robin Lovitt?

15 A Yes, it would.

16 Q And that happens to be the same --

17 A That's correct.

18 Q -- set of alleles that Mr. Grant has at
19 that location?

20 A Yes, sir.

21 Q And how low does it go on the ladder?

22 A I believe the lowest allele that anyone
23 has seen is a 10. But I think on the ladder, the

1 lowest is an 11.

2 Q Now, are you able to do a statistical
3 analysis with respect to how many black males would
4 have a 17 allele at the vWA location?

5 A Yes, you can.

6 Q And did you do that?

7 A Yes, I did.

8 Q And what is the percentage?

9 A Well, using the database that is
10 published in the Journal of Forensic Science from
11 1998, you would calculate the proportion of
12 individuals that would have a 17 at vWA locus as a
13 portion of their genetic type at about 19 percent
14 of the black population.

15 MR. RUCKER: Thank you, sir. I would ask
16 you to please answer any questions that the
17 Commonwealth may have.

18 CROSS-EXAMINATION

19 BY MS. WALKER:

20 Q So the bottom line is that this is
21 obviously a low intensity amount of DNA?

22 A Yes, ma'am.

23 Q And it is possible that there is an

1 accompanying allele that we do not see?

2 A Yes, ma'am.

3 Q And it is possible that that accompanying
4 allele is a 16?

5 A Yes, ma'am.

6 Q Like this person?

7 A Yes, ma'am.

8 Q And when you said 19 percent of the black
9 population, are you talking about the world
10 population?

11 A No. Actually, specifically, I'm
12 referring to the African-American population.

13 So that would be in the United States.

14 Q So 81 percent of that population does not
15 have that allele. Is that correct?

16 A Correct.

17 Q And do you usually use the PowerPlex?

18 A Yes, we do. In fact, we use the same
19 instrumentation that the Department of Virginia
20 uses.

21 MS. WALKER: Thank you very much, sir.

22 THE COURT: Anything else?

23 MR. RUCKER: No, sir. He may be excused.

1 THE COURT: May the witness be excused?

2 MR. RUCKER: Yes.

3 (Witness stood down.)

4 THE COURT: Who is your next witness?

5 MR. RUCKER: I believe that is it, Your

6 Honor.

7 THE COURT: Defense rests?

8 MS. WOLFE: The defense rests, Your

9 Honor.

10 THE COURT: Any rebuttal?

11 MS. WALKER: No, Your Honor.

12 MR. RUCKER: We will have some evidence,
13 documentary evidence to introduce.

14 THE COURT: All right. I've got an idea.
15 Why don't you folks start your weekend?

16 On one condition, that you are not to
17 discuss this case with anyone or among yourselves
18 over the weekend, and don't go to Champion's to
19 play pool.

20 With that, let me say have a good
21 weekend. Be careful, and I'll see you Monday
22 morning at 10 o'clock.

23 MS. WALKER: Your Honor, I think there --