MARY ANN FURLONG,

called as a witness on behalf of the People of the State of Illinois, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BILYK:

Q Sergeant, could you please tell us your name and spell your name for the court reporter.

A My name is Mary Ann Furlong, M-a-r-y A-n-n, my last name is F-u-r-l-o-n-g.

Q Sergeant, how are you employed?

A I am employed by the Chicago Police Department and I am a sergeant of police.

Q What are your current duties as a sergeant of police?

A At present I am a supervisor in the crime laboratory which is located at 1121 South State Street. I supervise the serology unit, the trace unit, the latent fingerprint development unit and the question document unit.

Q Did you at one time work as a lab technician in the serology unit?

A Yes, I did.

Q What are your duties as a lab technician in

the serology unit?

A As a serologist I identified various physical fluids and body fluids that were sent into the laboratory. These fluids included but weren't limited to blood, vaginal fluids, seminal fluids, saliva samples, vomitus and things of that sort.

Q How much time did you spend working or as a serologist with the crime lab?

A I've been down at the crime lab since 1979 and I was in the serology unit up to December of 1985.

Q Could you relate to the court and ladies and gentlemen of the jury your educational background and your training in the area of forensic serology.

A Yes, sir. I have a bachelor of science degree from Loyola University and after I graduated from Loyola I was employed by the University of Chicago and they were doing research, microbiology research, and I was employed there for seven years and at the end of the seven years I was a senior research technician. I also have published research papers under my maiden name while I was employed at the University of Chicago. After I left there I joined the Chicago Police Department and went through their basic and advance training. I went to the crime lab

as I mentioned in 1979 and went through several classes that were offered by the laboratory and these have included a polarized light microscopy course, I have been down to the F.B.I. Academy in Quantico, Virginia for a class in basic serology and for a class in hair and fiber analysis, and I also have been to the Illinois Department of Law Enforcement for an advanced fiber analysis. I returned to the F.B.I. Academy at Quantico for a biochemical method in blood stain analysis course and was invited back the following year for symposium on the forensic applications of electrophoresis. I also have been to various laser workshops and I will go to scientific meetings in order to keep up to date on the various aspects of forensics that I am involved with.

Q Can you tell us approximately how many serological examinations you have conducted?

A I'd have to say hundreds. I actually don't have an exact count.

Q And approximately how many times have you testified as an expert in forensic serology in court?

A Several dozens.

Q And how many of those times were you qualified as an expert?

A Every time.

Q Sergeant, are you a member of any professional academies or science societies related to forensics?

A Yes, sir, I am. I belong to the State Microscopical Society of Illinois, I'm a member of the Midwest Association of Forensic Scientists, I'm a member of the American Academy of Forensic Scientists and I am a member of the International Association of Identification.

Q Sergeant, have you published any papers in scientific journals or delivered any formal presentation at scientific academies or societies?

A Yes, sir, I have published while at the University of Chicago with the crime lab, I also teach classes to our mobile unit technicians, if there are new techniques for evidence collection, I also teach new evidence -- excuse me, new evidence technicians the techniques that we would like to see them use in order to collect evidence for us. I lectured at law schools and to different visiting scientists that come into the laboratory.

Q Doctor, could you -- well, at this time I would tender Sergeant Furlong as an expert in the

field of forensic serology.

MR. SARLEY: I have no questions, your Honor.

THE COURT: There are no questions.

BY MR. BILYK:

Q Sergeant, could you please tell the ladies and gentlemen of the jury how you go about analyzing blood standards at the crime lab.

A The blood that we receive at the crime lab is brought in from crime scenes by evidence technicians and mobile unit technicians. When I receive blood into the laboratory I will attempt to type it immediately because it has a certain degradation affect where when you type blood in a liquid sample you can do a forward typing in the ABO blood group system and find out what type the blood is.

We also will get some blood samples that are dried so as a result we would have to do another type of blood test in order to determine the type of the dry bloodstain. When we receive our wet blood samples we will also make a dry stain so that we can run all the samples on the same case as a dry stain and one is a check against the other.

We also receive blood samples from the Medical Examiner's Office and this is again a wet

loodstain which would be typed immediately upon receipt. After we do an ABO blood grouping we will attempt to individualize bloodstains by subjecting them to a process called electrophoresis and this takes one bloodstain and you can with some degree of efficiency attempt to get ten additional genetic marker answers or different types from the one bloodstain and this is done with all of the samples that we do get into the laboratory.

Q How many different blood types are there?

A There are four basic blood types. There's type A, type B, type AB and type O.

Q Now for one individual all of their blood is the same type. Is that correct?

A Yes, your blood type does not change during your life. It will remain the same forever.

Q In addition to blood typing you indicated some genetic markers or enzymatic differentiations. How many different ones of those are there?

A At present or when I was doing the actual bench work we were able to identify ten different enzyme times plus the basic ABO blood type. Sometimes not all of the enzymes were typeable but we were doing ten at the time.

Q Assuming that you were able to discover ten different enzyme types in everyone's blood, would it be possible to get two people with the same ten enzymes?

A Yes, it would.

Q And the same blood type?

A Yes, it would be like saying two people both have type A blood. Two people could have that type of blood plus the same enzyme types.

Q Now, sergeant, did you receive any specimens in this case?

A Yes, I did. I received blood samples from the scene and I received a sample of blood from the Medical Examiner's Office.

Q What did you do when you received the samples from the scene and the blood samples from the Medical Examiner's Office?

A The samples from the scene were typed in the basic ABO blood group system and I found the same type in all three of the samples.

Q I'm going to show you what's been marked as People's Exhibit 38, 37 and 39, 37, 38 and 39. Would you take look at those please, sergeant. And do you recognize what those are?

A Yes. I can identify these samples because they have the Chicago Police Department records division number of G087375. They have the victim's name, where the samples were recovered from and they also have in addition the samples that I made from the blood swatches that were taken at the scene and I can identify these because they have my initials of M.A.F. on all of these exhibits.

Q Now you stated that you can identify the blood sample that you made. What does that consist of?

A After I do the ABO typing on these samples, I made a swatch which is a piece of sterile cloth and I add some of the bloodstain to it. This would be to run any dry stains in the future. I also made a thread, it's a white cotton thread and I added some bloodstains to it, and the thread would be used to do the electrophoresis for the genetic markers. So in addition to doing the basic typing I also made additional samples for myself to run at a later date.

Q I'm going to show you in addition what's been marked as People's Exhibit No. 65. Would you take a look at that, please.

A This is the sample of blood from the medical

examiner and it's marked with 212, March '85 which is the medical examiner's designation for this particular case. Because I have received whole blood from the medical examiner I am able to do what we call a forward blood group typing and a reverse blood group typing. One is a check against the other and I was able to type this blood in the ABO system. I also made a thread with the same blood put on it and in the envelope is a swatch also with the blood from the medical examiners on that also.

Q Sergeant, were you able to determine the blood type of all four of those exhibits. Is that correct?

A Yes, sir, I was.

Q Were you able to get an enzyme activity finding as to all four of those exhibits?

A I was able to type all ten of the enzymes on the blood from the Medical Examiner's Office for the bloods on the scene. The blood from the rear hall and from the alley I was able to type the ABO system in nine of the enzymes and on the blood from the rear of the Chevy I was able to determine the ABO blood group system but I was not able to detect anything further from that blood sample.

Q And what blood type were those four exhibits?

A All four of the samples are blood type A and all of the enzymes that I was able to detect were all the same type and those were consistent with the victim's enzymes.

Q Sergeant, did you receive other samples in this case besides blood?

A Yes, sir, I did. I received other samples from the Medical Examiner's Office.

Q And what samples did you receive?

A I received swabs that were taken from the victim from the vaginal, oral and the rectal cavities.

Q And what of a serological nature were you to do with those swabs?

A When I receive the swabs from the Medical Examiner's Office I checked to see if there were any semen present in the stains and this is done by a color reaction test, it's called an acid phospatase test, and what we're looking for is the acid phospatase is to turn a color immediately if there is semen present. Semen is found in seminal fluids in higher concentration than in vaginal fluids so it's an indication that semen could be present. I checked all three of the swabs and found that semen was present in

the vaginal swab. I then took another part of the swab and I put vaginal, oral and rectal swabs on a glass slide. I then stained the slide and I examined it under a microscope for the presence of spermatozoa and I found that the vaginal slide was positive for spermatozoa. The oral and the rectal slides were negative.

Q In terms of serological analysis and comparison, what can you do with a slide or a sample that has semen or sperm present?

A The samples that are present on the swab could be taken and further tests can be done because people if they're in a group called secretors will exhibit their blood type in their other body fluids. So because I knew what the victim's blood type was, I attempted to examine her vaginal swab to see if I could identify a mixture of fluids and I did this by a series of tests and I also did the enzyme genetic marker electrophoresis test on this sample also.

Q How do you determine whether or not an individual is a secretor?

A The secretor will show up, it's another blood test or it's another test that is done with the blood samples that are sent in and it's identifying a gene

called Lewis. The victim in this case had a Lewis type of A negative, B negative and this didn't tell me any answer because this category on some of the people A negative, B negatives are secreter and some aren't so I had to wait until I did further tests to find out if this victim was a secretor or not and I determined that she was.

Q What other tests did you have to determine to determine if she was a secreter?

A It's a test called an absorption inhibition test and it has to be do with antibody antigen reactions, and after I concluded these tests I found that the type on the swab gave me A reactions and H reactions which are consistent with a person who is a type A and a secretor.

Q What exactly does it mean to be a secretor?

A It means that that person would exhibit their ABO blood group in other body fluids. You're not picking up a blood sample so much. It would just mean that I could determine from a saliva sample what your ABO group would be. That's why we would have to know a victim's blood grouping type, whether or not they were secreter and also anybody else that was concerned with the case would be necessary to know their blood

grouping and whether or not they were secreter so that you could see if there were foreign antigens present like in this case in the vaginal swab.

Q I show you what's previously been marked and identified by Dr. Kalelkar as People's Exhibits 58, 59 and 60 and ask you to take a look at those.

A These are the swabs that I received from the Medical Examiner's Office. They're labeled as vaginal swab, oral swab and rectal swab. They have the medical examiner's number of 212, March '85. When I received them I put the records division number of G087375 and my initials on each of the swabs.

Q Upon receiving those swabs what did you do with them?

A I did the test that I mentioned before checking to see if there was semen present, checking to see if there was any spermatozoa present, checking to see if I could determine any ABO types and do the genetic marker tests.

Q How do you go about examining those?

A The swab is air-dried before it is submitted to us. I will remove the swab from the cardboard tube and actually cut sections of the swab off in order to do my examinations. Each of the exam would consume

more of the swab so actually what's left in this tube probably would be like a wooden stick without too much cotton left on it. I did consume most of it in my analysis. I would also save any of the swab that I had left and freeze it in case any future analyses were requested.

Q I show you what's been marked as 66, People's Exhibit 66, 67 and 68, for identification. I ask you if you recognize what those items are.

A These are small ziplock bags which I have labeled as vaginal swab, oral swab, rectal swab with the victim's name, the medical examiner's number and my initials, and I have taken part of the swab, some of it is still left in some of these, and I would remover this from the cardboard tube, take part of the swab off, do my analysis and there is still some of the swab left remaining in some of these.

Q Now you've already indicate stated that you found semen and spermatozoa on only one of those samples and that's the vaginal swab.

A That's correct.

Q Were you asked to make a comparison in this case between findings on that swab and findings of the victim's blood and the findings of the defendant's

blood?

A Yes, I was.

Q What do you need from the defendant in order to make that determination?

A It would be necessary for me to obtain a saliva sample and a blood sample from anyone else in this case and that was done and I received samples in the laboratory at a later date in order to perform additional analysis.

Q I show you what's been marked as Group Exhibit 69 and ask you if you can identify that.

A Yes. These are labeled with the name Ronald Jones, 26 August '86. It has the records division number and my initials and this is the saliva sample that I received. There's two vials of blood with the name Ronald Jones, the records division number and my name and again I made another swatch with this person's blood on it in case I had to do a dry stained testing for comparison. When I received these samples I wanted to see what ABO blood group this person was. I wanted to determine whether or not they were secretor or non-secretor and see what sort of genetic markers are present in the blood.

Q From People's Group Exhibit No. 69 were you

able to determine what blood type the defendant Ronald Jones was?

A Yes, sir.

Q What blood type was that?

A He is a type O.

Q Were you able to determine from the saliva sample whether or not the defendant was a secretor; in other words, whether or not he would secrete his blood type and you would be able to determine his blood type from his semen or spermatozoa.

A Yes, sir, I was.

Q Did you determine whether he was a secreter?

A Yes. His Lewis type is designated as A positive, B negative which is indicative of a non-secretor which means this person would not exhibit their blood groupings in their body fluid such as their saliva, their perspiration and their seminal fluids.

Q In comparing the vaginal swab with your known blood sample of the victim and the known saliva sample of the victim knowing her to be a secretor -- well, what type of blood type and activity did you find on the vaginal swab?

A I found blood group of type A and I was able

to identify some of the genetic markers which in this case were consistent with the genetic markers of the victim.

Q Were there any genetic markers found in the vaginal swab that were inconsistent with being the markings of the victim?

A No, sir.

Q And is that what you would expect to find if the semen deposited in the victim were from a non-secretor?

MR. SARLEY: Objection.

THE COURT: Overruled.

THE WITNESS: A non-secretor would not leave their ABO blood group in a sample that was deposited so I would have to say that either the semen was deposited by a person of type A with the same genetic markers or by a non-secretor.

BY MR. BILYK:

Q Can you tell us how many people or what percentage of the population would have the same genetic markings?

A Well, 20 percent of the population are non-secretors so people with the blood group with type A are 40 percent so it would be a matter of

multiplying these two together and saying if a type A person with those genetic markers have left that sample it would be 32 percent of the population or 100 percent of the non-secretor population. That would also be saying that there was enough semen there to detect a mixture which, you know, when semen is deposited it is going to be diluted somewhat by the vaginal fluids also.

Q Sergeant, did you also receive clothing in this case to be analyzed?

A Yes, sir, I did.

Q Do you remember what kind of clothing that you received?

A I received some clothing from the scene. I believe there was one stocking, shoes, other articles. I can't really remember and I also received some articles of clothing from the Medical Examiner's Office.

Q And after receiving those items of clothing, what type of analysis did you conduct on the clothing?

A I did the basic ABO blood grouping and I attempted to identify genetic markers on the clothing samples.

Q Is it more difficult to get a blood typing

and genetic markings from dry blood?

A It usually will take more time because you can't do a direct blood typing. It's also necessary to identify the stains as blood and to identify them as human blood. And then we examine the clothing for any stains and we do color reaction tests to find blood samples. It's necessary to cut a portion of the bloodstain out and do what's called an absorption elution test which is a test that takes overnight. The dried blood stays on electrophoresis would be done the same as the liquid blood samples that have come in.

Q Now you received numerous items of clothing in this case. Is that correct?

A Yes, sir, I did.

Q And do you recall what analysis you were able to do on the numerous items of clothing?

A All the clothing that came in that had blood on it was blood of type A. I was able to detect genetic markers in some of the items but not others. I do recall that all of the genetic markers were consistent with the victim's.

Q Showing you what's been identified as People's Exhibit No. 1, do you recognize that?

A This looks like the blue jacket that came in on the case. I can still see my initials on the jacket. I don't know exactly where I took the blood standard from the jacket but --

Q But you do remember take being the blood standard?

A Yes, sir.

Q And do you recall what the findings were from that blood standard?

A They were consistent with the victim's blood type.

Q Showing you what has been marked as People's Exhibit No. 61, for identification, do you recognize that?

A It's the T-shirt. Do you want me to take it out of the bag?

Q I have some rubber gloves if you want. Do you need to take it out of the bag?

A No, I know my initials will be on here someplace because I do mark all the evidence with my initials.

MR. SARLEY: Stipulate to that, Judge. If he doesn't want to go into it that's fine.

BY MR. BILYK:

Q Do you recall what your findings --

THE COURT: What's the stipulation, that the witness's initials appear on the exhibit.

MR. BILYK: Thank you.

Q Do you remember what your findings were with regard to that T-shirt?

A Yes, these were also consistent with the victim's blood type.

Q I show you what's been marked as People's Exhibit No. 62, for identification. Did you take a swatch from that?

A Yes, this is -- I can see my initials on this one. There was one red sock that came in from the medical examiner. It was one red sock that came in from the scene. I'm not sure which one this is.

Q That has previously been identified as the one that was brought from the Medical Examiner's Office.

A This was also consistent with the victim's blood type.

Q Showing you another sock marked People's Exhibit No. 6, for identification, do you recognize that?

A Yes, this is the other sock that was received on the case.

Q And --

A My initials on it.

Q Do you recall what your findings were with regard to that sock?

A This was also consistent with the victim's blood type.

Q There was blood on that sock?

A Yes, sir.

Q Is there a difference between human blood and other blood?

A Yes, sir. We can tell if a sample is human blood by human precipitin test. Again it's an antigen antibody reaction and we do have various types of animal blood because sometimes it's important to identify, you know, a pet may be present in the house or, you know, someone works in a meat packing place and we can tell the difference.

Q Showing you People's Exhibit No. 7, for identification, do you recognize that?

A Yes. My initials are on here. I don't believe there are any bloodstains found on this. That would have been, you know, negative for any

bloodstains.

Q Thank you.

THE COURT: People's Exhibit No. 7 is the cap for record.

MR. BILYK: Yes.

Q Showing you People's Exhibit No. 8, can you identify that for the record, please.

A This is a green sweater which I'm sure --

Q I'm sorry, did I say 8? That's People's Exhibit No. 2, for identification.

A I'm sure my initials are on here someplace. I took a blood standard from here and that was consistent with the victim's also.

Q Showing you what's been marked as People's Exhibit No. 4, for identification, do you recognize that?

A Yes. This also has a pair of panties and it also has my initials on it. I don't believe there are any bloodstains on here. I know I also tested it for any seminal material and that was negative on this case.

Q Showing you People's Exhibit No. 5, for identification. Do you recognize that?

A Yes, it's a red jacket. I don't know where

my initials are.

Q I'm sorry, a red what?

A A red jacket or it's read jeans. I don't recall if I took any bloodstains from here.

Q Is there anything that would refresh your memory?

A My report would have that information. If I could see a copy of the report that I submitted.

Q Is your memory exhausted as to whether or not you found the bloodstain on there?

A For this item yes, it is.

THE COURT: Why don't we approach for a sidebar for just a second.

(A discussion was had between court and counsel out of the hearing of the court reporter and jury, after which the following proceedings were had:)

THE COURT: Ladies and gentlemen, we'll just interrupt the proceedings for approximately five minutes. This has taken a little bit longer than I and everyone else anticipated. I apologize for that.

Take a five minute break.

(Brief recess.)

THE COURT: Bring the jury in, please.

(The following proceedings were had in the presence and hearing of the jury:)

THE COURT: For the record the jury is once again is assembled in open court.

Mr. Bilyk, you may finish your examination.

BY MR. BILYK:

Q Sergeant, have you had a chance to refresh your memory as to whether or not you took a swatch from the red pants you have in front of you?

A Yes, sir, I did. I checked my laboratory report and found that this item which are red blue jeans, red jeans, were negative for any blood samples.

Q I show you what has been marked as People's Exhibit No. 10, for identification. Do you recognize that?

A Yes. This is a pair of shoes which is marked with the records division number and my initials M.A.F. There was a very small amount of blood present on these shoes and the most I was able to determine was that it was human blood. I was not able to detect any ABO type from the shoes.

Q I'm going to show you what's been marked People's Exhibit 70, Group Exhibit 70. Do you recognize what is contained in Group Exhibit 70?

A Yes. These are all labeled with the records division number and they are the cuttings that I took from the clothing that we just saw from the shoe, from the red sock on one inventory, from the green sweater, from the white T-shirt, from the blue jacket and from the other red sock on a different inventory. These were all the samples that I did type in the ABO and for the genetic markers.

Q Are these the particular samples that you used to state the findings as to each of these articles of clothing that you just stated?

A Yes, sir, they are.

Q Sergeant, did you also receive an assignment to do another analysis in another investigation under the name of Barbara Benson?

A Later on in 1985 yes, I did.

Q Do you recall on what date or approximately what date you made your determinations?

MR. GRZECA: Objection, Judge. I don't believe she's been asked as to whether or not she's even made any analysis.

THE COURT: Overruled.

BY MR. BILYK:

Q Did you receive swabs in the Barbara Benson

case?

A Yes, sir, I did.

Q Did you analyze the swabs in that case to determine whether or not there was semen present?

A Yes, I did.

Q Do you recall what date it was that you made your findings as to whether or not semen was present in the Benson case?

A I issued a report on the 19th of September in 1985.

Q Can you estimate when you actually made your findings if your report was dated September 19th. Do you know when you made your -- when you actually made the findings in that case?

A I could not say exactly because to my recollection I don't have the exact date of my findings. Usually a report would be issued within --

MR. SARLEY: Objection to usually, Judge. If she doesn't know I would object to that question.

THE COURT: Given the issues that have been reserved that have been raised here, objection overruled. I'll let the witness testify as to what her usual practice is.

THE WITNESS: I would say the report would have

been issued three or four weeks after my findings at most. That would be a long time after my findings.

BY MR. BILYK:

Q So the latest would have been August that you made your findings.

A Yes, sir, the end of August.

MR. BILYK: I have no further questions.

MR. SARLEY: May I proceed, your Honor?

THE COURT: Yes, Mr. Sarley.

MR. SARLEY: Thank you.

CROSS-EXAMINATION

BY MR. SARLEY:

Q Sergeant Furlong, there are four blood types, correct?

A Yes, sir.

Q A, B, AB and O.

A That's correct.

Q And also what you're telling us is a person can either be a secretor or a non-secretor.

A Yes.

Q If you're a secretor that means a person's blood, saliva, semen and so forth will secrete a substance with which you would be able to tell that blood type.

A Basically, yes.

Q And what you're also telling us is that Debra Smith was a type A.

A Yes.

Q Secretor.

A Yes, sir.

Q And Ronald Jones based on your analysis was a type O.

A Yes, sir.

Q Non-secretor.

A Yes, sir.

Q And non-secretors -- strike that.

Isn't it a fact that the sperm or semen that you analyzed from the vagina of Debra Smith could have been put there by a type O non-secretor?

A Yes.

Q Or a type A non-secretor?

A Yes.

Q Or a type B non-secretor?

A Yes.

Q Or a type AB non-secretor?

A Yes.

Q Or a type A secretor?

A That's correct, yes, sir.

Q And so basically what you're telling us is your analysis could not exclude Ronald Jones from being responsible for that semen, correct?

A That's correct, yes, sir.

Q It was basically inconclusive.

A Yes, sir.

Q And the analysis in the Barbara Benson case, was that a swab taken from her vagina?

A Yes.

Q And your findings there, was that there was not any semen present on the swab.

A That's correct, there were negative findings in that case, yes.

MR. SARLEY: If I could have a moment, your Honor.

No further questions.

MR. BILYK: No further questions, Judge.

THE COURT: Thank you, sergeant. You're excused.

(Witness excused.)

THE COURT: Ladies and gentlemen, I did certainly work longer than I anticipated. It's now nearly 20 to 7:00. I hope that you all have rides or cars here, a way of getting home from the building as rapidly as possible.

The court is adjourned for the evening.

We'll resume again tomorrow at 11:00 o'clock. I ask that you reassemble here at 11:00 in the morning. I don't think under any circumstances we'll be working as late tomorrow evening. Thank you for your patience and your diligence. Court's adjourned.

(The matter was adjourned until July 13, 1989.)