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Department of Forensic Science
Mount Vernon Campus
2100 Foxhall Road
Washington, DC 20007

May 25, 2018

Steven D. Rosenfield
Attorney at Law

Re: Jens Soering

Dear Mr. Rosenfield,

You asked me to review the two reports submitted by Moses S. Schanfield, Ph.D., in the case of Jens Soering, as well as the 1985 serology test results, the 2009 DNA test results, and various other documents relating to blood testing. You asked me to determine the probability that the three items at issue in this case -- 6FE, 23K#1 and 7FE#1 -- might have been mixtures of blood from different sources, including the male victim. You asked me to assume that item 35K was the male victim's blood, since DNA testing in 2009 determined values for twelve of sixteen loci -- the most loci of any of the items tested. Finally, you asked me to present my findings in layman's terms.

A. Summary

I can say that, if we assume that the tests in 1985 and 2009 were performed correctly and the results are reliable, then items 23K#1, 6FE and 35K originated from three different individuals. Item 7FE#1 appears to have originated from the same individual as item 23K#1.

B. Statistical Analysis

1) The frequency in the Caucasian population of individuals that share the profile common to 35K and 6FE is approximately one in 22,792 unrelated individuals (one in 200,930 in the African American population and one in 187,394 in the Asian). In layman's terms, this means that approx. 351 residents of Virginia could have been the source of item 6FE.

Nationwide, approx. 14,040 residents of the United States could have been the source of item 6FE (These calculations assume populations of 8,000,000 and 320,000,000, respectively. For the sake of simplicity, variances by race are ignored.)

2) The frequency in the Caucasian population of individuals that share the profile common to 35K and 23K1 is approximately one in 42,364 unrelated individuals (one in 240,348 in the African American population and one in 398,712 in the Asian). In layman's terms, this means that approx. 189 residents of Virginia could have been the source of item 23K#1. Nationwide, approx. 7,554 residents of the United States could have been the source of item 23K#1.

3) The frequency in the Caucasian population of individuals that share the profile common to 35K and 7FE1 is approximately one in 105 unrelated individuals (one in 150 in the African American population and one in 116 in the Asian). In layman's terms, this means that approx. 76,190 residents of Virginia could have been the source of item 7FE#1. Nationwide, approx. 3,047,619 residents of the United States could have been the source of item 7FE#1.

C. Technical Notes

When I calculated the frequencies I did not use amelogenin, which is the sex marker. (It is not common practice to use it as it's obvious that if a person is of a different sex they would be excluded.)

When the amount of DNA is low and at some loci there is no genetic information like in this case, the absence of data is referred to as "drop -out". In these cases when at a locus like D5 we only see one allele we don't know whether that person only has a 12 (inherited 12 from both parents) or if one of the two alleles is 12 and the other one 'dropped -out'. This is due to the low amounts of DNA indicated by the poor profile yield (i.e. several loci with no allele detected). Thus, statistically any individual who has a 12 (irrespective of the other allele) cannot be excluded as a contributor to that locus.

D. Conclusion

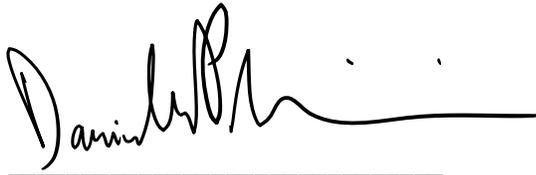
Science does not deal in absolute truths, but in degrees of probability. No scientific method or test result is "perfect"; we can only approach perfection asymptotically. Determining the degree of probabilities in genetic testing is my scientific specialty.

This determination includes an evaluation of the scientific methods employed, as well as the scientists employing these methods. In this case, I have found NO clear error or malfeasance in the laboratory results or in the professional histories of the scientists involved.

Thus there is NO reason for me to question Mary Jane Burton's 1985 serology test results, or Dr. Schanfield's review of her work and the 2009 DNA tests.

Expressed in layman's terms, my statistical analysis of the DNA test results shows that any one of hundreds of Virginia residents, or thousands of U.S. residents, could have been the source of the unidentified blood at the crime scene, items 6FE, 23K#1 and 7FE#1. By coincidence, the contributors of those three items shared some genetic markers with the person who left item 35K, presumed to be Derek Haysom.

To jump to the conclusion that all four items originated from a "common male contributor" is unscientific speculation. Ms. Burton's test results, and Dr. Schanfield's review of her work, support the conclusion that at least three different people left their blood at the crime scene: the contributor of 35K, the contributor of 6FE, and the contributor of 23K#1 and possibly 7FE#1. DNA tests conducted in 2009 eliminates Jens Soering as a possible contributor of any of these items.

A handwritten signature in black ink, appearing to read 'Daniele Podini', written over a horizontal line.

Daniele Podini, Ph.D.