**EXCERPT OF BRIEF IN SUPPORT OF POST-VERDICT MOTIONS**

##### REGARDING THE ADMISSION OF DNA EVIDENCE

##### State of Washington

##### ARGUMENT

**THE TRIAL COURT PROPERLY EXERCISED ITS DISCRETION**

**IN ADMITTING EVIDENCE OF DNA IDENTIFICATION**

1. **The Scientific Principles Underlying DNA Identification is Universally Accepted in the Scientific Community.**

The defendant contends that the trial court improperly admitted DNA identification evidence.

The forensic use of DNA technology is based upon generally accepted scientific principles, and is sufficiently reliable to the admitted in a criminal trial for the jurors’ consideration in determining the issue of identification.

DNA technology offers the judicial system a powerful new test for identifying criminal suspects and tracing paternity. Every individual, except an identical twin, possesses a unique genetic “blueprint” known as DNA. This unique pattern enables scientists the use DNA tests to identify individuals, much like fingerprints enable criminologists to identify individuals. No other blood or serum test rivals DNA’s accuracy.

Laurel Beeler & William R. Wiebe, *DNA Identification Tests and the Courts*, 63 Wash. L. Rev. 903 (1988).

In general, expert testimony is admissible if the following standards are satisfied:

1. the witness must be qualified as an expert;
2. the opinion must be based on an explanatory theory generally accepted in the scientific community; and
3. the expert testimony must be helpful to the trier of fact. *State v. Black*, 109 Wash. 2d 336, 341, 745 P.2d 12, 15 (1987).

When the expert testimony is based on “new scientific theories,” its admissibility is tested under the standard set out in *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923). Under this standard, the scientific principle from which deductions are made must be sufficiently established to have gained general acceptance in the scientific community. *Black*, 109 Wash. 2d at 342. The Trial court’s finding of general acceptance will upheld if it is supported by substantial evidence. *State v. Canaday*, 90 Wash. 2d 808 814, 585 P.2d 1185, 1188 (1978).

There is no question that RFLP analysis meets this standard. This technique has been routinely used in the biological and medical communities for years. 4 RP 451-42; 5 RP 589-90. Every expert, both State and defense, agreed that this is a universally accepted procedure. R RP 541-42; 5 RP 591, 680; 7 RP 1023. A large number of courts have so held. *See, e.g., Martinez v. State*, 549 So. 2d 694 (Fla. Dist. Ct. App. 1989); *State v. Schwartz*, 447 N.W.2d 422, 425 (Minn. 1989); *State v. Pennington*, 393 S.E.2d 847 (N.C.1990); *Mandujano v. State*, 799 S.W.2d 318 (Tex. Ct. App. 1990); *Spencer v. Commonwealth*, 384 S.E.2d 775 (Va. 1989), *cert. denied*, 493 U.S. 1036 (1990); *State v. Woodall*, 385 S.E.2d 253 (W. Va. 1989). At least 21 states have recognized the validity of DNA identification by either statute or judicial decision. The evidence has been used to exculpate suspects as well as inculpate them. *See Dabbs v. Vergari*, 570 N.Y.S.2d 765 (Sup. Ct. 1990).

The Washington legislature has recognized the reliability of the procedure:

The legislature… finds that the accuracy of [DNA] identification… is superior to that of any presently existing technique and recognizes the importance of this scientific breakthrough in providing a reliable and accurate tool for the investigation and prosecution of sex offenses… and violent offenses…. 1989 Wash. Laws ch. 350 § 1.

The defendant cites a New York trial-level case that has received tremendous media attention. *People v. Castro*, 545 N.Y.S.2d 985 (Sup. Ct. 1989). The defendant in that case was charged with murder. The State sought to introduce evidence of DNA identification tests involving blood found on the defendant’s wristwatch. After a 12-week hearing, the court ruled that DNA identification techniques are “generally accepted in the scientific community and can produce reliable results.” *Id.* at 999.

The testing laboratory in that case claimed that the wristwatch blood matched the victim’s, despite some differences in the banding patterns produced by the two. The court excluded evidence of this “match,” holding that the laboratory’s efforts to explain away these differences were not scientifically acceptable. The court allowed admission of evidence that the wristwatch blood *did not* come from the defendant. *Id.* at 996-98.

What occurred next in that case established conclusively the reliability of DNA evidence. After the evidence was excluded, the defendant pled guilty to two counts of Second Degree Murder. In accepting the guilty plea, the judge sought to “cure some of the mystery of the DNA evidence” as raised in the pre-trial hearing. In response to the court’s questions, the defendant acknowledged the truth of what the suppressed tests had shown: that the blood on his wristwatch was from the murder victim.

The defendant also attempts to rely on *Schwartz*, 447 N.W.2d 422. The State there attempted to show that the blood on the defendant’s shirt was that of a murder victim who had been slashed to death. The court acknowledged the validity of RFLP analysis:

It is undisputed that RFLP analysis is routinely performed and generally accepted for research and diagnostic purposes within many scientific disciplines….Forensic DNA typing is heralded as a significant breakthrough because it promises greater specificity of results and may permit analysis of samples too small to be identified by traditional means, such as ABO blood typing. *Id.* at 425.

Nevertheless, the court excluded the evidence because of the State’s failure to provide sufficient discovery. *Id.* at 427-28. After the remand, Schwartz pled guilty to first degree murder and acknowledged that he had stabbed his victim.

In short, courts and experts uniformly agree that RFLP analysis is scientifically accepted. The trial court’s ruling that the evidence satisfies the *Frye* standard is supported by evidence that is not merely substantial, but overwhelming.

1. **Since Three Independent Witnesses Testified that the Tests were Conducted in Accordance with Accepted Scientific Principles, the Trial Court Properly Exercised Its Discretion in Holding that Foundational Requirements were Met.**

The defendant claims that the “general acceptance” test applies, not only to the scientific principle, but also the specific procedures employed the testing laboratory. *Frye* does not support this claim:

[W]hile courts will go a long way in admitting expert testimony deduced from a well-recognized scientific principle, the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs. *Frye*, 293 F. at 1014, quoted in *State v. Martin*, 101 Wash. 2d 713, 719, 684 P.2d 651, 654 (1984).

It is the *principle* that must be well-established, not the specific procedures. When a well-recognized principle is involved, the court “will go a long way” to admit evidence based on that principle. Since all the witnesses agreed that RFLP analysis is well-recognized, evidence derived form it should be readily admissible under the *Frye* standard.

The defendant’s own evidence demonstrates the absurdity of trying to analyze a particular laboratory’s procedures under a “general acceptance” standard. He introduced evidence of a survey conducted in 1987, covering 215 scientists in the field of molecular biology and genetics. The scientists were asked if they considered the RFLP analysis conducted by Cellmark Laboratories reliable. 203 of them were either unfamiliar with RFLP analysis, unfamiliar with Cellmark, or had no opinion about the reliability of their analysis. 6 RP 759-61. (Of the remaining 12, five said that the analysis was probably reliable, and the other seven said that it was so reliable that they would bet their lives on it.) As this illustrates, the general body of experts is simply not likely to be familiar with the procedures used by any particular laboratory. As a result, the validity of those procedures cannot reasonably the tested under a “general acceptance” standard.

This is not to say, of course, that evidence derived from demonstrably erroneous procedures will be admitted. To the contrary, scientific evidence is admissible only on a showing that it reliably employs the relevant scientific principle. *Seattle v. Peterson*, 39 Wash. App. 524, 693 P.2d 757 (1985). Nevertheless, a “general acceptance” standard should not be required for this showing. Rather, the ordinary rule should be applied: determining the admissibility of expert testimony is within the discretion of the trial court. *See State v. Guloy*, 104 Wash. 2d 412, 429, 705 P.2d 1182, 1193, (1985), *cert. denied*, 475 U.S. 1020 (1986). Once the basic foundation is established, any deficiencies go to weight, not admissibility. *See State v. Flett*, 40 Wash. App. 277, 285, 699 P.2d 774, 779 (1985).

The evidence supports the trial court’s conclusion that the tests conducted here followed accepted scientific procedures for RFLP analysis. Four experts who had examined Cellmark’s procedures agreed that they were adequate: Dr. R.C. of Cellmark, Dr. P.C. of the Virginia Mason Research Center, Dr. G.S. of the University of Washington School of Medicine, and Dr. D.D. of the Fred Hutchinson Cancer Research Center. All four of these witnesses regularly use RFLP analysis in their own laboratories. 3 RP 309; 4 RP 558; 5 RP 600-01; 17 RP 2359. Dr. D. in particular uses the analysis to identify tissues used in bone marrow transplants, where misidentification could be fatal. 17 RP 2351-53. She testified that the procedures used by Cellmark are *more cautious* that the procedures that she uses. 17 RP 2359.

The defense experts presented a laundry list of possible problems that might arise in connection with RFLP analysis. Some of these problems are clearly exaggerated. For example, they raised the specter of “star activity”: some restriction enzymes, under some circumstances, can cut the DNA in improper places. 7 RP 993-1002. All four of the State’s experts had personally used Hinf I, the restriction enzyme used by Cellmark. All four testified that they had never seen it exhibit star activity. 4 RP 511, 543-44; 17 RP 2305, 2355. Both Dr. C. and Dr. S. had affirmatively tried to produce star activity in Hinf. I. They observed none. 4 RP 591; 17 RP 2306.

As another example, defense witnesses suggested the possibility of “partial digestion.” This is the converse of star activity: the enzyme might fail to cut the DNA in some places where it should be cut. 5 RP 673. The State’s experts, including the independent experts, agreed that partial digestion is easily recognizable and cannot lead to erroneous results. 4 RP 555; 16 RP 1085; 17 RP 2327, 2366.

In any event, all the experts agreed that the possible errors would lead to either no identification or an erroneous exculpation. 2 RP 279-80; 4 RP 554; 5 RP 617-18; 7 RP 1069-72. There is only one way anyone has suggested that a suspect could be falsely inculpated: if two samples were inadvertently mixed. 7 RP 1047.

The defendant harps on the misidentification that was made in the CALDC study, an error caused by mixing samples. His position seems to be that once a laboratory makes an error, its test results are never admissible again. This error was caused by the mislabeling of a test tube, which led to two samples being mixed. Cellmark has already modified its procedures to prevent recurrence of this error. 3RP 303-04. The possibility does not render the test results inadmissible. The record fully supports the trial court’s conclusion that the tests here were conducted in compliance with accepted scientific standards.

1. **The Testimony of an Independent Statistical Expert Supports the Trial Court’s Conclusion that there was an Adequate Statistical Basis for the Identification.**

The defendant also contends that there was an inadequate statistical basis for the conclusion that the DNA samples found at the crime scenes were his. This issue cannot be raised. At the *Frye* hearing, defense counsel specifically asked that the statistics be excluded, even if other portions of the DNA evidence were admitted. 8 RP 1125. In an abundance of caution, the prosecutor complied with this suggestion. A party who seeks the exclusion of evidence cannot then complain that the evidence was excluded. *State v. Baird*, 200 Wash. 227, 93 P.2d 409 (1939).

Furthermore, the evidence supports the trial court’s ruling that the statistics were admissible. 8 RP 1128. Dr. E.W., a statistical geneticist at the University of Washington, verified Cellmark’s calculations at the Frye hearing. She testified that, under accepted statistical standards, Cellmark’s conclusions were not only correct but also “extremely robust.” 3 RP 364-67. According to Dr. W. for three of the samples, it is unlikely there is any other male on earth with the same RFLP pattern. For a fourth sample, it is unlikely there is any other male in the western hemisphere with the same pattern.

Despite his contrary position in the trial court, the defendant now complains that the lack of statistics rendered the DNA evidence meaningless. This is not correct. Numerous kinds of identification evidence are routinely admitted without statistical support. For example, ordinary fingerprint evidence is routinely admitted, despite the absence of any statistic showing the probability that two people would have the same fingerprints. *See, e.g., State v. Johnson*, 194 Wash. 438, 442, 79 P.2d 561, 564 (1938); *Piquett v. United States*, 81 F.2d 75 (7th Cir. 1936). Similarly, evidence of hair comparisons is routinely admitted without any statistical support. *See, e.g., State v. Batten*, 17 Wash. App. 428, 436-38, 563 P.2d 1287, 1292-93 (1977). And, of course, no statistical analysis is possible for eyewitness identification, yet the admissibility of such evidence is unquestionable.

There was proper foundation for the expert’s conclusion that she had “no doubts about [the] identification.” 16 RP 2167. Specific numbers in support of this conclusion would have damaged rather than aided the defendant. The trial court properly exercised its discretion in allowing the expert’s testimony.