RECENT LEGAL DEVELOPMENTS IN PCR-STR ADMISSIBILITY AND EMERGING DEFENSE ATTACKS ON DNA EVIDENCE

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On March 26, 2002, the Minnesota Court of Appeals decided State v Traylor, the first Minnesota appellate decision to consider the admissibility of PCR-STR DNA typing. The court ruled that the TWGDAM guidelines rather than the DAB standards control the admissibility of results. As a result of this decision, all prosecutions involving the use of DNA evidence in Minnesota were put on hold until this issue could be resolved by the Minnesota Supreme Court. A second hearing with additional testimony from experts from both sides was conducted. This resulted in a favorable ruling for the defense.

After an appeal by the prosecution, on February 26, 2003, the Minnesota Supreme Court reversed these rulings. They affirmed the trial court's finding that PCR-STR testing had gained general acceptance in the scientific community. Further, they found that the scientific community had clearly adopted the DAB standards as the appropriate standards and controls for DNA testing.

Finally, on the issue of access to primer sequences and initial validation studies, they ruled that access to these was not necessary for the scientific community to validate the use of these kits and therefore the defendants' due process right to a fair trial was not violated.

On August 21, 2003 in State v. Roman Nose, the Minnesota Supreme Court reiterated its ruling in Traylor, and also specifically approved the use of the product rule to calculate the random match probability. (RPM) These Minnesota decisions are significant because Minnesota has a long history of being hostile to the use of statistical evidence in criminal cases. These recent Minnesota decisions are in line with rapidly developing case law in other states which approves the use of PCR-STR typing results. For example, at least three recent California decisions have effectively removed any remaining questions about PCR-STR admissibility in California courts.

However, admissibility battles in individual cases, as well as contests to databases or the validity of the analyst's interpretation will continue. For example, defense attorneys continue to contest use of the product rule to calculate the RPM. Every state which has considered the issue has denied the challenge. Some defense experts are advocating a switch to Bayesian statistics in an effort to give some weight to the possibility of a false positive due to a sample handling error or an error in test interpretation. A recent article in the Journal of Forensic Science argues that forensic scientists and legal professionals must give more attention to the issue of the possibility of errors in individual cases.

Attacks on the databases used to calculate the RMP rely on computer searches of the database to determine if some individuals share an unusual number of alleles. If found, the critics argue this indicates, the database is not random, and thus less accurate. Claims have been made that analysts often make claims not verified by an analysis of the databases.

At least one long time DNA testing critic has developed a software program, claiming the ability to detect incorrect allelic assignment, results effected by pullup or stutter, and other data interpretation problems. These critics raise such questions as; How many people might really

be in that mixture? Are those peaks down around 50 RFU's really artifacts? Is this evidence really from a single source?

Though claims that the methodology cannot be trusted because the primer sequences have not been released have properly been identified by the courts as red herrings, questions in individual cases may still arguably affect the admissibility or weight to be given to PCR-STR testing results.