

ISHI 2015  
Panel Presentations & Discussion

Title: Why are We Having DNA Admissibility Hearings?

From the late 1980's through the mid-1990's, many courtrooms in the United States saw the presentation to the trier of fact of DNA test results from biological evidence only after an admissibility hearing. *Frye*, *Daubert* or other types of admissibility hearings were routine in many jurisdictions prior to the introduction in courts of the early RFLP (restriction fragment length polymorphism) DNA testing as well as for the early PCR- (polymerase chain reaction) based testing using the DQa/DQA1, PM and/or CTT STR testing using polyacrylamide gels followed by silver staining. Various types of challenges were commonly raised in courts, ranging from the scientific reliability of the DNA testing method used to the interpretation of the data, and the methods and databases used for calculating the statistical frequencies. When fluorescent STR PCR-based testing came on line in crime laboratories and into the courts in the late 1990's, considerably fewer admissibility hearings were held, and the DNA evidence was often admitted based on previous court and appellate decisions.

Since that time, there have been very few admissibility hearings where the reliability of the DNA testing methods and results were an issue. But that has changed with the substantial expansion of the types of evidence samples now accepted in crime laboratories, the increased sensitivity of the PCR amplification test kits and instrumentation being used and the diversity in methods and procedures in laboratories for enhancing the sensitivity of the assays when small amounts of DNA (i.e., low template or LT DNA) are recovered from a biological sample as well as the software programs available for data analysis and statistical calculations. The questions of reliability and reproducibility of DNA test results and how best to present the weight of the evidence using statistical estimations have re-surfaced. We are again experiencing admissibility hearings in the courtroom prior to the introduction of DNA test results, particularly when the amount of DNA is limited or mixtures of DNA are present.

The Panel Presentations and Discussion will provide information regarding the interaction of the legal process of admissibility hearings with the foundational scientific tenets and data supporting the issues of reliability and reproducibility, and other relevant topics, from both the historical and current perspectives. The speakers include two forensic scientists with experience in many admissibility hearing preparations and testimonies, a retired judge and former prosecutor who presided over several admissibility hearings in the 1990's, and a defense attorney with experience challenging the admissibility of DNA profile results from low template DNA and complex mixtures. Opinions from several admissibility hearings will be presented.

Robin W. Cotton, Ph.D. – Scientific Perspective of Admissibility Challenges in the 1980's and 1990's  
Biomedical Forensic Sciences, Boston University School of Medicine

The Honorable Ron Reinstein, J.D. – Legal Perspective of *Frye* and *Daubert* Admissibility Hearings & Rulings from Admissibility Hearings  
Judge, Superior Court of Arizona (Retired), Judicial Consultant – Arizona Supreme Court

Charlotte J. Word, Ph.D. – Scientific Perspective of Current Admissibility Challenges  
Consultant, Gaithersburg, MD

Stephen B. Mercer, J.D. – Current Admissibility Challenges - The Defense Perspective  
Chief Attorney, Forensics Division, Maryland Office of the Public Defender