B191 Out of the "*Frye*" Pan and Into the Fire: KISS Your Judge and Defend Your Probabilistic Genotyping (PG) Software in Court

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After attending this presentation, attendees will be better prepared to present evidence concerning the general acceptance and reliability of various PG software programs.

This presentation will impact the forensic science community by providing laboratory managers and lawyers with the skills necessary to successfully defend the use of PG programs, which have been increasingly adopted by accredited forensic laboratories to improve reliability of the statistics used in DNA testing.

When a laboratory manager introduces probabilistic genotyping software to generate statistics in casework, he/she can expect *Frye* or *Daubert* challenges in court. These are claims, generally by the defense, that the results should be precluded because the new techniques are not generally accepted as reliable in the relevant scientific community (*Frye*) or that the techniques are not based on sufficient facts or data and that the proposed testimony is not the product of reliable principles and methods (*Daubert*). These attacks are made even though PG software has been used to generate statistics that sometimes exonerate suspects, in both pre-trial and post-conviction settings.

Laboratories and prosecutors must partner up when faced with these challenges to scientific evidence. Together, they must create an educational package with one student in mind — the judge, who will decide whether the jury will hear results from the software on which the laboratory has spent enormous resources of time and money. The presentation to the judge will have to be comprehensive, yet simple enough for a non-scientist to understand, following the Keep It Simple Stupid (KISS) rule of thumb. Sometimes this challenge can be met on paper, and sometimes it will have to be battled out on the witness stand.

Based on successful experience defending the Office of the Chief Medical Examiner's (OCME's) Forensic Statistical Tool (FST) in New York City, suggestions for the best ways to prepare and present complex scientific evidence will be offered, including: peer-reviewed articles, conference presentations and workshops; validations; DNA and mixture interpretation fundamentals; recommendations from the Scientific Working Group on DNA Analysis Methods (SGWDAM), National Institute of Standards and Technology (NIST), and international bodies; other agencies and laboratories using them; and problems PG software will avoid.

An important aspect of these scientific admissibility hearings focuses on what to expect from experts. Because this is an adversarial system, lawyers on both sides of a *Frye* hearing can be expected to research expert witnesses and vigorously challenge them on the basis of expertise, bias (financial or otherwise), and whether they advocate the use of alternative software that can be manipulated by varying thresholds on a case-by-case basis instead of using one set of validated thresholds uniformly across the laboratory.

PG Software, *Daubert*, *Frye*

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