B102 Validation Theory, Interpretation, and Statistical Analysis of DNA Mixtures

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After attending this presentation, attendees will understand appropriate methods and basis for DNA mixture interpretation and reporting.

This presentation will impact the forensic community and/or humanity by increasing awareness of the issues that need to be considered when developing and implementing interpretation and statistical guidelines for handling DNA mixtures.

The use of amplified short tandem repeat markers has become the standard for forensic DNA analysis worldwide. Although the community has become highly proficient in typing these marker systems in casework and databasing, a great deal of confusion and inconsistency persists in the interpretation of STR marker profiles in mixtures. The root causes appear to be irregularities in the evaluation procedure, inadequate validation experiments, and/or development of criteria not based on empirical data. These problems lead to apprehension and lack of confidence in the manner in how interpretations and statistics should be applied to mixture data so that reliable, unbiased estimates can be presented to the fact finder. In this presentation the authors will outline and discuss the scientific process to follow based on mixture validation studies, how conclusions can be drawn, and approaches so that statistical weight can be applied without compromising the scientific integrity of the analyst or the process.

Mixtures, DNA, Statistics

 ** Presenting Author*