

**A NOVEL METHOD FOR DETERMINING AND ANNOTATING DNA STR MIXTURES USING A SET OF MIXTURE INTERPRETATION GUIDELINES DEVELOPED FOR COMPLEX CASES**

**Linda B. Jankowski, Joseph R. Petersack, Edward J. LaRue,**  
*New Jersey State Police, Ewing, NJ*



The interpretation of complex mixtures is an unavoidable, often difficult, task in forensic DNA STR analysis. A unique set of Mixture Interpretation Guidelines has been developed for use when there are two contributors. They are useful for distinguishing between the major and minor contributors. The Guidelines are very user friendly, robust, informative, and conservative. They assist the DNA expert by providing a step by step linear approach to mixture interpretation, with guidelines individualized for two, three, or four alleles at any one locus. There is no requirement for additional information, such as known exemplars. The Guidelines were designed with enough conservatism to stand up on their own. The conclusions at each locus result in a novel method of annotation involving commas, semicolons, and parentheses. Alleles separated by commas indicate that the alleles originated from the same individual.

Alleles separated by semicolons indicate that it is unknown whether the alleles could be associated. Parentheses indicate alleles from a minor contributor; this is an important distinction from merely weaker alleles.