B184 The Use of a Database Feature in the TrueAllele® Casework System to Cross-Reference DNA Cases

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Learning Overview: After attending this presentation, attendees will understand the importance of cross-comparing cases to link crimes and perpetrators.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by demonstrating how TrueAllele® Technology's database feature can assist in the cross comparison of cases to show how the same perpetrators commit crimes using the same modus operandi across various jurisdictions.

Forensic DNA laboratories are very often tasked with solving an abundance of property crimes, including auto thefts. Most of these thefts are believed to be committed by the same perpetrator or group of perpetrators using the same modus operandi. Because of the sheer number of these types of cases and the fact that DNA evidence from these types of crimes generally result in complex DNA mixture data, crime labs are ill-equipped with being able to link various crimes to one another. TrueAllele® Technology's Databasing feature can alleviate these challenges allowing the laboratory to successfully link cases to one another and to perpetrators.

During the summer and fall of 2015, a large group of juveniles terrorized the Cleveland area by stealing vehicles on almost a nightly basis. Multiple law enforcement agencies submitted evidence from the recovered vehicles in the hopes of identifying suspects. A total of 37 suspect reference samples were submitted as part of this investigation for comparison to over 100 evidence samples from upwards of 30 cases. Most of the evidence samples submitted were swabs from various areas from the recovered vehicles, such as, steering wheel, gear shift, and door handles. Many of these swabs resulted in complex DNA mixtures. Profiles were interpreted manually following in-house protocols as well as sent to Cybergenetics for upload into the TrueAllele® system.

After the profiles were interpreted using the automated TrueAllele® software, comparisons were made between evidence-to-evidence profiles to link cases together as well as evidence-to-suspect references to link suspects to multiple cases. Approximately half of the suspect references submitted were linked with a positive match score to at least one auto theft case and in one instance, a suspect was linked in eight cases. In addition, complex profiles that were deemed inconclusive through manual interpretation were linked to suspects using automated TrueAllele® interpretation.

TrueAllele® Technology's Databasing feature was a necessary and invaluable tool used to link multiple auto theft cases and suspects that would have been otherwise impossible using manual methods.

TrueAllele® Technology, Databasing, DNA