F24   Genetic Genealogy and Law Enforcement: New Bedfellows

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Learning Overview: After attending this session, attendees will have a better understanding of how genetics and genealogy have come together to solve crimes and will also learn how recent developments raise both legality and ethical issues.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by making practitioners aware of how genetics and genealogy can now be used by law enforcement, as well as the legal and ethical issues that are presented by the process.

Since the identification and arrest of the suspect in the "Golden State Killer" investigation in early 2018 using novel DNA and genealogy tools, dozens of law enforcement investigators in North America have effectively used such methods in high-profile cold cases. A combination of advanced DNA methods, using thousands of Single Nucleotide Polymorphisms (SNPs) along with searching of ancestry databases, has allowed genealogists to assist investigators in identifying possible persons of interest as suspects in unsolved crimes. A free website database called GEDMatch allows comparison of suspect DNA to any of the millions of persons who have voluntarily submitted their DNA to that website database to accurately identify distant relatives of the suspect. In the past year, some of the more general direct-to-consumer genealogy websites, such as FamilyTree® and 23andMe®, have also indicated that they will release information to law enforcement under certain conditions. These tools have significantly changed the face of genealogic searching, and those changes now offer new investigative methods of crime solving.

Police can submit raw data from crime scene DNA to one of the new genealogy databases to find relatives of the person who left the specimen. While the suspect may not be in the Combined DNA Index System (CODIS), and may not have submitted his or her DNA to the genealogy site, the DNA of any of his or her relatives who have innocently submitted their data for genealogy search purposes can lead police to a range of suspects. The results of DNA-based genealogy searching allows follow-up investigation by police to further narrow the range of suspects based on age, locale, and other factors associated with the crime. Once a possible suspect has been identified, police can obtain a known DNA sample from the suspect. This can be done using discarded DNA without a warrant (for example, a discarded tissue from a garbage can in the "Golden State Killer" case). After that DNA profile is related to the crime scene specimen, the police have the basis for a warrant.

The entire process may raise potential admissibility issues that have yet to be decided by the courts. These admissibility issues involve questions such as legal standing and waiver doctrines, as well as the more basic issue of whether the ancestral leads generated by the process are even relevant to introduction of the eventual DNA comparison of the crime scene DNA to the defendant's DNA. The waiver issue has recently become more prominent since GEDMatch and some of the more general ancestry searching sites have now required an "opt-in" consent before data will be shared with law enforcement.

Notwithstanding the legality issues, the use of genealogical data raises ethical and policy issues. There is a significant debate about whether individuals who submit their DNA for personal genealogy research understand that it may expose their relatives to potential criminal prosecution. The recent "opt-in" requirements are attempts to insure that true "informed consent" is obtained before the information is released to law enforcement. Furthermore, some argue that the very concept of genealogical searching by law enforcement is the beginning of a "slippery slope" leading to a "police state" mass identification of the populace that violates basic societal notions of privacy. Others, however, maintain that consensual submission of DNA data that may lead to the apprehension of a dangerous criminal is an entirely ethical and individual decision.

Genetic Genealogy, Genetic Genealogy Admissibility, Genetic Genealogy Ethics