B34 Assessing the Public's Opinion on the Use of Forensic Genetic Genealogy (FGG) in Criminal Investigations

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Learning Overview: The goal of this presentation is to inform attendees on the relatively new and rapidly evolving method of FGG, including the public's opinion on the use of this method in criminal investigations.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by highlighting the importance of gaining insight into the public's opinion on the use of FGG and ultimately educating the public on what this method entails.

FGG has emerged as a novel investigative tool and has rapidly gained much attention in recent years, in particular since April 2018, when it was announced that the Golden State Killer had been identified using this new method. While this was not the first case solved using this technique, the high-profile nature of the case certainly brought this method a lot of media attention, leading to a rapid increase in its interest and use in hundreds of cold case investigations. FGG broadens the field of forensic DNA analysis and combines genetic methods with traditional genealogical methods for building family trees. FGG differs from traditional forensic DNA profiling in both the type of DNA technology used and the DNA databases employed.

As this is a relatively new and a much more encompassing technique used as an investigative tool in criminal investigations, questions have arisen regarding its use, ethics, and privacy issues. The aim of this survey was to assess public opinion on the use of FGG in criminal investigations. A 32-question survey was created using the QualtricsXM® survey platform. The questions collected demographics of the respondents, followed by questions designed to assess their opinions on the use of FGG in criminal investigations. The survey received over 1,400 responses. The survey questions addressed the use of both public and private genetic genealogy databases. Private genetic genealogy databases refer to Direct-To-Consumer (DTC) DNA testing companies such as AncestryDNA®, 23andMe®, MyHeritage®, Family Tree DNA®, etc., from which consumers purchase kits and submit biological samples. The raw DNA data is available from these companies for users to download, which can then be uploaded to public genetic genealogy databases. Public genetic genealogy databases refer to free online databases such as GEDmatch®, to which users can voluntarily upload their raw DNA data to in order to broaden their search for genetic relatives.

Law enforcement agencies have utilized these public genetic genealogy databases (e.g., GEDmatch®) by creating a Single Nucleotide Polymorphism (SNP) profile of an unknown biological crime scene sample suspected to belong to the perpetrator, then uploading it to a public database in a search for shared DNA matches (i.e., genetic relatives). The investigators then build the family tree of the genetic relatives using traditional genealogy methods to resolve the identity of the unknown crime scene sample. The results of the survey show there is a willingness among the public to allow law enforcement to access public and private genetic genealogy databases, but generally only for major crimes. The results also show the opt-in/opt-out function for law enforcement access in both private and public genetic genealogy databases is favorable as it allows the user to control their own data. Interestingly, 57% of respondents believe a search warrant should be required. FGG has benefited hundreds of criminal investigations in recent years and may soon become routine practice for investigating major crimes as more crime laboratories begin utilizing FGG in their case work investigations. As the database sizes grow, so does the power of FGG.

Forensic Genealogy, Forensic Genetic Genealogy, Investigative Genetic Genealogy

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