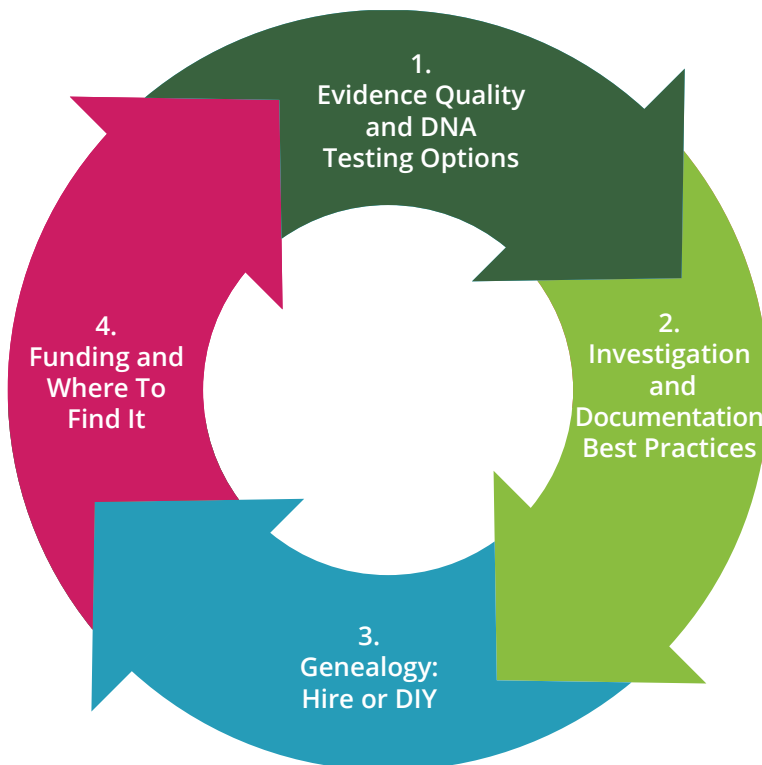


Law Enforcement’s Guide to Forensic Investigative Genetic Genealogy: When, Where, and How

Since the 2018 arrest of Joseph DeAngelo, also known as the Golden State Killer, more than 500 cases have been solved using forensic investigative genetic genealogy (F/IGG) including the ultimate conviction of DeAngelo in 2021.¹ While using DNA to solve cases is not new, advances in DNA technology, the access to and use of publicly accessible genealogical databases

like GEDmatch have helped solve cases that were previously unsolvable. F/IGG is a powerful tool for solving violent crimes such as homicides or sexual assaults, and identifying human remains from missing persons investigations and conflict zones. By navigating four key considerations, law enforcement can responsibly apply this tool in their investigations.

Considerations before using F/IGG:



1 TESTING OPTIONS

The quantity and quality of your DNA sample determines your testing options. Avoid making irreversible mistakes like consuming precious DNA evidence by using the wrong tests. Understanding available DNA testing options will give you the best shot at solving your case.

2 BEST PRACTICES

Utilize F/IGG correctly in your investigation to keep your case prosecutable. Keep relevant records and protect the privacy of people involved.

3 GENEALOGY

Genealogy, like all investigative techniques, is an acquired skill. Either hire an experienced genealogist and learn the tools of the trade from one or invest some time and acquire the knowledge to become the in-house genealogist in your department.

4 FUNDING

Typical costs associated with an F/IGG investigation includes paying for tests, uploading one or many DNA profiles to a genealogy database and the time and effort required for genealogical research. If you don't have the funds to get started today, learn about your financial options, including grant applications.

1. The number is based on cases that have been publicly disclosed or covered by the media. The true number is likely higher

Free resources from Verogen

FREE ACCOUNT IN GEDMATCH PRO

Secure and controlled law enforcement
access to profiles in GEDmatch

Sign up with your
government-issued email

FREE F/IGG INTRODUCTORY TRAINING

On-demand training from investigators, genetic
genealogists, DNA analysts and crime analysts

Receive a certificate of attendance
after completion

FREE 30 MINUTE CONSULTATION

Speak to experienced detectives and
genealogists to help you with next steps

Determine whether F/IGG is right for your case

What's the best DNA technology for forensic/investigative genetic genealogy?

Forensic DNA technology is moving beyond the traditional capillary electrophoresis (CE) to next-generation sequencing (NGS) that digitize DNA and deliver enhanced forensic insights. Think of it in terms of accessing music online via streaming instead of playing a cassette tape. CE is like the

cassette tape - it's very limited in the amount of information it can get from the DNA samples. Next-generation sequencing is the technique for the modern era and enables F/IGG conveniently through ForenSeq® Kintelligence from Verogen.

Evolution of Forensic DNA Analysis

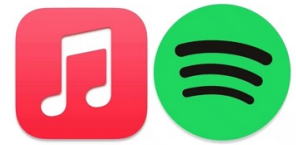
80's ————— 90's/2000's ————— NOW



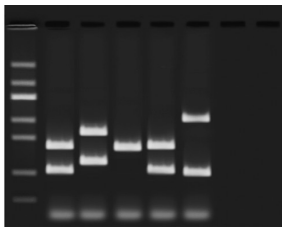
Cassette tape



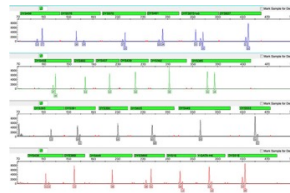
CD



Online streaming



DNA fingerprinting
(variable number tandem repeat)



Capillary electrophoresis
(short tandem repeat)



Next-generation sequencing

DNA sequencing is the backbone of F/IGG

In direct contrast to the upload and matching of CE-based short tandem repeat (STR) profiles in CODIS, F/IGG relies on targeted sequencing to generate single nucleotide polymorphism (SNP) profiles. When the SNP profiles are uploaded to

genealogical databases like GEDmatch, they will be matched against near and more distant relatives who share the same genetic information. These matches are then used to create family trees that allow investigators to zero in on the names of possible suspects.

Why Verogen?

1

Verogen is the only provider dedicated to the development and provision of NGS-based forensic solutions. Leveraging proprietary gold-standard sequencing approaches, Verogen is trusted globally by accredited forensic laboratories adopting NGS.

2

We offer a growing suite of forensic capabilities including STR analysis by sequencing, streamlined mtDNA analysis, estimation of externally visible characteristics (phenotyping), and the most comprehensive portfolio of tools for kinship analysis.

3

As the stewards of GEDmatch, data privacy and security are top priority:

- We operate robust security measures to protect general consumers' genetic data.
- GEDmatch PRO provides a secure and separate portal for law enforcement to access the GEDmatch database.
- Our end-to-end F/IGG workflow was developed with law enforcement in mind, based on principles of responsibility and integrity.

4

Our ForenSeq® Kintelligence workflow is the only end-to-end solution designed and optimized to take law enforcement from DNA analysis to genealogical insight.

FOR MORE INFORMATION VISIT verogen.com/lawenforcement

