

# Responsible genetic genealogy

The scientific development of forensic genetic genealogy (FGG), which couples genetic analysis with investigation of publicly available genealogy information, has successfully transformed law enforcement investigations by solving more than 50 cases over the last 18 months in the United States. However, use of FGG by law enforcement has preceded widespread development of best practices to protect the genetic privacy of private citizens who have voluntarily submitted samples to genealogy databases. Absent best practices, use of FGG could lead to compromised cases, diminished use, or the loss of this new investigative tool. Public support for FGG could be jeopardized and confidence in forensic DNA analysis could be undermined. As the custodian of a national law enforcement DNA database (CODIS), the U.S. Federal Bureau of Investigation (FBI) is looked to by many in the law enforcement and forensic DNA communities for guidance, and its efforts often influence the global community. The emergence of FGG suggests that further discussions on privacy, genomics, and the use of genealogy by law enforcement would be beneficial. Accordingly, the FBI seeks to engage the scientific and bioethics communities in such a dialogue.

Use of FGG involves databases and family trees composed of genetic data of private citizens who are not under suspicion for any crimes. When searching crime scene DNA in these databases, potential perpetrators may be uncovered by identifying their close or distant relatives, and then building family trees that can extend over many generations and may include hundreds to thousands of relatives. To date, this approach is only used if crime scene DNA has not matched genetic profiles in the CODIS database of known offenders and arrestees. A consensus has emerged that there is no legal prohibition on such use. The question is how it should be done.

Under a recently released interim policy from the U.S. Department of Justice (DOJ), effective this November, federal investigative agencies may develop internal policies and procedures and can utilize FGG if the case involves an unsolved violent crime (homicide

or sex crime) for which a CODIS search resulted in no matches, and for which reasonable investigative leads have been pursued. The DOJ Interim Policy is the first substantial attempt to address “how genetic genealogy should be done.” The interim guidance restricts investigative agencies to using only public databases or direct-to-consumer genetic genealogy services that provide clear notice to users and the public that law enforcement may access their sites for investigative or unidentified human remains identification purposes.\*

The forensic DNA community is also working on guidance to address the “how to” question. In April, the Scientific Working Group on DNA Analysis Methods (SWGDM; [swgdam.org](http://swgdam.org)), which recommends standards to the FBI for CODIS and issues guidance for the forensic DNA community, formed an interim committee on FGG composed of genealogists, bioethicists, academicians, law enforcement, and forensic scientists, as well as representatives of the European Network of Forensic Science Institutes and the International Society of Forensic Genetics (the author is co-chair of this committee). This group held an FGG technical symposium for SWGDAM membership in July and recently submitted recommendations to SWGDAM leadership that included establishing an FGG Working Group.

With the FBI and other agencies now moving to develop internal policies and procedures under the DOJ interim policy, the FBI has committed to leading the process of receiving stakeholder input by hosting a symposium on Genetic Privacy and Law Enforcement in 2020. In addition to symposium presentations, a comprehensive discussion of the interim FGG policy should also consider comments solicited from the scientific community on FGG privacy and ethical implications, metrics required by the interim policy, transparency, and SWGDAM guidance and recommendations. To initiate this review, the scientific community and other interested parties are encouraged to provide the FBI with comments at [forensicgenealogy@fbi.gov](mailto:forensicgenealogy@fbi.gov).

**“Absent best practices... confidence in forensic DNA analysis could be undermined.”**

—Thomas F. Callaghan



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\*U.S. Department of Justice, Interim Policy on Forensic Genetic Genealogical DNA Analysis and Searching (2019); [www.justice.gov/olp/page/file/1204386/download](http://www.justice.gov/olp/page/file/1204386/download).

# Science

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