

FORENSIC INVESTIGATIVE GENETIC GENEALOGY (FIGG)

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- **FIGG IS NEW.** Genetic Genealogy is not just forensic DNA plus, but something totally different.
- **THE RISKS ARE AS REAL AS THE BENEFITS.** These are real, not just hypothetical, dangers in allowing the government (and private citizens) unfettered access to people's genomes.
- **REAL CONSTRAINTS AND OVERSIGHT, WITH INPUT FROM BROAD STAKEHOLDERS, IS IMPERATIVE.** Existing regulatory structures, including self-monitoring, are insufficient. We need new, robust, and independent training, oversight, transparency, and accountability mechanisms – bringing in not just law enforcement and legal system stakeholders but experts in health research, racial justice, medical ethics, consumer privacy, clinical QA/QC, etc.

	Traditional forensic DNA/CODIS system	Genetic Genealogy
Test type	<ul style="list-style-type: none"> Non-coding, "junk" STR, ~20 loci loci (~10,000 bp of repeats) 	<ul style="list-style-type: none"> SNP, "gold," panels developed for biomedical research, ~600k to 1 million nucleotides (GTCA)
Analysis done by	<ul style="list-style-type: none"> Government analysts in regulated government labs, or outsourced labs compliant with QAS 	<ul style="list-style-type: none"> Largely unregulated private, for-profit companies; private persons
Sample restrictions	<ul style="list-style-type: none"> <i>Source</i>: putative perpetrator crime scene sample (no victims, clear non-suspects, non crime-scene evidence) <i>Quality</i>: 8+ loci + rarity; single source or deconvolved or mixture under 4 alleles/loci <i>Kits</i>: validated & standardized "profile" <i>Kits</i>: validated within laboratory <i>Lab/analyst</i>: CODIS QA/QC, including accreditation 	<ul style="list-style-type: none"> Site, vendor dependent; possibly none
Data storage	<ul style="list-style-type: none"> Paperwork/documentation required Audits for accuracy No national storage of elimination samples, witnesses, or non-perpetrators Decentralized data; pointer system 	<ul style="list-style-type: none"> Site, vendor, genealogist dependent; possibly none
Search restrictions	<ul style="list-style-type: none"> Access limited to pre-qualified personnel Criminal penalties for misuse 	<ul style="list-style-type: none"> Site, vendor, genealogist dependent and self-enforced by genealogists; possibly none
Privacy of target AND non-target others	<ul style="list-style-type: none"> Weak ancestral, 1st degree relatives 	<ul style="list-style-type: none"> Biomedical information; possibly behavioral info Detailed ancestral; links to thousands well beyond social family Implicates ancestors and descendants

What other crime scene evidence is as...

- **EVOLVING:** Not limited to informational value at the moment of seizure, but revelatory about the past (prior generations) and future (unborn descendants) and *continues* to gain capacity to reveal sensitive information.
- **IMMUTABLE:** If obtained by bad actors or misuse is feared, can't just revoke or "reissue" your (or your descendants') DNA.
- **MONETIZABLE:** Has tremendous value *outside* of crime-solving.

Military

 > Military News

Pentagon Leaders Tell Troops to Stop Using Mail-In Genealogy DNA Kits

In a way of explanation for the new order, the memo states, “These **[direct-to-consumer]** genetic tests are largely unregulated and could expose personal and genetic information, and potentially create unintended security consequences and increased risk to the joint force and mission.” Inaccurate ancestry DNA testing by unsecured companies is the worry of the DoD.

[Forbes](#)Insurance
industry

Consumer privacy advocates argue that there need to be more regulations to limit the use of genetic information by insurance companies in order to protect privacy and prevent discrimination.






“There’s probably nothing more personal than your genetic information,” says Susan Grant, director of consumer protection and privacy at the Consumer Federation of America. “Of all the kinds of sensitive data there may be about people, that’s right up at the top of the list.”

The insurance industry, on the other hand, claims that consumers benefit when insurers have this information.

FTC/consumer
privacy

Sensitive health information – including genetic data – requires intensive care. If your company collects or maintains consumer health information, you’ve raised the bar on the privacy and security standards you must implement. Take particular care to substantiate the promises you make about your data practices. (By the way, if you haven’t read the FTC’s May 2023 [Policy Statement on Biometric Information](#), set aside time now.)

- Wrongful arrest & detention (and even conviction)
- Overbroad & intrusive investigations, with a lack of accountability (and incentives to break rules and push ethical boundaries)
- Spillover effects: undermining community trust and public health benefits of DNA, especially for communities of color

-  ***United States v. Weikert*, 504 F.3d 1 (1st Cir. 2007):** “Weikert's argument [is that] the government might disregard its current stated procedure of using only the specified section of junk DNA to create an identifying profile, and might instead examine other sections of his DNA to extract personal information [such as “information about his daughter, his parents, his other family members [or] about diseases, environmental predispositions, or recessive traits].... We emphasize that other factors, such as demonstrated misuse of the DNA samples, a change in the government's collection procedures to include non-junk DNA, or the discovery of new uses for “junk DNA” would require a reevaluation of the reasonableness balance”
-  ***U.S. v. Mitchell*, 652 F.3d 387 (3d Cir. 2011):** Should technological advancements change the value of “junk DNA,” reconsideration of our Fourth Amendment analysis may be appropriate.”
-  ***United States v. Kriesel*, 720 F.3d 1137 (9th Cir. 2013):** We have previously stressed that if scientific discoveries make clear that junk DNA reveals more about individuals than we have previously understood, we should reconsider the government's DNA collection programs.
-  ***Haskell v. Harris*, 669 F.3d 1049 (9th Cir. 2012):** If we were addressing a legislative scheme in which the Government could freely use a person's DNA sample in any manner and for any purpose, serious privacy interests could be at stake. But we are not presented with an open-ended legislative scheme in which citizens' entire genomes are placed on file with the Government.
-  ***United States v. Amerson*, 483 F.3d 73 (2d Cir. 2007):** We are mindful of the vast amount of sensitive information that can be mined from a person’s DNA and the very strong privacy interests that all individuals have in this information...Should the uses to which “junk DNA” can be put be shown in the future to be significantly greater than the record before us today suggests, a reconsideration of the reasonableness balance struck would be necessary .”

Washington state man released as cold-case murder suspect sues detective

3.10 In between the date of Plaintiff's arrest, on April 28, 2019, and his release on November 30, 2022, Plaintiff's life was destroyed, and he suffered severe emotional distress and trauma. He lost everything that was important to him: his job, his friends, and his home. During Plaintiff's time in custody, Plaintiff's wife was terminally ill. Plaintiff's attempts to see and hold his wife prior to her death were denied in a two-sentence order. She passed in June 2021 while Plaintiff sat in Clark County Jail awaiting trial. And while Plaintiff welcomed his freedom, the Prosecution's dismissal has not removed the cloud of suspicion that remains over Plaintiff to this day.

[Source](#)

A Washington man who was jailed for three years on charges accusing him of the 1994 cold-case rape and murder of a Vancouver, Clark County, woman — only to have the case dismissed — has sued the detective who accused him, alleging he “made deliberately false statements” and acted “with reckless disregard for the truth.”

Richard E. Knapp, in a federal civil rights lawsuit filed Feb. 13 in Tacoma, alleges Vancouver police Detective Dustin Goudschaal made false sworn statements and omissions in a search warrant and in charging documents alleging Knapp assaulted and killed 26-year-old Audrey Hoellein Frasier in her Vancouver apartment in July 1994.

Frasier, who lived with her 5-year-old son, had been strangled and sexually assaulted, according to police and prosecutors.

The complaint alleges the charges relied entirely on the same “cutting-edge” genealogical technology used to [track down the infamous Golden State Killer](#) and touted as a powerful tool to identify unknown subjects using DNA testing, high-speed computers and family history.

Investigators collected multiple DNA samples from the scene of Frasier's homicide, but none matched their initial suspects. The Police Department also submitted the samples to a national database but came up empty, according to the charges and news reports.

According to news reports, Goudschaal and another detective then sent the DNA evidence to Parabon Laboratories, a Virginia-based company that specializes in DNA profiling for law enforcement.

Clark County prosecutors initially embraced the investigation, charging and arresting Knapp in April 2019, hailing the advantages and success of the new technology and investigation techniques.

Then, in 2022 — with much less fanfare — prosecutors dropped the charges against Knapp, who had been held for three years on \$1 million bail and now appears to have been falsely accused, stating the office “was no longer convinced beyond a reasonable doubt, based on the evidence we have as we understand it now, that Mr. Knapp could be convicted.”

2023 WL 6314658

Only the Westlaw citation is currently available.

United States District Court, D. Rhode Island.

Joao MONTEIRO, Plaintiff,

v.

Susan CORMIER, Defendant.

No. 1:21-cv-00046-MSM-LDA

|

Signed September 28, 2023

Attorneys and Law Firms

[citation](#)

*2 At the time of Mr. Monteiro's arrest, he was married and had four children.³ As a result of the publicity accusing him of Christine's murder, Mr. Monteiro alleges that he lost his job despite his tenure of 15 years with a single employer and has not been able to work since. He has reported that he became homeless. According to a declaration from his sister, he became a recluse in the wake of the publicity identifying him as a child murderer. (ECF No. 50-56.)

The field of forensic DNA analysis is constantly advancing. One important change involves the ability to detect and analyze very small quantities of DNA ([Butler 2012](#), [Butler 2015a](#)). During the early decades of forensic DNA analysis, an evidence sample containing thousands of cells, such as a visible blood or semen stain, was needed to produce a DNA profile. Today, analysts can extract a DNA profile from the few skin cells that someone might leave behind when handling an object.

Distinguishing one person's DNA from another in these mixtures, estimating how many individuals contributed DNA, determining whether the DNA is even relevant or is from contamination, or whether there is a trace amount of suspect or victim DNA make DNA mixtures inherently more challenging to interpret than single-source samples. These issues, if not properly considered and communicated, can lead to misunderstanding the strength and relevance of the DNA evidence in a case.

When laboratories analyze high-quality, single-source samples, decision-makers often have confidence in DNA test results in part because it has been demonstrated that different laboratories will arrive at the same result; that is, obtain the same DNA profile at the tested loci. This is regardless of the specific instruments, kits, and software used. However, multiple interlaboratory studies conducted by different groups over the past two decades have demonstrated a wide range of variation in how specific DNA *mixtures* are interpreted ([Duewer et al. 2001](#), [Crespillo et al. 2014](#), [Benschop et al. 2017a](#), [Barrio et al. 2018](#), [Butler et](#)

DNA Mixture Interpretation: *A NIST Scientific Foundation Review*

[citation](#)

Colorado's Star DNA Analyst Intentionally Manipulated Data, Investigation Finds

Yvonne "Missy" Woods allegedly cut corners and violated policies for years, affecting more than 650 cases

By [Dan Frosch](#) [Follow](#)

March 8, 2024 2:07 pm ET

Colorado's star DNA scientist intentionally manipulated evidence for years, calling into question all of the criminal cases she worked on in her nearly three-decade career, according to a preliminary investigation released by officials Friday.

Yvonne "Missy" Woods, who helped solve some of the state's most notorious crimes, [abruptly left her post last November](#) after the Colorado Bureau of Investigation discovered anomalies in her work and initiated a criminal probe. The internal inquiry released Friday asserts that Woods, long one of the bureau's most respected analysts, purposefully altered DNA testing results.

The report said her manipulation affected at least 652 cases she handled between 2008 and 2023. The total could end up being higher, as investigators are still reviewing Woods's cases dating back to the beginning of her career in 1994.

[source](#)

Framed for Murder By His Own DNA

W

hen the DNA results came back, even Lukis Anderson thought he might have committed the murder.

"I drink a lot," he remembers telling public defender Kelley Kulick as they sat in a plain interview room at the Santa Clara County, California, jail. Sometimes he blacked out, so it was possible he did something he didn't remember. "Maybe I did do it."

They were Anderson's medical records. Because his murder charge could carry the death penalty, Kulick had the investigator pull everything pertinent to Anderson's medical history, including his mental health, in case they had to ask for leniency during sentencing.

What happened, although months would pass before anyone figured it out, was that Lukis Anderson's DNA had found its way onto the fingernails of a dead man he had never even met.

Kulick remembers turning to the investigator, who was staring back at her. She was used to alibis being partial and difficult to prove. This one was signed by hospital staff. More than anything, she felt terrified. "To know that

<https://www.themarshallproject.org/2018/04/19/framed-for-murder-by-his-own-dna>

- Wrongful arrest & detention (and even conviction)
- Overbroad & intrusive investigations, with a lack of accountability (and incentives to break rules and push ethical boundaries)
- *Spillover effects*: Undermining public health benefits of DNA generally, especially for communities of color

Could law enforcement...

- GG for non-homicide/rape crimes?
- Pretextual offenses?
- Go beyond agreed terms of service or fake identity to get access to non-LE data?
- Access profiles that haven't agreed to LE access?
- Issue subpoena or get court order for GG search of closed commercial databases like 23andMe?
- GG to find an eyewitness, a reluctant victim (e.g., rape)?
- Set up fake accounts to mine for data
- Upload fake samples in attempt to ascertain the profiles of people they know are in the database? ("reverse search")
- Surreptitiously sample persons *known not to be* suspects, to aid investigation?
- Surreptitiously sample a large number of potential targets in order to speed up investigation?
- Retain surreptitious samples and profiles in a rogue LE databases?
- Retain elaborate family trees in LE databases?
- Retain intimate data on uncontrolled laptops etc. (birth, death, financial, marriage, immigration, adoption, religious, educational records etc.)
- Disclose incidental findings, whether for LE purpose or some other reason (e.g., alert family member of treatable genetic condition, threaten family member with exposing illegitimate child if don't cooperate)?

Could law enforcement...~~already have~~

- ~~GG for non-homicide/rape crimes?~~
- Pretextual offenses?
- ~~Go beyond agreed terms of service or fake identity to get access to non LE data?~~
- ~~Access profiles that haven't agreed to LE access?~~
- ~~Issue subpoena or get court order for GG search of closed commercial databases like 23andMe?~~
- GG to find an eyewitness, a reluctant victim (e.g., rape)?
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- Upload fake samples in attempt to ascertain the profiles of people they know are in the database? ("reverse search")
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OUR COMMITMENT

We won't share your DNA

We believe your DNA belongs to YOU and only you ... period. For that reason, we will never sell your DNA to third parties.

Can the other guys say that?

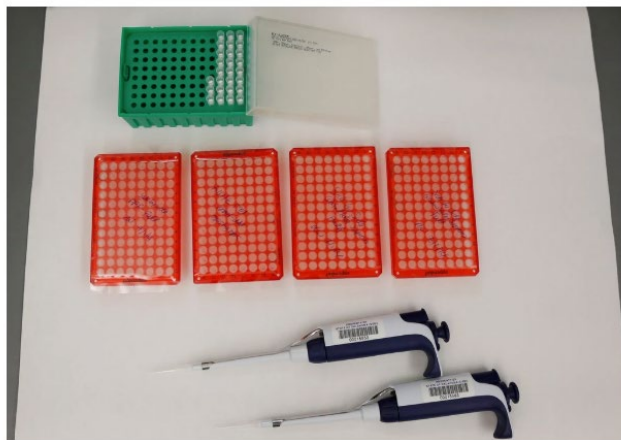


D. For Legal or Regulatory Process:

- We may share your Personal Information if we believe it is reasonably necessary to:
- i. Enforce or apply the FamilyTreeDNA Terms and Conditions;
 - ii. Comply with a valid legal process (e.g., subpoenas, warrants);
 - iii. Protect the security or integrity of the Services; or
 - iv. Protect the rights, safety, or property, of FamilyTreeDNA, our employees or users.
- If compelled to disclose your Personal Information to law enforcement, we will do our best, unless prohibited by law, to provide you with notice.

The New York Times

FamilyTreeDNA Admits to Sharing Genetic Data With F.B.I.



FamilyTreeDNA, an at-home DNA testing company, apologized for failing to disclose it was sharing genetic information with the F.B.I. to help solve rapes and murders. Some of the site's users felt the company had betrayed them. Sue Ogrocki/Associated Press

By Matthew Haag

Feb. 4, 2019



Privacy Best Practices for Consumer Genetic Testing Services

July 31, 2018

The Future of Privacy Forum, along with leading consumer genetic and personal genomic testing companies 23andMe, Ancestry, Helix, MyHeritage, and Habit, released [Privacy Best Practices for Consumer Genetic Testing Services](#). These companies have been joined by African Ancestry, FamilyTreeDNA,* and Living DNA in supporting the Best Practices as a clear articulation of how leading firms can build trust with consumers.

*In January 2019, Family Tree DNA revealed an agreement with the FBI that conflicts with FPF's Best Practices. FPF immediately removed Family Tree DNA as a supporter.

Raw DNA Data Provided to GEDmatch

When you upload Raw Data to GEDmatch, you agree that the Raw Data is one of the following:

- Your DNA;
- DNA of a person for whom you are a legal guardian;
- DNA of a person who has granted you specific authorization to upload their DNA to GEDmatch;
- DNA of a person known by you to be deceased;
- DNA obtained and authorized by law enforcement to either: (1) identify a perpetrator of a violent crime against another individual; or (2) identify remains of a deceased individual;
- An artificial DNA kit (if and only if: (1) it is intended for research purposes; and (2) it is not used to identify anyone in the GEDmatch database); or
- DNA obtained from an artifact (if and only if: (1) you have a reasonable belief that the Raw Data is DNA from a previous owner or user of the artifact rather than from a living individual; and (2) that previous owner or user of the artifact is known to you to be deceased).

'Violent crime' is defined as homicide or sexual assault.

By registering for GEDmatch and using the Site, you agree that you will not upload Raw Data that does not satisfy one of these categories. If you have previously uploaded Raw Data that does not satisfy one of these categories, you hereby agree that you will remove it immediately.

GEDmatch will not be responsible for any Raw Data provided to GEDmatch in violation of this Policy. Violators of this Policy will have their Raw Data or other personal information deleted without warning, their access will be blocked, and/or other remedial steps may be taken, including any legal action allowed under law.

The Arrest Of A Teen On An Assault Charge Has Sparked New Privacy Fears About DNA Sleuthing

Critics fear we're on a slippery slope of genetic genealogy being used to investigate less serious crimes. "We're right here on the precipice, sliding down," one expert said.

‘Game-Changer’ Warrant Let Detective Search Genetic Database

Privacy experts say it could set a precedent, opening up all consumer DNA sites to law enforcement agencies across the country.

Biotech & Health

Ancestry says it fought two police requests to search its DNA database

[source](#)

Zeak Whittaker / 11:16 AM EST / February 10, 2021

It’s not the first time Ancestry has pushed back against a legal demand. Last year the company [said it rejected](#) an out-of-state search warrant, ordered by a court in Pennsylvania, to “seek access” to its DNA database on the grounds that the warrant was “improperly served.”

Ancestry has only complied [with one search warrant](#) for DNA data from a database it acquired and later made public, not realizing that police would [use the database](#) to search for leads.



COUNTRY	DATA REQUESTS RECEIVED	NUMBER OF USERS / ACCOUNTS SPECIFIED	DATA PRODUCED (BY USER ACCOUNT)
TOTAL	11	15	0
United States	11	15	0

POLICE ARE GETTING DNA DATA FROM PEOPLE WHO THINK THEY OPTED OUT

Forensic genetic genealogists skirted GEDmatch privacy rules by searching users who explicitly opted out of sharing DNA with law enforcement.

The loophole, which a source demonstrated for The Intercept, allows genealogists working with police to manipulate search fields within a DNA comparison tool to trick the system into showing opted-out profiles. In records of communications reviewed by The Intercept, Moore and two other forensic genetic genealogists discussed the loophole and how to trigger it. In a separate communication, one of the genealogists described hiding the fact that her organization had made an identification using an opted-out profile.

Roy, playing the part of opposing counsel, was pointed in her cross-examination: Was Binder aware of the GEDmatch loophole? And had she used it? Yes, Binder said. “How many times?” Roy asked.

“A handful,” Binder replied. “Maybe up to a dozen.”

Despite those words of caution, Moore is one of several high-profile genetic genealogists who exploited a loophole in a commercial database called GEDmatch, allowing them to search the DNA of individuals who explicitly opted out of sharing their genetic information with police.

[source](#)



IGG Professional Standards - now available [here!](#)

The Investigative Genetic Genealogy Accreditation Board (IGGAB) is addressing the urgent need for ethical standards and proof of proficiency in this rapidly developing field by developing professional standards and an examination process that will allow applicants to become an Accredited Investigative Genetic Genealogist (AIGG).

Verogen Increases Costs for Law Enforcement — Again

DECEMBER 17, 2022 [THE DNAGEEK](#) [17D COMMENTS](#)

Verogen, the for-profit company that owns GEDmatch, recently increased the price to upload DNA for law-enforcement cases by more than 25%. As of December 1, 2022, the price is **\$700 per upload**, comparable to FamilyTreeDNA. It was previously **\$550 per upload**.

Holes used DNA recovered from a crime scene to find the killer's great-great-great grandparents, who lived in the early 1800s. Branch by painstaking branch, he and a team created about 25 family trees containing **thousands** of relatives down to the present day.

SCOURING RECORDS THAT LINK PEOPLE BIOLOGICALLY, NOT SOCIALLY, REVEALS:

- *secret relationships*
- *health trends (e.g., lung cancer runs in the family)*
- *longevity and chronic illness*
- *fertility trends (maternal age at birth, miscarriages, multiple partners, assisted reproduction)*
- *political or religious affiliations*
- *residential stability*
- *financial stability*
- *educational attainment trends*
- *social identities*

Moore's team and IFPD investigators utilized other information, such as age, location, triangulation between matches, and/or ancestry and phenotype (trait) predictions, to narrow down the possibilities before a final list of six possible leads was produced. The science showed that DNA collected from just one of the individuals on this list, even if it wasn't a match to the DNA at the 1996 crime scene, would lead to the further identification of the suspect DNA.

IFPD set out to collect a DNA sample from one of these six people – people who were spread out around the country. While IFPD was fully prepared to send the entire team of detectives to different states if needed and had plans in place to do so, the closest lead was living in Twin Falls, Idaho. In February, IFPD investigators took a team of detectives to Twin Falls to hunt for DNA.

**UNITED STATES DEPARTMENT OF JUSTICE
INTERIM POLICY
FORENSIC GENETIC GENEALOGICAL DNA ANALYSIS AND SEARCHING**

In certain cases, the genetic association of an FGG profile with a GG service user, in conjunction with subsequent genealogy research, may identify one or more third parties²³ who may have a closer kinship relationship to the donor of the forensic sample than the associated GG service user. In such cases, the acquisition of reference samples from these third parties for the purpose of conducting FGGS may help the investigative agency identify the donor of the forensic sample.

An investigative agency must seek informed consent from third parties before collecting reference samples that will be used for FGGS, unless it concludes that case-specific circumstances provide reasonable grounds to believe that this request would compromise the integrity of the investigation. If that determination is made, the investigative agency shall consult with, and receive approval from, the prosecutor²⁴ before covertly collecting any reference samples that will be used for FGGS. The investigative agency shall also consult with the DLO, who may provide guidance to investigators about the type and nature of biological samples that may prove most conducive to FGG analysis. Covert collection shall be conducted in a lawful manner. In addition, a search warrant shall be obtained by the investigative agency before a vendor laboratory conducts FGG analysis on any covertly-collected reference sample.

- Wrongful arrest & detention (and even conviction)
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- *Spillover effects*: Undermining public health benefits of DNA generally, especially for communities of color

Table 1. Percentage of reported offenses cleared by law enforcement, 1990-2022

Period	Total	Violent	Property	Homicide	Rape	Robbery	Assault	Burglary	Vehicle theft	Larceny/ theft
1990-94	21.0%	46.4%	16.1%	58.2%	52.5%	24.2%	59.8%	12.8%	10.9%	19.2%
1995-99	20.8%	49.4%	15.1%	59.0%	49.5%	25.6%	61.0%	12.9%	10.1%	17.4%
2000-04	18.6%	47.1%	13.5%	53.7%	45.4%	25.3%	57.6%	12.6%	9.6%	15.0%
2005-09	17.8%	42.8%	13.6%	55.2%	42.8%	26.3%	52.8%	12.8%	8.6%	15.4%
2010-14	18.0%	44.6%	13.8%	63.0%	41.5%	28.0%	54.2%	13.0%	7.5%	15.7%
2015-19	16.3%	45.2%	11.1%	62.4%	37.7%	30.8%	53.5%	11.0%	9.1%	11.7%
2020	15.4%	45.2%	9.3%	58.9%	34.8%	33.2%	51.0%	11.9%	9.4%	8.5%
2021	13.1%	40.0%	7.3%	54.5%	28.7%	28.1%	45.3%	10.5%	7.7%	6.4%
2022	13.2%	41.0%	7.2%	58.7%	27.7%	28.0%	47.0%	10.0%	7.0%	6.6%
Change, 2022 clearance rate vs.:										
1990-94	-38%	-12%	-55%	+1%	-47%	+16%	-21%	-22%	-29%	-66%
2005-09	-26%	-4%	-47%	+6%	-35%	+7%	-11%	-22%	-10%	-59%

Source: DOJ (2022). Note: Rates for each 5-year period are the annual average for that period

March 2019

DNA EVIDENCE

DOJ Should Improve
Performance
Measurement and
Properly Design
Controls for
Nationwide Grant
Program

Table 3. Law enforcement spending vs. crime clearances, by 5-year period, 1990-2022

5-year Average	Law enforcement Spending per-capita*	Percent cleared by arrest	Reported Part I offenses		
			Numbers of clearances		
			All*	Violent	Property*
1990-94	\$445	21.0%	422,731	152,418	270,313
1995-99	\$481	20.8%	321,292	125,388	195,904
2000-04	\$522	18.6%	253,133	97,208	155,925
2005-09	\$593	17.8%	230,144	79,923	150,221
2010-14	\$582	18.0%	207,034	69,804	137,230
2015-19	\$615	16.3%	187,231	78,644	108,586
2020	\$669	15.4%	156,796	78,653	78,143
2021	\$686	13.1%	136,262	73,496	62,766
2022	\$651	13.2%	144,133	79,122	65,011
Change, 2021-22 vs:					
1990-94	+46%	-38%	-66%	-48%	-76%
2005-09	+10%	-26%	-37%	-1%	-57%

Sources: CHP (2023); Controller (2023); DIR (2023); DOF (2023); DOJ (2023). *Spending is in constant 2022 dollars adjusted for inflation. The decline in spending from 2021 to 2022 largely resulted from the non-reoccurrence in 2022 of 2021's one-time contribution of \$800 million by Alameda County to its public protection employee pension fund.

> [Ethn Dis.](#) 2020 Apr 2;30(Suppl 1):159-166. doi: 10.18865/ed.30.S1.159. eCollection 2020.

Why African Americans say "No": A Study of Pharmacogenomic Research Participation

Reasons patients gave for declining participation by category

Reason	Mean age in years [SD]	% Male	n (%)
Study requires too much blood	67.06 [13.1]	43.8	16 (19.5)
Mistrust of research	66.2 [16.3]	60	10 (12.2)
Concerns about genetic testing	54.6 [16.9] ^a	83.3	12 (14.6)

> [Ethn Health.](#) 2019 Aug;24(6):694-704. doi: 10.1080/13557858.2017.1346189. Epub 2017 Jul 1.

Factors associated with participation by African Americans in a study of the genetics of glaucoma

Subjects who did not enroll in the POAAGG study were primarily distinguished by their discomfort in providing DNA for research studies. Many studies have cited mistrust in research as the most commonly identified barrier to study participation among African Americans ([Kaufman et al. 2008](#); [Bussey-Jones et al. 2009](#); [Rivers et al. 2013](#)). In fact, surveys have shown that only 25% ([Mouton et al. 1997](#)) to 44% ([Millon-Underwood, Sanders, and Davis 1993](#)) of African Americans view research in the United States as ethical. This underlying attitude of mistrust likely contributes to subjects declining to participate in the study.

Table 2.

Final coding categories and exemplar quotes

Coding Category	Exemplar Quote
Study requires too much blood	"That's a lot of blood. I have been poked too many times already since I've gotten here."
Mistrust of research	"I don't want my information in a database."
Concerns about genetic testing	"You know the police can get access to your genetic information."
Too little time	"I don't have time. I'm trying to rush out of here."
No direct health benefit to participant	"How does this help me? There will be others more interested in participating."
Is/has been in too many studies	"I'm already enrolled in a study in North Carolina."
Not enough compensation	"If I'm giving my blood, I should get paid."
No reason given	"I've just decided not to [participate]."
Other	"I have too much going on already as it is."

Despite mandates by the federal government to ensure inclusion of women and minorities in all federally funded research,¹ African Americans continue to participate less frequently than Whites. Lower participation rates among African Americans have been reported across various study types (e.g., controlled clinical treatment trials,^{2,3} intervention trials,^{4,5} as well as studies on various disease conditions, including AIDS,⁶⁻⁸ Alzheimer's disease,⁹ prostate cancer and other malignancies,¹⁰⁻¹⁴ stroke,¹⁵ and cardiovascular disease¹⁶).

Several factors that affect the participation of African Americans in research, including elements of study design, such as the use of community-based research, and sociocultural factors, such as mistrust, have been identified^{17,18} as barriers to research participation. Mistrust stems from historic and ongoing discrimination, including socioeconomic and

EMILY MULLIN
SCIENCE NOV 8, 2023 12:46 PM

New Jersey Keeps Newborn DNA for 23 Years. Parents Are Suing

All US states take pinpricks of blood from newborns to test for diseases. New Jersey stores them for decades and may allow them to be used in police investigations.

...ical perspective
mistrust because of the extensive
on human subject review and
African Americans goes well
of medical experimentation
health care infrastructure is
more than four centuries of
principal contributor to current
involving African Americans
example, researchers at a pr
that hypothesized a genetic
they were able to convince p
medications (including asthma medications), ingesting a mono-amine (low protein) diet, an

Woman Sues San Francisco Over Arrest Based on DNA From Her Rape Kit

The woman had provided her DNA to police after being sexually assaulted in 2016, her lawyer said. About five years later, officers used it to charge her with retail theft.

Hospitals Face Tricky Scenarios With Law Enforcement Requests for Patient DNA

whether mistreatment of African Americans that has occurred more recently than the Tuskegee syphilis study is exacerbating mistrust today.

and the administration
be associated with
human subject
⁴⁰ It is fair to ask

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4354806/>

New Mexico high court hears 'warrior gene' arguments

DNA Tests Make Native Americans Strangers in Their Own Land

Reviving race science plays into centuries of oppression.

AVIVA CHOMSKY

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> [Am J Phys Anthropol.](#) 2021 Jun;175(2):387-398. doi: 10.1002/ajpa.24150. Epub 2020 Sep 28.

How White nationalists mobilize genetics: From genetic ancestry and human biodiversity to counterscience and metapolitics

Rabbinate DNA tests seek Jewishness in the blood, become a bone of contention

Controversial method began in Moscow, spread to Jerusalem and Sydney, as a private bid to confirm ex-Soviets as Jews. Now it faces a High Court challenge and a thunderous outcry

At issue is whether a district court acted properly in excluding evidence of a so-called warrior gene variant linked to a predisposition toward aggressive and violent behavior as it weighed murder charges against Anthony Blas Yopez. The Supreme Court listened to oral arguments from opposing attorneys without yet issuing a decision.

Sigrid Johnson Was Black. A DNA Test Said She Wasn't.

The surge in popularity of services like 23andMe and Ancestry means that more and more people are unearthing long-buried connections and surprises in their ancestry.

A DNA test said a man was 4% black. Now he wants to qualify as a minority business owner.

Framing the utility and potential pitfalls of relationship and identity DNA testing across United States immigration contexts

Uighurs And Genetic Surveillance In China

December 7, 2019 · 8:03 AM ET

Heard on [Weekend Edition Saturday](#)

> [Asian J Androl.](#) 2023 Sep 8;26(1):41-45. doi: 10.4103/aja202335. Online ahead of print.

Review Article | [Open access](#)

Association between MT erectile dysfunction and

The neurobiological basis of human aggression: A review on genetic and epigenetic mechanisms

Regina Waltes, Andreas G. Chiochetti, Christine M. Freitag ✉

First published: 22 October 2015 | <https://doi.org/10.1002/ajmg.b.32388> | Citations: 120

Risk of sex offending linked to genetic factors, study finds

> [Science.](#) 2019 Aug 30;365(6456):eaat7693. doi: 10.1126/science.aat7693.

Male relatives of sex offenders five
similar crimes, and 40% of risk is

Large-scale GWAS reveals insights into the genetic architecture of same-sex sexual behavior

New NIH study reveals shared genetic markers underlying substance use disorders

Review Article | [Open access](#) | [Published: 18 February 2021](#)

From *warrior genes* to translational solutions: novel insights into monoamine oxidases (MAOs) and aggression

[Alexios-Fotios A. Mentis](#), [Efthimios Dardiotis](#), [Eleni Katsouni](#) & [George P. Chrousos](#) ✉

[Translational Psychiatry](#) 11, Article number: 130 (2021) | [Cite this article](#)

vention and treatment strategies for multiple substance

Genetics are

“Cite this article

new study says

From hundreds of thousands of people revealed a handful of
genetic variants connected with same-sex sexual behavior

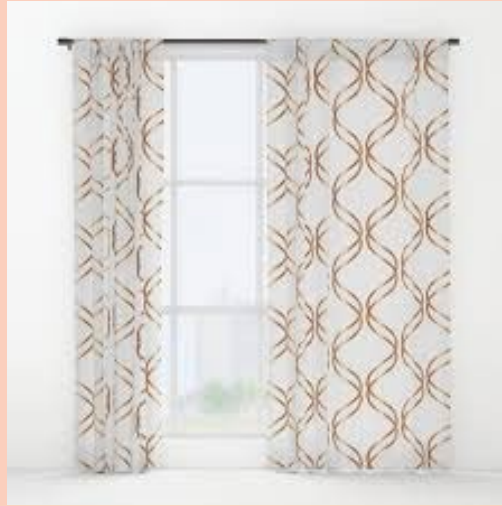
Maryland Code, Criminal Procedure § 17-102

- Warrant to do FIGG, certify that satisfy criteria (serious crime type, putative perpetrator, STR/reasonable efforts exhausted)
- Expressly prohibit medical/psychological traits or predispositions
- Only DTCs that have explicit notice and express consent
- Licensed laboratory
- Informed written consent for 3rd party samples, documented by video or audio; option to get court order to covertly collect if putative perpetrator/3rd party and necessary and minimization of intrusiveness
- Restrictions on use/destruction of samples and data in cases that do not result in prosecution; retention rules for genealogists
- Criminal penalties and civil liability for noncompliance
- Defense access for exonerative purposes pre- and post-trial
- Licensing program and requirements for labs and genealogists
- Detailed public disclosure of use with review by panel of stakeholders

[Ram, Murphy & Suter, Regulating Forensic Genetic Genealogy Science \(2021\)](#)

In the absence of legislation, a federal interagency process must...

- Assess impacts and leverage federal power by tapping expertise **beyond DOJ/FBI stakeholders** including:
 - *FTC (consumer protection, regulation of private providers, genetic and data privacy/retention, enforcement of Terms of Service & representations to consumers)*
 - *HHS/NIH (health and research privacy and equity, disability antidiscrimination, ethics, QA/QC standards from CLIA/Medicare context, data retention/reuse, etc.)*
 - *Interior (expertise in Tribal/Native American issues)*
 - *DHS (implications for national security, immigration equity)*
 - *DOD (implications for military/covert operations)*
 - *Treasury (implications for insurance, financial services, etc.)*
 - *Labor, Education (implications for student and worker privacy etc.)*
 - *Commerce (NIST expertise in forensics)*
 - *White House: OSTP, OMB, EOP/DPC, etc.*
- Center and elevate the racial justice and racial equity concerns given (to quote President Biden's EO) "the legacy of systemic racism in our criminal justice system and [the imperative to] work together to eliminate the racial disparities that endure to this day."
- Take a data-driven, cost-benefit approach that require concrete data concerning efficacy, impact. Use RFP and other federal grant processes to develop and impose standards (licensing/oversight), tracking of key metrics, and transparent reporting of information.



Thank you!

