CASE NO. CR 29-22-2805
2023 June 22 4:36 P.M.
CLERK OF DISTRICT COURT
LATAH COUNTY
BY _____ DEPUTY

Anne C. Taylor, Public Defender
Kootenai County Public Defender
PO Box 9000
Coeur d'Alene, Idaho 83816
Phone: (208) 446-1700; Fax: (208) 446-1701
Bar Number: 5836
iCourt Email: pdfax@kcgov.us

Elisa G. Massoth, PLLC
Attorney at Law
P.O. Box 1003
Payette, Idaho 83661
Phone: 208-642-3797; Fax: 208-642-3799

Assigned Attorney:
Anne C. Taylor, Public Defender, Bar Number: 5836
Jay W. Logsdon, Chief Deputy Public Defender, Bar Number: 8759
Elisa G. Massoth, Attorney at Law, Bar Number: 5647

IN THE DISTRICT COURT OF THE SECOND JUDICIAL DISTRICT OF THE STATE OF IDAHO, IN AND FOR THE COUNTY OF LATAH

STATE OF IDAHO **Plaintiff,** **V.** **BRYAN C. KOHBERGER,** **Defendant.**	**CASE NUMBER CR29-22-0002805** **DECLARATION OF ANNE C. TAYLOR IN SUPPORT OF DEFENDANT'S THIRD MOTION TO COMPEL**

I, Anne C. Taylor, do state and declare:

1. Counsel for Mr. Kohberger filed a specific request for discovery related to the DNA in this case titled Defendant's 3rd Supplemental Request for Discovery.
2. The State filed a specific response to that request. After reviewing the materials provided, the following remains to be discovered:
   a. Request 3 Profiles uploaded to a DNA database: *The State has provided information related to this request for the seized item the knife sheath only. The*

Defense has requested ALL DNA profiles, including three additional unidentified male DNA profiles developed during the course of law enforcement investigation. This information has not been supplied.

b. Request 6. Communications: *The State has not provided all emails, text messages, electronic messages or other messages and conversations regarding biological testing in this investigation.*

c. Request 9 and 10. Unexpected results and corrective actions: *This request has been partially complied with; however the response lacks the full scope of the request – 6 month before and 6 months after testing related to this investigation. Further, information relating to ALL lab personnel has not been provided.*

3. Part of the Third Supplemental Discovery Request was for materials related to Genetic Genealogy Testing.

a. *'The State <u>has</u> objected to this request in its entirety, and has filed a Motion for a Protective Order. Counsel for Mr. Kohberger requests this Court consider the contemporaneous Objection to the State's motion and Declarations in Support of the Motion to Compel. The requested discovery is properly sought pursuant to Idaho Criminal Rule 16. This discovery is necessary to the preparation of Mr. Kohberger's defense:*

i. Counsel for Mr. Kohberger has reviewed the materials provided in this case regarding the DNA testing; laboratory reports, bench notes and photographs. Further, experts in the field of Genetic Genealogy and DNA have consulted and offered information and guidance. The State acknowledges it used genetic genealogy testing in this case but claims it does not have to produce the records in the specific request for discovery. The defense disagrees.

ii. Counsel has learned, through consultation with experts and sources referenced below, that the use of genetic genealogy databases does not necessarily lead to a single individual as a potential suspect and that reports of these searches often reference multiple individuals for further investigation and DNA testing. In fact, the State acknowledges such in its Motion for Protective Order when it acknowledges "… hundreds of relatives …" (page 5 motion for protection order). The testing conducted by

a private lab is completely different in nature than the testing done by forensic labs. Genetic genealogy labs do not generate a "profile" in the same way that forensic labs do and there cannot be a direct comparison between the data obtained in this case by the Idaho State Forensic Crime Lab and the private lab. The tests used by private labs are either SNP (single nucleotide polymorphisms) or whole genome sequencing. These tests are similar to the methods used by commercial services such as 23andMe and Ancestry.com.

iii. Based upon information from experts in the field, I have learned that once a genetic genealogy profile is created and the testing by the private lab is completed, the profile is uploaded to a database that contains similar data from other individuals. Once the genetic genealogy profile is uploaded, the profile is compared within that database and relatives are identified.

iv. It is my understanding that once possible relatives have been identified, their identities are used to construct a family tree to identify possible suspects using public records and, in some instances, contacting individuals for further family information. This process leads to a pool of individuals rather than one specific individual. The possibility of other relatives who might be similar to Mr. Kohberger is extremely important to the Defense in this case. The processes used in this method of identification may be extremely important to Mr. Kohberger's defense. The timing and steps utilized are extremely important to Mr. Kohberger's case investigation and defense.

v. I have reviewed a copy of an Idaho State Police Announcement dated July 28, 2021, that the Idaho State Police Forensic Services Laboratory (ISPFS) secured a grant to fund genetic genealogy testing for unsolved Idaho cases. See attached exhibit A ISPFS contracted with Othram Laboratories in Texas. *See* attached Exhibit A.

vi. The U.S. Dept. of Justice issued its Interim Policy for forensic genetic genealogical DNA analysis and search in 2019. (https://www.justice.gov/olp/page/file/1204386/download). The policy describes the process that law enforcement engages in during these searches

and the results and limitations of the method. The identified individuals are "one or more genetic associations" that "means that the donor of the (forensic or reference) sample *may be related* to a service user," [emphasis added], which may require additional investigative work and testing. If a suspect is identified, the agency is required to retain "[a]ll FGG profiles, account information, and data … for potential use during prosecution and subsequent judicial proceedings." See attached Exhibit B

vii. A new collaborative, National Technology Validation and Implementation Collaborative was established in 2022. Its purpose is to collaborate and formulate methods and policy for labs and law enforcement to establish Forensic Investigative Genetic Genealogy programs. This collaborative contributed to a forensic science journal. The publication includes contributors from Idaho; Rylene Nowlin *Idaho State Police Forensic Services* and Alana Minton *Office of the Attorney General, State of Idaho*. This publication includes reference to the aforementioned U.S. Department of Justice Interim Policy. Of particular note is the policy of release of information in accordance with rules of discovery. See attached Exhibit C

viii. I am aware of specific news reports in this case, regarding Mr. Kohberger's DNA, as published by the NY Times on June 11, 2023, that "FBI personnel worked with the profile that Othram had produced….spending days building out a family tree that began with distant relatives."

ix. The NY Times sources have more information than the State has disclosed to the Defense. This NY Times article generated intense media coverage and interest, the scope of which is explained in the Truescope Report attached as Exhibit D.

x. In addition, Mr. Kohberger's defense team has discussed the use of statistics in this type of case with experts who have informed me that the manner of identifying Mr. Kohberger via this type of search may have significant impacts on the statistical analysis of the CODIS profile generated by the Idaho State Police Lab. Without access to the actual genetic genealogy search methods and results, it is impossible for qualified experts to address these issues.

xi. Counsel for Mr. Kohberger notes that the State utilized a statistical analysis number to claim a high likelihood of a match between the DNA on the sheath and that of Mr. Kohberger. The State, by its own admission, has taken a number of steps to identify Mr. Kohberger as a match. The statistical probability is not an absolute; the size of comparison sample and the nature of the search are important to ascertain conclusion bias.

xii. Mr. Kohberger has a right to effective assistance of counsel. He has a right to confront evidence. Counsel must undertake a thorough investigation of all parts of the case the State brings against Mr. Kohburger. As such the genetic genealogy investigation and process is necessary for the defense team to do its job.

I declare under penalty of perjury that the foregoing is true and correct, and that those matters stated upon information and belief are true to the best of my knowledge.

DATED this 22 day of June, 2023.

ANNE C. TAYLOR, PUBLIC DEFENDER
KOOTENAI COUNTY PUBLIC DEFENDER

BY: _____
ANNE TAYLOR
PUBLIC DEFENDER
ASSIGNED ATTORNEY

CERTIFICATE OF DELIVERY

I hereby certify that a true and correct copy of the foregoing was personally served as indicated below on the 22 day of June, 2023 addressed to:

Latah County Prosecuting Attorney –via Email: paservice@latahcountyid.gov
Elisa Massoth – via Email: legalassistant@kmrs.net
Ingrid Batey – via Email: ingrid.batey@ag.idaho.gov
Jeff Nye – via Email: jeff.nye@ag.idaho.gov

_____

Idaho State Police

Service Since 1939

Colonel Kedrick R. Wills
Director

Brad Little
Governor

To:	Idaho Chiefs, Sheriffs, and Prosecutors
From:	Matthew Gamette, ISP Forensic Services Laboratory System Director
Subject:	**Cold Case Help--Molecular Genealogy Resources**
Date:	July 28, 2021

The Idaho State Police Forensic Services Laboratory (ISPFS) is extremely excited to announce that we have secured a Bureau of Justice Assistance grant to fund genetic genealogy testing and searching of unsolved Idaho cases. The cases we are starting with are unsolved homicide, sexual assault, and missing person/unidentified remains cases. Idaho is the first state in the country to take the state-wide approach for this technology. Instead of each law enforcement (LE) agency having to negotiate their own contract, pricing, and quality control with a private lab and genealogist, ISPFS has done that at the state level through the Idaho Department of Purchasing. In addition, by ISPFS securing federal grant funding, we can offer these services to local, county, and state agencies at no cost to the local LE agency. In order to facilitate this, ISPFS has formed a State Genetic Genealogy Investigation team consisting of laboratory personnel, an Idaho State Police investigator/detective, and a representative from the Rocky Mountain Information Network (RMIN) to identify cases eligible for testing under this grant. Once a case is identified as eligible, the team is reaching out to the local law enforcement agency and prosecutor to bring them onto the team for that case. The state team is a resource for local LE. Idaho now has a formal contract with Othram Laboratories (a prominent leader in forensic genealogy) to conduct the genealogy testing and forensic genealogy searching. ISPFS is ensuring that Othram follows accepted laboratory processes and procedures, and complies with the United States DOJ interim policy on Forensic Genetic Genealogy DNA Analysis and Searching.

ISPFS has already searched our records for cases we know would be eligible under this program. We have started contacting individual Idaho law enforcement entities and prosecutors on approximately 15 of those cases. The law enforcement entity and prosecuting attorney are being asked to confirm certain case criteria and sign an MOU that they will investigate this case if the molecular genealogy technique generates investigative leads, that they will follow DOJ policy for investigating these cases, and that they will take all appropriate prosecution actions as an outcome of the investigation.

We want to be very clear that the local or county law enforcement agency will retain jurisdiction and responsibility for the case. The state team is in place to identify cases, coordinate with local entities, provide investigation resources (if requested), safeguard that the molecular genealogy technology and techniques are being appropriately used in Idaho, and ensure that all necessary resources are reliable and available at no cost to local LE for use of this technique. ISPFS is committed to ensuring that the lab science and genealogy work is robust, that the evidence is treated appropriately by the contract lab and in a way that allows for appropriate prosecution, and that the contract with the private lab and federal funding are spent appropriately. If more funding resources are needed to support this effort, ISPFS will obtain those resources in support of all Idaho law enforcement. ISPFS is also evaluating offering these services in Idaho if the need is demonstrated from this project.

We are accepting requests to work other cases that have not been identified by our team. If you have those cases, please reach out to our appointed project lead on this effort Ms. Rylene Nowlin. She can be reached at 208-884-7148 or Rylene.Nowlin@isp.idaho.gov All cases accepted into this program are subject to an MOU.

700 S. Stratford Drive • Meridian, Idaho 83642-6202

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

I. Purpose and Scope[1]

The purpose of this interim policy is to promote the reasoned exercise of investigative, scientific, and prosecutorial discretion in cases that involve forensic genetic genealogical DNA analysis and searching ('FGGS').[2] It provides guidance to Department agencies when formulating a thoughtful and collaborative approach to important interdisciplinary decisions in cases that utilize this investigative technique. Collaboration between investigators, laboratory personnel, and prosecutors is important because the decision to pursue FGGS may affect privacy interests, the consumption of forensic samples, and law enforcement's ability to solve violent crime.

The Department must use FGGS in a manner consistent with the requirements and protections of the Constitution and other legal authorities. Moreover, the Department must handle information and data derived from FGGS in accordance with applicable laws, regulations, policies, and procedures. When using new technologies like FGGS, the Department is committed to developing practices that protect reasonable interests in privacy, while allowing law enforcement to make effective use of FGGS to help identify violent criminals, exonerate innocent suspects, and ensure the fair and impartial administration of justice to all Americans.

The Department will continue to assess its investigative tools and techniques to ensure that its policies and practices properly reflect its law enforcement mission and its commitment to respect individual privacy and civil liberties. This interim policy establishes general principles for the use of FGGS by Department components during criminal investigations and in other circumstances that involve Department resources, interests, and equities.

The scope of this interim policy is limited to the requirements set forth herein. It does not control investigative, scientific, or prosecutorial activities or decisions not specifically addressed. The Department's individual law enforcement components may issue additional guidance that is consistent with the provisions of this interim policy.

---

[1] This interim policy provides Department components with internal guidance. It is not intended to, does not, and may not be relied upon to create any substantive or procedural rights or benefits enforceable at law or in equity by any party against the United States or its departments, agencies, entities, officers, employees, agents, or any other person in any matter, civil or criminal. This interim policy does not impose any legal limitations on otherwise lawful investigative or prosecutorial activities or techniques utilized by the Department of Justice, or limit the prerogatives, choices, or decisions available to, or made by, the Department in its discretion.

[2] As used in this interim policy, the term 'forensic genetic genealogical DNA analysis and searching,' or 'FGGS,' means the forensic genetic genealogical DNA analysis of a forensic or reference sample of biological material by a vendor laboratory to develop an FGG profile and the subsequent search of that profile in a publicly-available open-data personal genomics database or a direct-to-consumer genetic genealogy service.

Approved: 09.02.2019

Effectiv

II. Application

This interim policy applies to: 1) all criminal investigations in which an investigative agency in the Department of Justice ('investigative agency')[3] has exclusive or concurrent jurisdiction of the crime under investigation and the agency has lawful custody, control, or authority to use a forensic sample for FGG/FGGS; or 2) any criminal investigation in which the Department provides funding to a federal, state, local, or tribal agency to conduct FGG/FGGS; or 3) any criminal investigation in which Department employees or contractors conduct genealogical research on leads generated through the use of FGGS; or 4) any federal agency or any unit of state, local, or tribal government that receives grant award funding from the Department that is used to conduct FGG/FGGS.[4]

III. Background

a. STR DNA Typing and CODIS

Forensic DNA typing has historically been used to compare 13-20 STR DNA markers[5] between a forensic sample[6] and one or more reference samples.[7] When a suspect's identity is unknown, a participating crime laboratory may upload a forensic profile[8] into the FBI's Combined DNA Index System (CODIS). CODIS is a law enforcement database that compares DNA profiles derived from forensic samples to those of known offenders.

CODIS was created by the DNA Identification Act of 1994, Pub. L. No. 103-322 (1994), codified at 34 U.S.C. § 12592. This legislation authorized the FBI to create and maintain a national database comprised of designated DNA indices that are routinely searched against one another. If a CODIS search results in a confirmed match between a forensic profile and a known offender, a law enforcement lead is generated and the name of the matching offender is released. If the search does not result in a confirmed match, no lead is generated.

---

[3] As used in this interim policy, the term 'investigative agency' includes any federal, state, local, or tribal law enforcement agency that receives funding from the Department of Justice to conduct FGG/FGGS.

[4] The Department will implement this policy under its federal grant programs (as applicable) through the inclusion of a specific condition(s) in federal awards.

[5] STR DNA typing is a widely-used forensic DNA technology that examines 13-20 (or more) genetic locations on the non-sex chromosomes that contain 2 to 6 base-paired segments known as nucleotides, which tandemly repeat at each location. A 'marker' is a genetic locus, or location.

[6] A 'forensic sample' is biological material reasonably believed by investigators to have been deposited by a putative perpetrator and that was collected from a crime scene, a person, an item, or a location connected to the criminal event. For purposes of this interim policy, the term 'forensic sample' also includes the unidentified human remains of a suspected homicide victim.

[7] A 'reference sample' is biological material from a known source.

[8] As used in this interim policy, 'forensic profile' means an STR DNA typing result, and an STR and/or mitochondrial DNA typing result for unidentified human remains, derived from a forensic sample.

b. Forensic Genetic Genealogical DNA Analysis and Searching

Forensic genealogy is law enforcement's use of DNA analysis combined with traditional genealogy research to generate investigative leads for unsolved violent crimes. Forensic genetic genealogical DNA analysis ('FGG') differs from STR DNA typing in both the type of technology employed and the nature of the databases utilized.

FGG examines more than half a million single nucleotide polymorphisms[9] ('SNPs'), which replace the STR DNA markers analyzed in traditional forensic DNA typing. These SNPs span the entirety of the human genome. This allows scientists to identify shared blocks of DNA between a forensic sample and the sample donor's potential relatives. Recombination or reshuffling of the genome is expected as DNA from each generation is passed down, resulting in larger shared blocks of identical DNA between closer relatives and shorter blocks between more distant relatives. Due to predicted levels of recombination between generations, it is possible to analyze these blocks of genetic information and make inferences regarding potential familial relationships.

Department laboratories currently do not analyze SNPs during forensic DNA casework. Thus, in appropriate cases, it is necessary to outsource biological material to vendor laboratories that perform FGG.[10] After a forensic or reference sample is genotyped by a vendor laboratory, the resulting FGG profile[11] is entered into one or more publicly-available open-data personal genomics DNA databases or direct-to-consumer genetic genealogy services ('DTC service(s)')[12] (collectively referred to herein as 'GG service(s)'). The FGG profile is then compared by automation against the genetic profiles of individuals who have voluntarily submitted their biological samples or entered their genetic profiles into these GG services ('service users'). A computer algorithm is used to evaluate potential familial relationships between the (forensic or reference) sample donor and service users.

It is important to note that personal genetic information is not transferred, retrieved, downloaded, or retained by GG service users — including law enforcement — during the automated search and comparison process. In addition, the investigative use of FGGS involves different DNA technologies, genetic markers, algorithms, and databases from those used by

---

[9] 'Single nucleotide polymorphisms' are DNA sequence variations that occur when a single nucleotide (A, T, G, or C) in a genomic sequence is altered. These variations may be used to distinguish people for purposes of biological relationship testing.

[10] Contracts with vendor laboratories for FGG services should be reviewed by legal counsel to ensure that they contain appropriate language requiring maintenance of privacy and security controls for handling biological samples, FGG profiles, and other information and data both submitted to, and generated by, those vendor laboratories.

[11] The term 'FGG profile' means the SNP-based genetic profile generated from a forensic or reference sample by a vendor laboratory for the purpose of conducting FGGS.

[12] Direct-to-consumer genetic genealogy services are companies that offer a variety of DNA genomics tests and/or genetic genealogy services directly to the public (rather than through clinical health care providers), typically via customer access to secure online websites.

CODIS. Information and data derived from FGGS is not, and cannot be, uploaded, searched, or retained in any CODIS DNA Index.

IV. Limitations

If the search of an FGG profile results in one or more genetic associations,[13] the GG service typically generates and provides the service user with a list of genetically associated service usernames along with an estimated relationship and (in some cases) the amount of DNA shared by those individuals. A genetic association means that the donor of the (forensic or reference) sample may be related to a service user. However, information derived from genetic associations is used by law enforcement only as an investigative lead. Traditional genealogy research and other investigative work is needed to determine the true nature of any genetic association.

A suspect shall not be arrested based solely on a genetic association generated by a GG service. If a suspect is identified after a genetic association has occurred, STR DNA typing must be performed, and the suspect's STR DNA profile must be directly compared to the forensic profile previously uploaded to CODIS.[14] This comparison is necessary to confirm that the forensic sample could have originated from the suspect.

V. Case Criteria

Investigative agencies may initiate the process of considering the use of FGGS when a case involves an unsolved violent crime[15] and the candidate forensic sample[16] is from a putative perpetrator,[17] or when a case involves what is reasonably believed by investigators to be the unidentified remains of a suspected homicide victim ('unidentified human remains'). In addition, the prosecutor, as defined in footnote twenty of this interim policy, may authorize the investigative use of FGGS for violent crimes or attempts to commit violent crimes other than homicide or sexual offenses (while observing and complying with all requirements of this

[13] A 'genetic association' is determined by the amount of DNA shared between two individuals whose genetic profiles (including, in some cases, an FGG profile) have been entered into a GG service. This amount is measured and reported in centiMorgans. In general, the more DNA shared between two individuals, the higher the number of centiMorgans and the closer the genetic kinship relationship.

[14] Manual comparison is sufficient.

[15] As used in this interim policy, the term 'violent crime' means any homicide or sex crime, including a homicide investigation during which FGGS is used in an attempt to identify the remains of a suspected homicide victim. It also includes other serious crimes and criminal offenses designated by a GG service for which investigative use of its service by law enforcement has been authorized by that service.

[16] A 'candidate forensic sample' is: 1) the remaining portion of a forensic sample or extract being considered for FGGS, and from which a forensic profile was previously derived and uploaded to CODIS; or 2) one or more additional forensic samples or extracts from the same case that share the same forensic profile(s) as that derived from the forensic sample(s) uploaded to CODIS.

[17] A 'putative perpetrator' is one or more criminal actors reasonably believed by investigators to be the source of, or a contributor to, a forensic sample deposited during, or incident to, the commission of a crime.

interim policy) when the circumstances surrounding the criminal act(s) present a substantial and ongoing threat to public safety or national security. Before an investigative agency may attempt to use FGGS, the forensic profile derived from the candidate forensic sample must have been uploaded to CODIS, and subsequent CODIS searches must have failed to produce a probative and confirmed DNA match.

The investigative agency with jurisdiction of either the crime or the location where the unidentified human remains were discovered (if different) must have pursued reasonable investigative leads[18] to solve the case or to identify the unidentified human remains. Finally, when applicable, relevant case information must have been entered into the National Missing and Unidentified Persons System ('NamUs') and the Violent Criminal Apprehension Program ('ViCAP') national database.[19]

VI. Investigative Collaboration

If each of the criteria set forth in Section V has been satisfied, the investigative agency shall contact a designated official at the CODIS laboratory ('designated laboratory official' or 'DLO') that uploaded the forensic profile to CODIS. The DLO must determine if the candidate forensic sample is from a single source contributor or is a deduced mixture. The DLO will also assess the candidate forensic sample's suitability (e.g., quantity, quality, degradation, mixture status, etc.) for FGG and advise the investigative agency about the results of that evaluation. In addition, the DLO may advise the investigative agency of any reasonable scientific alternatives to FGGS, given the nature and condition of the candidate forensic sample, and the availability of other DNA technologies or techniques. The investigative agency shall document its consultation with the DLO.

After consulting with the DLO, the investigative agency shall contact the prosecutor.[20] The investigative agency shall advise the prosecutor of the nature and status of the investigation, the results of the DLO's evaluation of the candidate forensic sample, and any reasonable scientific alternatives to FGGS provided by the DLO.[21] After discussing these issues, and based on the information provided, the prosecutor and the investigative agency must agree that the

---

[18] 'Reasonable investigative leads' are credible, case-specific facts, information, or circumstances that would lead a reasonably cautious investigator to believe that their pursuit would have a fair probability of identifying a suspect.

[19] This latter requirement only applies if the case meets relevant ViCAP case entry criteria.

[20] As used in this interim policy, the term 'prosecutor' refers, as applicable, to the Assistant Attorney General, United States Attorney, state or local prosecuting attorney, or state attorney general (or his or her designee), with jurisdiction of either the crime under investigation or the location where the unidentified human remains were discovered (if different). When the Department of Justice and one or more state or local prosecuting authorities have concurrent jurisdiction of the crime(s) under investigation, the 'prosecutor' means the Assistant Attorney General, United States Attorney, or the state or local prosecuting official whose office will prosecute the case in the event that charges are filed.

[21] If circumstances permit, it is best practice to have the DLO join (telephonically or otherwise) this meeting. The DLO's participation can help ensure provision of the most complete and detailed information possible regarding sample status, testing options, and possible alternatives to FGGS. This information can, in turn, help optimize subsequent investigative decisions.

candidate forensic sample is suitable for FGG, and that FGGS is a necessary and appropriate step at that stage of the investigation to develop investigative leads or to identify the unidentified human remains. If agreement is reached on these points, FGGS may proceed.

VII. Investigative Caution

Investigative agencies shall identify themselves as law enforcement to GG services and enter and search FGG profiles only in those GG services that provide explicit notice to their service users and the public that law enforcement may use their service sites[22] to investigate crimes or to identify unidentified human remains. The investigative agency shall, if possible, configure service site user settings that control access to FGG profile data and associated account information in a manner that will prevent it from being viewed by other service users.

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 parties[23] 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 prosecutor[24] 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.

Investigative agencies shall use biological samples and FGG profiles only for law enforcement identification purposes and shall take all reasonable and necessary steps and precautions to ensure that same limited use by others who have authorized access to those samples and profiles. Biological samples and FGG profiles shall not be used by investigative

---

[22] The term 'service site' means the online web page and content of a GG service.

[23] As used in this interim policy, the term 'third party' means a person who is not a suspect in the investigation.

[24] Before authorization is granted, the prosecutor should notify and consult with the prosecutor in the jurisdiction where the sample will be covertly collected (if different) to ensure that all applicable legal authorities and local procedures relevant to sample acquisition are followed. When the Department of Justice and one or more state or local prosecuting authorities have concurrent jurisdiction of the crime(s) under investigation, the 'prosecutor' means the Assistant Attorney General, United States Attorney, or the state or local prosecuting official whose office will prosecute the case in the event that charges are filed.

agencies, vendor laboratories, GG services, or others to determine the sample donor's genetic predisposition for disease or any other medical condition or psychological trait.

FGGS is a law enforcement technique used to generate investigative leads. Investigative agencies shall not arrest a suspect based solely on a genetic association generated by a GG service. Traditional genealogy research and other investigative work is required to determine the true nature of any genetic association.

VIII. Sample and Data Control and Disposition

All FGG profiles and GG service account information and data shall be treated as confidential government information consistent with any applicable laws, regulations, policies, and procedures. These materials are subject to transfer and disclosure by Department employees and contractors only during the discharge of their official duties and only for authorized purposes.

If a suspect is arrested and charged with a criminal offense while FGG is in progress, the investigative agency shall promptly contact the relevant vendor laboratory or DTC service and direct that all testing cease at a point in time when the (forensic or reference) sample can be preserved. The investigative agency shall also request that the sample, extract,[25] and amplicon[26] be returned directly to the submitting law enforcement agency or custodial CODIS laboratory, as applicable. The investigative agency shall document its request and compliance by the vendor laboratory or DTC service.

If a suspect is arrested and charged with a criminal offense after an FGG profile has been entered into one or more DTC services, the investigative agency shall make a prompt formal request that all FGG profiles and associated account information and data held by any such service be removed from its records and provided directly to the investigative agency.[27] The investigative agency shall document its request and compliance by the DTC service(s). All FGG profiles, account information, and data shall be retained by the investigative agency for potential use during prosecution and subsequent judicial proceedings.

If a suspect is arrested and charged with a criminal offense after an FGG profile has been entered into an open-data personal genomics DNA database, the investigative agency shall promptly remove the FGG profile and all associated account information and data from the database.[28] The investigative agency shall document the removal of this information and data. It

[25] 'Extract' is the total amount of cellular DNA isolated from a biological sample.
[26] 'Amplicon' is the total amount of the targeted DNA segment or sequence generated by the PCR amplification process.
[27] These requests should be made only after the suspect's known STR DNA profile has been manually compared to the forensic profile previously uploaded to CODIS and it has been determined that the profiles match.
[28] The profile, information, and data should be removed only after the suspect's STR DNA profile has been manually compared to the forensic profile previously uploaded to CODIS and it has been determined that the profiles match.

shall be retained by the investigative agency for potential use during prosecution and subsequent judicial proceedings.

Subject to applicable law, in all cases that result in a criminal prosecution, reference samples obtained from third parties for FGGS (including all extracts and amplicon), all derivative FGG profiles, and all GG service account information and data shall be destroyed by the investigative agency only after the entry of an appropriate judicial order. The investigative agency shall document the authorized destruction of these samples, profiles, information, and data.

Subject to applicable government information retention schedules, if FGGS does not result in an arrest and the filing of criminal charges, the investigative agency shall promptly destroy all third-party reference samples (including all extracts and amplicon), all derivative FGG profiles, and all GG service account information and data after their investigative use is complete. The investigative agency shall document the destruction of these samples, profiles, information, and data.

IX. Collection of FGGS Metrics

Each Department component that either uses or funds another agency to use FGG/FGGS for criminal investigative purposes, or that provides any unit of federal, state, local, or tribal government with grant award funding that is used by a grantee to conduct FGG/FGGS for criminal investigative purposes, shall collect and retain the following information on an annual basis: 1) the type of crime investigated; 2) whether FGG/FGGS was conducted on a forensic sample or a reference sample; 3) the type of forensic sample subjected to FGG, and a description of the total amount, condition, and concentration of that sample (e.g., single source, mixed profile, degradation status, etc.); 4) whether FGG analysis resulted in a searchable profile; 5) the identity of the vendor laboratory used to conduct FGG and the GG service(s) used to search the FGG profile; 6) whether the investigation resulted in an arrest that was based, in part, on the use of FGGS; and 7) the total amount of federal funding used to conduct FGG/FGGS in each case.

Forensic Science International: Synergy 6 (2023) 100316

Contents lists available at ScienceDirect

Forensic Science International: Synergy

journal homepage: www.sciencedirect.com/journal/forensic-science-international-synergy

National Technology Validation and Implementation Collaborative (NTVIC) policies and procedures for Forensic Investigative Genetic Genealogy (FIGG)

ABSTRACT

In 2022, the National Technology Validation and Implementation Collaborative (NTVIC) was established. Its mission is to collaborate across the US on validation, method development, and implementation. The NTVIC is comprised of 13 federal, state and local government crime laboratory leaders, joined by university researchers, and private technology and research companies. One of the NTVIC's first initiatives was to generate this draft policy document. This document provides guidelines and considerations for crime laboratories and investigative agencies exploring the establishment of a forensic investigative genetic genealogy (FIGG) program. While each jurisdiction is responsible for its own program policy, sharing minimum standards and best practices to optimize resources, promote technology implementation and elevate quality is a goal of the NTVIC.

Policy and Procedure Committee Members are:

Chair: Dr. Ray Wickenheiser – New York State Police Crime Laboratory System.

Jennifer Naugle – Wisconsin Department of Justice Division of Forensic Sciences.

Brian Hoey – Missouri Highway Patrol Crime Laboratory Division.

Rylene Nowlin – Idaho State Police Forensic Services.

Swathi A. Kumar – Verogen.

Alana Minton – Office of the Attorney General, State of Idaho.

Claire Glynne – University of New Haven, Henry C Lee Institute of Forensic Science.

Founding members of the NTVIC are:

- Idaho State Police Forensic Services (Matthew Gamette—Chair)
- California Department of Justice Bureau of Forensic Services (Barry Miller)
- Colorado Bureau of Investigation Forensic Services (Lance Allen)
- Department of Defense DNA Operations for the Armed Force Medical Examiner Service (Dr. Timothy McMahon)
- Kentucky State Police Forensic Science Laboratory (Laura Sudkamp)
- Miami-Dade Police Department, Forensic Services Division (Stephanie Stoiloff)
- Minnesota Bureau of Criminal Apprehension Forensic Science Services (Catherine Knutson)
- Missouri Highway Patrol Crime Laboratory Division (Brian Hoey)
- New York City Office of Chief Medical Examiner's Office (Timothy Kupferschmid)
- New York State Police Crime Laboratory System (Dr. Ray Wickenheiser)
- Ohio Bureau of Criminal Investigation (Roger Davis)
- Texas Department of Public Safety (Brady Mills)
- Wisconsin Department of Justice Division of Forensic Sciences (Jennifer Naugle)

Requirements on Policy and Procedure:

Forensic Investigative Genetic Genealogy (FIGG) is a technique that combines genetic testing with traditional genealogical research to generate investigative leads in unsolved violent crimes and cases of unidentified human remains. FIGG incorporates a deliberate search for potential biologically related individuals of a contributor to an evidentiary single nucleotide polymorphism (SNP) deoxyribonucleic acid (DNA) profile. The scientific technique and subsequent search are conducted by trained professionals and may provide significant investigative information in unsolved cases in which all other investigative leads have been exhausted [1–3].

This document outlines the policies and procedures for developing forensic genetic genealogy (FGG) SNP profiles and subsequent investigative genetic genealogy (IGG) searching that should contain the information detailed in this document. These two components, FGG and IGG, comprise the FIGG technique of developing investigative leads from SNP profiles using genealogical researching. To aid the public and law enforcement in understanding the laboratory's program, policies, and methodologies, the FIGG policy and procedures will be publicly available. This document is provided for reference and guidance only, and each jurisdiction will retain sole responsibility for its policy, procedures, and performance. The term FIGG Responsible Authority (FIGG RA) is used herein to refer to the body responsible for the conducting and oversight of FIGG in a particular jurisdiction.

1. Laboratories and accreditation

FGG is currently not within the scope of an accredited forensic public laboratory [4]. Forensic laboratories participating in the Combined DNA Index System (CODIS) are accredited as well as audited to the FBI Quality Assurance requirements for forensic DNA laboratories as a requirement of participation. FGG should only be conducted in a laboratory that is accredited and operates under a quality assurance system.

https://doi.org/10.1016/j.fsisyn.2023.100316
Received 23 January 2023; Accepted 23 January 2023
Available online 9 February 2023

2. Case category

Case categories have been recommended in various letters of support and background documents, including surveys of public opinion [4–10]. Policy on Familial Searching has been recommended as a template to guide Forensic Investigative Genetic Genealogy (FIGG) policy [11].

Maryland House Bill 240 Criminal Procedure – Forensic Genetic Genealogical DNA Analysis, Searching, Regulation, and Oversight is the most specific and extensive oversight legislation governing FIGG. On the topic of case category, the law includes the following case description: "The commission of or attempt to commit murder, rape, a felony sexual offense, or a criminal act involving circumstances presenting a substantial and ongoing threat to public safety or national security." [5] Unidentified Human Remains (UHR) cases should also be considered, particularly when the UHR is a potential homicide victim [4,5].

The DOJ Interim Policy on Forensic Genetic Genealogical DNA Analysis and Searching states "[i]investigative agencies may initiate the process of considering the use of [FIGG] when a case involves an unsolved violent crime and the candidate forensic sample is from a putative perpetrator, or when a case involves what is reasonably believed by investigators to be the unidentified remains of a suspected homicide victim ('unidentified human remains'). In addition, the prosecutor, as defined in footnote twenty of this interim policy, may authorize the investigative use of [FIGG] for violent crimes or attempts to commit violent crimes other than homicide or sexual offenses (while observing and complying with all requirements of this interim policy) when the circumstances surrounding the criminal act(s) present a substantial and ongoing threat to public safety or national security." [4]

"Unless the crime being investigated presents an ongoing threat to public safety or national security concerns, reasonable investigative efforts must have been pursued and failed to identify the perpetrator" [5]. The following may be considered when evaluating case acceptance:

a) seriousness or seriality of the crime [4];
b) commitment by the jurisdiction to proceed with investigation and prosecution;
c) case metadata and laboratory notes provided as available;
d) investigative stage to initiate a FIGG, such as, when viable reasonable investigative strategies have been exhausted [4,5];
e) quality and quantity of available DNA; and
f) the availability of additional DNA evidence.

3. Roles and responsibilities

Roles and responsibilities for the FIGG collaboration should be delineated to ensure clear lines of accountability and communication. Suggested roles include individuals in the following areas:

a) an individual or committee who has the ultimate control for the case acceptance, evaluation, prioritization, and search;
b) an individual or committee that directs the release of investigative lead(s) and any follow-up, including conducting an administrative and technical review of the FIGG analysis prior to release of an investigative lead;
c) an administrative representative from the source testing laboratory (DNA expertise) [4];
d) an administrative representative with genealogical research expertise with appropriate documented training;
e) a representative with access to investigative databases (metadata) and crime analysis;
f) a representative from the requesting law enforcement agency who can commit to surveillance and collection of covert samples;
g) a representative from the prosecuting agency that can provide legal expertise; and
h) a program/project lead.

It is recommended that FIGG be conducted by established teams and that roles and responsibilities are documented through job descriptions and requirements. It is recommended that through job description or a RACI matrix (responsible, accountable, consulted and informed document) the interactions between the individuals are defined to safeguard privacy. The policy may include the use of a documented memorandum of understanding (MOU) or equivalent.

4. MOUs/contracts with law enforcement and prosecutorial agencies (see example in Appendices 1 and 2)

Prior to conducting FIGG, a MOU will be established between the Forensic Science Service Provider (FSSP), law enforcement, and prosecutorial agencies. The MOU will include an understanding that investigative leads provided will be followed up, charges laid, and actively prosecuted, if warranted.

5. Sample/specimen requirements

A forensic sample means biological material collected from a crime scene, person, item, or location connected to the criminal event and reasonably believed by investigators to have been deposited by a putative perpetrator [4,5].

A forensic sample also includes the biological material from unidentified human remains (UHR) [4,5].

Sample types include blood, semen, saliva, tissue, bone, hair, touch DNA and any other component of the human body which bears DNA.

Mixed samples can be successfully processed; however, additional testing requirements will be required. Quantity and quality of sample for successful profile generation varies. Good quality single source samples require less sample than degraded samples. Validated methods which have demonstrated successful analysis of samples similar to the forensic sample should be used in FGG.

A procedure should be in place for sample consumption considerations. A separate approval should be included when the entire sample will be consumed in analysis.

6. Third-party samples

"A third-party means a person who is not a suspect in an investigation [4,5]". A third-party may be an individual who was identified during the genealogical research process as being potentially biologically related to a putative perpetrator. Collection of a reference DNA sample from the third-party may provide additional leads to reach a candidate identification [4]. Third parties should be contacted by law enforcement rather than genealogists or forensic laboratory personnel, who can use a blank pedigree chart to engage family members for additional information.

If overt collection of a reference DNA sample is pursued, written-informed consent should be collected from the third-party [4]. If the third-party has previously taken a Direct-To-Consumer (DTC) DNA test (e.g., AncestryDNA, etc.), the third-party may be requested to voluntarily provide their DNA data file for upload to the genetic genealogy database(s). Alternatively, a buccal sample can be collected from the third-party for SNP sequencing to generate a SNP profile for upload and comparison.

Third-party consent is required for upload into a genetic genealogy database [4,5]. If the third-party does not consent to providing a reference sample for an FIGG investigation, law enforcement may not upload a covert reference sample from the individual into a genetic genealogy database without prior court approval [4,5].

Use of all samples collected for forensic casework, including violent crime samples, UHRs, reference samples, target testing samples should be aligned with the terms of service (TOS) of the FGG database vendor. The authorizing court shall be notified prior to the covert collection of the third-party's reference sample [4,5]. If "investigative authorities provide an affidavit to the court demonstrating that seeking informed

consent from a third-party creates substantial risk that a putative perpetrator will flee, that essential evidence will be destroyed, or that other imminent or irreversible harm to the investigation will occur" [5], the court may authorize covert collection of third-party samples.

Investigative authorities shall provide an affidavit in support of a warrant "to the court explaining how they plan to conduct the covert collection in a manner that avoids unduly intrusive surveillance of individuals or invasions to their privacy and follows the law" [5].

Mere anticipation "that a third-party will refuse informed consent may not constitute a basis for seeking covert collection of a DNA sample from a third-party" [5].

7. Genetic genealogy database terms of service

The genetic genealogy database terms of service must be adhered to. Genealogy databases are provided by independent vendors, and the uploaded genetic profiles are used with informed consent by members of the public. Hence, their trust must be maintained, or access to samples will be limited and jeopardize the ongoing development and success of FIGG.

8. Putative perpetrator samples

"Any putative perpetrator DNA sample that is collected covertly may only be subjected to a short tandem repeat (STR) analysis to see if it matches an STR DNA profile obtained from the forensic sample" [5].

9. Data protection

No data generated from the biological samples subjected to FGG analysis, whether the forensic sample or third-party reference samples, may be used for other purposes such as "to determine the sample donor's genetic predisposition for disease, any other medical conditions, psychological trait" [4,5], or research purposes.

Forensic samples may, however, be analyzed to provide potential eye color, hair color, skin color and physical traits such as age estimation for the purpose of investigative intelligence. Third-party samples should not be analyzed for physical appearance.

"IGG may only be conducted using a direct-to-consumer or publicly available open-data personal genomics database(s) that:

1. Provides explicit notice to its service sites to investigate crimes or identify human remains, and
2. Seeks acknowledgement and consent from its service users regarding the substance of the notice described" [5] above.

No person may disclose genetic genealogy data, FGG profiles, or DNA samples except where required by law or order of a court of competent jurisdiction [4,5].

10. Data retention and deletion

All FGG data retention and deletion must adhere to the corresponding state and/or federal law.

"Any covertly collected DNA suspect sample, including raw sequencing or genotyping data, SNPs and other genetic profiles, and related information, that does not match the STR DNA profile obtained from a forensic sample shall" [5] "not be uploaded to any DNA database, including local, state, or federal DNA databases within CODIS, or any DNA database not authorized by local, state, or federal" [5] law [4]. A quality assurance index search for contamination purposes may be conducted.

A person, agency or laboratory may not willfully retain or fail to destroy genetic genealogy information, FGG profiles, DNA samples or DNA data generated during the course of the FIGG process that are required to be destroyed [5].

11. Release of case/public information

"Upon successful completion of the [FIGG] investigation, the [genealogist] participating in the [FIGG] shall turn over to the investigator all records and material collected in the course of the [IGG], including material sourced from public records, family trees constructed, and any other genetic or nongenetic data collected in the [IGG]" [5].[4]

The genealogist or private laboratory "may not keep any records or materials in any form, including digital or hard copy records" [5] unless statutorily required, as required by the agency's retention policy, or as required by a criminal justice agency [4,5].

The genealogist or investigative agency shall ensure that all records have been deleted or removed from any website/platform where the IGG investigation was developed e.g., family trees built in platforms such as ancestry.com or lucidchart [4,5]. Transfer of ownership/log-in credentials for such sites must be performed.

The prosecuting agency "shall retain and disclose any records or material as required under the [applicable state and federal regulation, the rules of discovery, or other court orders,] but may not otherwise use or share the records or materials" [5].[4]

Neither the laboratory conducting SNP or other DNA analysis, nor a law enforcement official or a genealogist may disclose genetic genealogy information or details associated with an ongoing investigation without authorization from the prosecuting jurisdiction [4,5].

Personally identifiable third-party information should not be included in warrants and other legal documents which could reveal the identity of related individuals prior to trial.

12. Outsource contracts with vendor laboratories

The laboratory generating SNP profiles with genotyping or sequencing-based workflows, and the genealogist participating in FIGG shall be approved by the FIGG Responsible Authority (FIGG RA) [5].

Qualifications of vendor laboratories will be determined by the FIGG RA [5].

Vendor laboratories shall provide documentation regarding their Quality Assurance Systems, upon request from the FIGG RA. Vendor laboratories shall also compare genetic profiles against a staff elimination database for contamination checks prior to the release of the sequencing data to the agency.

The vendor laboratory shall electronically transfer the generated SNP data file/profile to the investigating agency/Designated Laboratory Official (DLO) (see section 22) only and not to any contracted genealogist.

13. Genealogist qualifications

Qualifications of genealogists will be determined by the FIGG RA [5]. Only qualified genealogists will be used for FIGG [5]. A list of qualified genealogists will be retained by the FIGG RA [5].

14. Education/training provided upon data/results release

IGG education must be provided with the release of FIGG investigative leads. Education should be provided when the case is initiated to assist with the investigation and also after the case is completed as lessons are learned.

15. Quality Assurance/Performance improvement

All laboratories conducting DNA analysis for FIGG must be accredited. Acceptable standards include ISO-17025 and those determined by the FIGG RA.

16. Proficiency testing

All laboratories and personnel providing DNA analysis utilized by FIGG must be subject to proficiency testing at least once annually. Proficiency test samples must mimic the sample type and concentration found in FIGG cases. Simulated pedigree samples should also be included to evaluate the ability to upload and determine accuracy and precision of matches.

17. Handling and privacy protection of third-party reference samples

Once the FIGG has been concluded, all third-party reference samples and all associated data will be destroyed [4,5]. Identifying information of all third parties must be kept strictly confidential [4,5].

18. Warrant guidelines

Identifying information from the FIGG investigation should not be included in warrants involving third parties, unless specified by the court.

19. Courtroom best practices for prosecutors

Prosecutors using FIGG should be trained in best investigative practices, which should include all of the elements of this policy, including but not limited to sample and case requirements, MOUs, privacy, maintenance of quality, theory, and documentation.

20. Training

Defined and documented training should be provided to each FIGG team member commiserate with their roles and responsibilities.

21. Metrics

Data should be kept on the number and type of FIGG cases (SNP, WGS, or other) conducted, sample (biological material, amount and quality) and offense case types so continuous improvement can be pursued [4,5]. Data can include the following:

- Number of FIGG cases investigated [5]
- Number of FIGG cases accepted by genetic genealogy databases
- Number of perpetrators and unidentified human/remains identified [4,5]
- Number of covert collections of reference samples from putative perpetrators [4,5]
- Description of the sample type collected in covert surveillance [4]
- Time required to conduct the covert surveillance [5]
- Complaints from individuals subject to surveillance during the covert collection [5]
- "Any complaints or suggestions from judges" [5]
- Evaluation of the pursued investigative leads arising from FIGG [4,5]
- Costs of FIGG procedures [4,5]
- "Race and age of those identified as the putative perpetrators" [5]
- "Number of times a third-party reference sample was requested and collected, and the race and age of the third parties" [5]
- "Number of FIGG requests made by defendants and post-conviction attorneys" [5] to the authority responsible for oversight of FIGG.
- The case outcomes of each FIGG [4,5]

22. Designated laboratory official (DLO)

Forensic laboratories and law enforcement agencies that are implementing FIGG should have a designated laboratory official (DLO) [4]. The DLO will have training in the areas of forensic DNA, investigation and FIGG and will be a single point of contact acting as a liaison between law enforcement, forensic laboratories, private laboratories, genealogical researchers, justice system officials and other FIGG stakeholders. The DLO will provide information and education to key stakeholders, ensure compliance to laboratory policy and quality standards, maintain documentation of case records and recommendations, and perform other duties much as a CODIS administrator position currently requires.

23. Oversight

Oversight of a FIGG program may be provided by a diverse panel. "A panel comprised of judges, prosecutors, defense attorneys, public defenders, law enforcement officials, crime laboratory directors, bioethicists, racial injustice experts, criminal justice researchers, civil and privacy rights organizations, and organizations representing the families impacted by the criminal justice system" [5], including victims' rights advocates, "may be convened to review the annual report each year and make policy recommendations" [5].

24. Definitions

Criminal proceeding: means the adversary judicial process prosecuted by a public officer and initiated by a formal complaint, information, or indictment charging a person with an offense denominated criminal by applicable law and punishable by death, imprisonment, or a jail sentence [12].

Forensic Investigative Genetic Genealogy (FIGG): is a technique that combines genetic testing with traditional genealogical research to generate investigative leads in unsolved violent crimes and cases of unidentified human remains.

Forensic Genetic Genealogy (FGG): the laboratory DNA analysis to develop the DNA (SNP) profile for upload into a genealogical database.

Investigative Genetic Genealogy (IGG): the investigative portion of FIGG, to include DNA profile upload into a genealogical database, family tree creation, and investigation of leads.

FIGG Responsible Authority (FIGG RA): the body responsible for the conducting and oversight of FIGG in a particular jurisdiction.

Forensic sample: "biological material reasonably believed by investigators to have been deposited by a putative perpetrator collected from a crime scene, or person, an item, or a location connected to the criminal event. A forensic sample also includes the biological material from unidentified human remains (UHR)" [5].

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. Swathi A. Kumar is an employee of Verogen and provided input on the use of the GEDmatch database.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.fsisyn.2023.100316.

References

[1] E. Greytak, C.C. Moore, S.L. Armentrout, Genetic genealogy for cold case and active investigations, Forensic Sci. Int. (2019), https://doi.org/10.1016/j.forsciint.2019.03.039. March 27.

[2] Ray A. Wickenheiser, Forensic genealogy, bioethics and the golden state killer case, Forensic Sci. Int. Synergy 1 (2019) 114–125, https://doi.org/10.1016/j.fsisyn.2019.07.003.

[3] Christi J. Guerrini, Ray A. Wickenheiser, , Blaine Bettinger, Amy L. McGuire, Stephanie M. Fullerton, Four misconceptions about investigative genetic genealogy, Journal of Law and Biosciences 13 (April 2021) 1–18, https://doi.org/10.1093/jlb/lsab001. https://academic.oup.com/jlb/article/8/1/lsab001/6188446?searchresult=1.

[4] United States Department of Justice, Interim Policy Forensic Genetic Genealogical DNA Analysis and Searching, September 24, 2019. https://www.justice.gov/olp/page/file/1204386/download.
[5] Maryland House Bill 240 Chapter 681, criminal procedure – forensic genetic genealogical DNA analysis, searching, regulation, and oversight, 2021 laws of Maryland, https://mgaleg.maryland.gov/2021RS/chapters_noln/Ch_681_hb0240E.pdf.
[6] Consortium of Forensic Science Organizations, Forensic genetic genealogy statement of support, October 9, 2019. https://thecfso.org.
[7] Thomas F. Callaghan, Responsible genetic genealogy, Sci. 366 (6462) (October 11, 2019) 155. https://science.sciencemag.org/content/366/6462/155.
[8] American Society of Crime Laboratory Directors, Member esource committee, Investigative genetic genealogy position statement, https://www.ascld.org/wp-content/uploads/2019/10/ASCLD-IGG-10.18.19.pdf.
[9] Scientific Working Group on DNA Analysis Methods, Overview of Investigative Genetic Genealogy, February 18 p. 2020. https://www.swgdam.org/_files/ugd/4344b0_6cc9e7c82ccc4fc0b5d10217af64e31b.pdf.
[10] New York Department of Criminal Justice Services, Familial search process overview, in: https://www.criminaljustice.ny.gov/forensic/forms/Familial-Search-Process-Overview-05-21-2018.pdf.
[11] Guerrini, C.J, Robinson, J.O., Peterson, D. and A.L. McGuire. 2018. Should police have access to genetic databases? Capturing the Golden State Killer and other criminals using a controversial new forensic technique. PLoS Biol. October 2. 16 (10). https://journals.plos.org/plosbiology/article/file?id=10.1371/journal.pbio.2006906&type=printable.
[12] Cornell Law, Definition: criminal proceeding, 45 CFR § 1613.2, April 15, 2014. https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=c53dae141c5d0d60afdedbf0605fb678&term_occur=999&term_src=Title:45:Subtitle:B:Chapter:XVI:Part:1613:1613.5.

Ray A. Wickenheiser*
New York State Police Crime Laboratory System, Albany, NY, USA

Jennifer Naugle
Wisconsin Department of Justice Division of Forensic Sciences, USA

Brian Hoey
Missouri Highway Patrol Crime Laboratory Division, USA

Rylene Nowlin
Idaho State Police Forensic Services, USA

Swathi A. Kumar
Verogen, USA

Alana Minton
Office of the Attorney General, State of Idaho, USA

Lance Allen
Colorado Bureau of Investigation Forensic Services, USA

Claire Glynn
University of New Haven, Henry C Lee Institute of Forensic Science, USA

* Corresponding author. New York State Police Crime Laboratory System, 1200 Washington Avenue, Building 30, Albany, NY, 12226-3000, USA.
E-mail address: ray.wickenheiser@troopers.ny.gov (R.A. Wickenheiser).

View in browser | truescope.com

New York Times - Mike Baker Article

Friday, June 16, 2023

In this report

Mike Baker Article 24 items

Boston Globe (Boston, Massachusetts, US), Mike Baker, 14 Jun at 8:53AM, • Mixed, 1.47M readership

Inside the hunt for the University of Idaho killer

A new DNA technique finally brought a breakthrough.

Seattle Times (Seattle, Washington, US), Mike Baker, 12 Jun at 12:24PM, • Mixed, 1.66M readership

Inside the hunt for an Idaho killer

MOSCOW, Idaho — In the weeks after four University of Idaho students were found slaughtered in a house near campus last November, a growing roster…

REPUBLICAN HERALD (Pottsville, Pennsylvania, US), Mike Baker, 12 Jun, • Mixed, 13.23K circulation

Inside the hunt for University of Idaho killer

Case highlights digital footprint left by Americans every day
THE NEW YORK TIMES MOSCOW, Idaho — In the

DEFENDANT'S EXHIBIT NO. D IDENTIFICATION / EVIDENCE CASE NO CR29-22-2805 DATE: 6/22/23

weeks after four University of Idaho students were found slaughtered in a house near campus last November, a...

The Buffalo News (New York) (Buffalo, New York, US), Mike Baker New York Times, 11 Jun, • Mixed

Inside the hunt for the Idaho killer

MOSCOW, Idaho - In the weeks after four University of Idaho students were found slaughtered in a house near campus last November, a growing roster of...

West Hawaii Today (Kailua-Kona, Hawaii, US), 11 Jun, • Negative

Nation & world news - at a glance - For Sunday, June 11, 2023

Then, investigators announced an arrest in late December on the other side of the country: Bryan Kohberger.

The Boston Globe (US), Mike Baker New York Times, 11 Jun, • Negative

A look inside the six-week hunt for possible Idaho killer; Advanced DNA analysis helped identify suspect

BODY
Bryan Kohberger was indicted in the stabbing deaths of four University of Idaho students.

Yahoo! News US (US), Mike Baker Sun, 11 Jun at 11:13AM, • Mixed, 23.70M readership

Inside the Hunt for the Idaho Killer

Police investigators on Nov. 15, 2022, at the rented house where four students were found dead near the University of Idaho campus in Moscow, Idaho.

News Yahoo (US), Mike Baker Sun, 11 Jun at 10:49AM, • Mixed, 155.76K readership

Inside the Hunt for the Idaho Killer

MOSCOW, Idaho — In the weeks after four University of Idaho students were found slaughtered in a house near campus last November, a growing…

SUNDAY

SUNDAY TIMES (Scranton, Pennsylvania, US), Mike Baker The New York Times, 11 Jun, • Mixed, 56.61K circulation

A look inside the hunt for Kohberger, suspect in the 4 Idaho killings

MOSCOW, Idaho — In the weeks after four University of Idaho students were found slaughtered in a house near campus last November, a growing roster of investigators desperately searching for answers had yet to identify a...

STAN

STANDARD-SPEAKER (Hazleton, Pennsylvania, US), Mike Baker, 11 Jun, • Neutral, 8.80K circulation

INSIDE THE HUNT FOR THE IDAHO KILLER

Then, after spending weeks sifting through an array of evidence that seemed to lead nowhere, investigators announced an arrest in late December on the other side of the country: Bryan Kohberger, a doctorate student from a nearby university.

PIONEER

PIONEER PRESS (Saint Paul, Minnesota, US), Mike Baker The New York Times, 11 Jun, • Mixed, 91.62K circulation

Inside the hunt for killer of 4 Idaho students

CRIME INVESTIGATION
Investigators utilized an advanced method of DNA analysis to help produce a lead
MOSCOW.

The Buffalo News (Buffalo, New York, US), MIKE BAKER New York Times, 11 Jun, • Mixed, 61.66K circulation

Inside the hunt for the Idaho killer

MOSCOW, Idaho - In the weeks after four University of Idaho students were found slaughtered in a house near campus last November, a growing roster of investigators desperately searching for answers had yet to identify a...

CITIZENS' VOICE (SUNDAY) (Wilkes-Barre, Pennsylvania, US), Mike Baker The New York Times, 11 Jun, • Mixed, 24.40K circulation

Inside the hunt for the suspect

MOSCOW, Idaho — In the weeks after four University of Idaho students were found slaughtered in a house near campus last November, a growing roster of investigators...

The Times-Tribune (Scranton, Pennsylvania, US), Mike Baker, 10 Jun at 11:05PM, • Mixed, 29.17K readership

Inside the Hunt for the Idaho Killer By Mike Baker The New York Times Jun 11, 2023 3 min ago 0 Followers

MOSCOW, Idaho — In the weeks after four University of Idaho students were found slaughtered in a house near campus last November, a growing roster…

Citizens Voice (Wilkes-Barre, Pennsylvania, US), Mike Baker, 10 Jun at 11:03PM, • Mixed, 30.97K readership

Inside the hunt for the Idaho killer By Mike Baker The New York Times Jun 11, 2023 3 min ago 0 Followers

MOSCOW, Idaho — In the weeks after four University of Idaho students were found slaughtered in a house near campus last November, a growing roster…

The Boston Globe (Boston, Massachusetts, US), Mike Baker, 10 Jun at 12:23PM, • Mixed, 570.76K readership

Inside the hunt for the Idaho killer

MOSCOW, Idaho — In the weeks after four University of Idaho students were found slaughtered in a house near campus last November, a growing roster...

New Edge Times (New York City, New York, US), 10 Jun at 12:15PM, • Mixed, 66 readership

Inside the Hunt for the Idaho Killer

In the weeks after four University of Idaho students were found slaughtered in a house near campus last November, a growing roster of investigators...

World News Mojo (US), 10 Jun at 11:07AM, • Mixed

Idaho Student Murders: Inside the Hunt for the Killer

In the weeks after four University of Idaho students were found slaughtered in a house near campus last November, a growing roster of investigators desperately searching for answers had yet to identify a suspect or even find the murder weapon.

World News Era (New York City, New York, US), Evelyn Blackwell, 10 Jun at 7:04AM, • Mixed, 208 readership

Inside the Hunt for the Idaho Killer

In the weeks after four University of Idaho students were found slaughtered in a house near campus last November, a growing roster of investigators...

OneWorldNews (Los Angeles, California, US), 10 Jun at 6:33AM, • Mixed, 47 readership

Inside the Hunt for the Idaho Killer

In the weeks after four University of Idaho students were found slaughtered in a house near campus last November, a growing roster of investigators desperately searching for answers had yet to identify a suspect or even find the murder weapon.

Mahalsa (US), 10 Jun at 5:20AM, • Mixed

Inside the Hunt for the Idaho Killer

In the weeks after four University of Idaho students were found slaughtered in a house near campus last November, a growing roster of investigators desperately searching for answers had yet to identify a suspect or even find the murder weapon.

USA Times (US), Adam Daniels, 10 Jun at 5:12AM, • Mixed

Inside the Hunt for the Idaho Killer

In the weeks after four University of Idaho students were found slaughtered in a house near campus last November, a growing roster of investigators desperately searching for answers had yet to identify a suspect or even find the murder weapon.

USA Mail (Miami, Florida, US), 10 Jun at 4:43AM, • Mixed, 323 readership

Inside the hunt for the Idaho killer

In the weeks after four University of Idaho students were found slaughtered in a home near campus last November, a growing number of detectives desperate for answers have yet to identify a suspect or even find the murder weapon.

The New York Times (New York, US), Mike Baker, 10 Jun at 4:00AM, • Mixed

Inside the Hunt for the Idaho Killer

In the weeks after four University of Idaho students were found slaughtered in a house near campus last November, a growing roster of investigators desperately…

Use the following link(s) to download print clips or report items in csv format. These links will be available for 7 days.

Additional report links

- Spreadsheet (CSV)