

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

|                     |   |                                       |
|---------------------|---|---------------------------------------|
| STATE OF IDAHO,     | ) |                                       |
|                     | ) | Case No. CR29-22-2805                 |
| Plaintiff,          | ) |                                       |
|                     | ) | <b>ORDER ADDRESSING IGG DNA</b>       |
| vs.                 | ) | <b>AND ORDER FOR <i>IN CAMERA</i></b> |
|                     | ) | <b>REVIEW</b>                         |
| BRYAN C. KOHBERGER, | ) |                                       |
|                     | ) |                                       |
| Defendant.          | ) |                                       |
| _____               | ) |                                       |

**I. INTRODUCTION**

On November 13, 2022, four University of Idaho students were found murdered. As part of law enforcement’s investigation into the homicides, the FBI employed the use of investigative genetic genealogy (“IGG”) using DNA located on a Ka-Bar knife sheath found at the crime scene. Through the IGG process, the FBI constructed a family tree of individuals whose DNA matched with the DNA found on the knife sheath. The FBI then sent local law enforcement a tip to investigate Defendant Bryan Kohberger (“Kohberger”). Kohberger was arrested on December 30, 2022, and charged with four counts of Murder in the First Degree and one count of Burglary. Nothing about law enforcement’s use of IGG was used to obtain the arrest warrant for Kohberger or to obtain the search warrant for his DNA.

The State has now filed a motion to prevent the disclosure of the IGG information to the defense. The defense opposes the motion and filed a motion to compel requesting discovery of everything pertaining to the IGG investigation, including the family tree built by the FBI.

Disclosure of information gathered from an IGG investigation is an issue of first impression in Idaho. The State claims that the IGG information was not used to obtain any warrant and will not be used at trial. For the reasons set forth below, the Court finds that the defense is likely entitled to see at least some of the information from the IGG investigation, even if it may ultimately be found to have no relevance to Kohberger's defense. However, because the Court has not seen exactly what information pertaining to the use of IGG is available, the Court cannot say precisely what should and what should not be disclosed at this time. Because of this uncertainty, the Court grants the State's request for an *in camera* review of the IGG information. After such review, the Court will enter the appropriate discovery and protective orders.

## II. BACKGROUND

On November 13, 2022, four University of Idaho students, Kaylee Goncalves, Madison Mogen, Xana Kernodle, and Ethan Chapin, were found deceased in Goncalves, Mogen, and Kernodle's off-campus home on King Road in Moscow, Idaho. The cause of death for each was ruled a homicide.

While investigating the murders, law enforcement discovered "a tan leather knife sheath laying on the bed next to Mogen." Aff. of Probable Cause, Statement of Brett Payne. "The Idaho State Lab later located a single source of male DNA (Suspect Profile) left on the button snap of the knife sheath." *Id.*

"Once law enforcement had single-source DNA from the Ka-Bar knife sheath, they conducted what is called a short tandem repeat ("STR") analysis. STR DNA analysis involves looking at 20 regions within human DNA and allows law enforcement to make a direct comparison between two STR DNA profiles. Law enforcement submitted the STR DNA profile obtained from the Ka-Bar knife sheath to the Combined DNA Index System ("CODIS"), a database of STR DNA

profiles from convicted offenders, arrestees, and crime scene evidence, to identify the source of the DNA. No match was found.” Mot. for Protective Order at 2.

Meanwhile, law enforcement continued to investigate the homicides. They conducted a “video canvass” “in the area of the King Road Residence.” Aff. of Probable Cause, Statement of Brett Payne. The “video canvass” revealed a white sedan that piqued the interest of investigators. *Id.* The video footage was provided to a forensic examiner with the FBI who initially identified the sedan as a “2011-2013 Hyundai Elantra,” but later “indicated it could be a 2011-2016 Hyundai Elantra.” *Id.* On November 29, 2022, after reviewing video footage and asking law enforcement agencies to be on the lookout for a white Hyundai Elantra in the area, a 2015 white Elantra registered to Defendant Bryan Kohberger (“Kohberger”) was located in Pullman, Washington. *Id.*

The State’s case alleges that with this information, law enforcement determined that Kohberger’s “physical description” matched that given to investigators by a surviving roommate of the victims, and that Kohberger’s cellphone “travel [was] consistent with that of the white Elantra” in the early morning hours of November 13, 2022. *Id.* Based on this information, law enforcement believed Kohberger to be the driver of the white Elantra that was seen on video surveillance around the King Road residence at the time of the homicides. *Id.* Law enforcement also obtained cell phone records indicating that prior to the homicides, Kohberger’s cellphone had “utilize[ed] cellular resources that provide coverage to the area of 1122 King Road on at least twelve occasions prior to November 13, 2022.” *Id.*

“On December 27, 2022, Pennsylvania Agents recovered the trash from the Kohberger family residence located in Albrightsville, PA. That evidence was sent to the Idaho State Lab for testing. On December 28, 2022, the Idaho State Lab reported that a DNA profile obtained from the

trash and the DNA profile obtained from the sheath, identified a male as not being excluded as the biological father of Suspect Profile.” *Id.*

On December 30, 2022, Kohberger was arrested and charged with four counts of Murder in the First Degree and one count of Burglary. A search warrant for Kohberger’s DNA was issued on January 5, 2023. “A traditional STR DNA comparison was done between the STR profile found on the Ka-Bar knife sheath and Defendant’s DNA. The comparison showed a statistical match – specifically, the STR profile is at least 5.37 octillion times more likely to be seen if Defendant is the source than if an unrelated individual randomly selected from the general population is the source.” Mot. for Protective Order at 5-6.

### **III. INVESTIGATIVE GENETIC GENEALOGY**

On June 16, 2023, the State filed a Motion for Protective Order. In its Motion, the State brings to light law enforcement’s use of IGG “to find a lead” after the STR DNA profile from the knife sheath did not return a match in CODIS. It is unknown to this Court when exactly law enforcement employed the use of IGG.

A brief discussion on what IGG entails is necessary to better understand the significance, or insignificance, of its use in this case.

Consumer genetics has exploded, driven by the second-most popular hobby in the United States: genealogy. This hobby has been co-opted by law enforcement to solve cold cases, by linking crime-scene DNA with the DNA of a suspect’s relative, which is contained in a direct-to-consumer (DTC) genetic database. The relative’s genetic data acts as a silent witness, or genetic informant, wordlessly guiding law enforcement to a handful of potential suspects.

...

Driven mostly by genealogical hobbyists, the majority of the DTC ancestry genetic testing services rely on single nucleotide polymorphisms (SNPs), which are mutations at the level of the individual nucleotides. . . .

SNP data can also reveal whether users share segments of their genome with other users, predicting relatedness through a common ancestor. This works by analyzing

the percentage of overlapping bits of genetic code, so-called “identical by descent” sections, that one shares with relatives. Assuming no historical inbreeding, one likely shares roughly 12% of their genome with first cousins, about 3% with second cousins, and less than 1% with third cousins. Thus, by finding and quantifying overlapping genetic regions, DTC companies can predict genetic familial relationships. . . .

The leading consumer genetics companies, 23andMe and Ancestry, allow consumers to download their raw genetic data in plain-text format, which can then be uploaded to third-party websites. These websites provide a range of additional services, including interpreting the clinical relevance of mutations and allowing individuals to expand the reach of their genealogical search. Up to 62% of DTC customers will upload their genetic data to third-party websites for free or for a small fee. One such third-party website is GEDMatch, an open-access service that is free for the most basic searches.

GEDMatch users can connect with even more distant relatives who used different testing services like FamilyTreeDNA or My Heritage. They do so by uploading their SNP profile, generated elsewhere, onto GEDMatch. The raw SNP data is analyzed using a simple algorithm, and the site then produces a list of likely relatives automatically, without the need to share any underlying genetic information with the putative relative. In just a few years, GEDMatch has cultivated a large community of hundreds of thousands of users. . . .

. . .

Because the identity of the person from whom the crime-scene sample came is often unknown, law enforcement uses a false name--“John Doe,” for example--and submits it to GEDMatch. Then, when their “John Doe” matches someone in the database, they use genealogical data to determine a common ancestor who might be a great-great grandfather or grandmother. They then triangulate other data, such as birth, voting, and military records, to build out the pedigrees from that common ancestor, identifying all of the potential individuals who may be suspects. As we each have about 1,000 fourth cousins and 5,000 fifth cousins, depending on the degree of relation, this process can be quite time-consuming. The methodology is known by different names. In the forensic genetics research community, it is referred to as “long-range familial searches” (LRFS). Law enforcement sometimes refers to this as Forensic Genetic Genealogy (FGG).

Teneille R. Brown, JD, Why We Fear Genetic Informants: Using Genetic Genealogy to Catch Serial Killers, 21 Colum. Sci. & Tech. L. Rev. 1 (2019).

It is worth recognizing that the information above comes from an article published in 2019.

It is fair to assume that since 2019 DTC testing and law enforcement’s use of IGG/FGG have

increased exponentially. Bicka Barlow, one of the witnesses who testified on behalf of Kohberger, explained the process of IGG.

[T]he use of these databases [like GEDmatch] does not necessarily lead to a single individual as a potential suspect. . . .

. . . The determination of who is or is not a relative is subjective and based on the length of DNA shared between two individuals. The comparisons in such a database do not yield an identification of someone identical [to] the uploaded SNP data; rather it would identify possible relatives who might be in the database.

Once a putative relative has been identified, a family tree is created, working backwards to grandparents and possible great-great-grandparents. The family tree is then build [sic] down. The construction of these family trees is highly subjective and is based on the use of public records such as marriage and birth certificates. . . . In some instances, contacting individuals for further family information [like out of wedlock births, name changes, or adoptions]. This process leads to a pool of individuals rather than one specific individual.

Decl. of Bicka Barlow at 3-4.

The State describes law enforcement's use of IGG in this case as follows:

[I]nvestigators used IGG to begin the process of developing a lead to the individual who left DNA on the Ka-Bar knife sheath. The Idaho State Police utilized a private laboratory to develop a SNP [single nucleotide polymorphism] profile from the DNA on the Ka-Bar knife sheath. The private laboratory started using genetic genealogy to develop a family tree, but after law enforcement decided the FBI would take over, the private laboratory ceased its efforts and sent the SNP profile to the FBI.

The FBI uploaded the SNP profile to one or more publicly available genetic genealogy services to identify possible family members of the suspect based on shared genetic data. The FBI could then view through the genetic genealogy service's portal information regarding potential relatives of the suspect who left DNA on the Ka-Bar knife sheath. Based on information the FBI could see on the genetic genealogy service's portal, the FBI went to work building family trees of the genetic relatives to the suspect DNA left at the crime scene in an attempt to identify the contributor of the unknown DNA. The FBI built the family tree using the same tools and methods used by members of the public who wish to learn more about their ancestors. For example, the FBI consulted social media, viewed vital records such as birth and death certificates, and viewed other information already contained in the user portal for the genetic genealogy service, including unverified information submitted by other users of the genetic genealogy service. The FBI also consulted subscription-based databases available to law enforcement for information on individual people. The product of the genealogy conducted by the FBI was a family

tree that contained the name, birthdate, and death date (if applicable) of hundreds of relatives as well as their familial connections between each other and the suspect: Bryan C. Kohberger. The FBI then sent to local law enforcement a tip to investigate Defendant.

The IGG process pointed law enforcement toward Defendant, but it did not provide law enforcement with substantive evidence of guilt. The FBI did not, for example, conduct a direct comparison between the SNP profile from the Ka-Bar knife sheath and Defendant's SNP profile. That type of direct comparison required the more traditional STR DNA analysis, which was conducted by the Idaho State Police, not the FBI.

Mot. for Protective Order at 4-5.

Notably, nothing about the SNP profile, the use of IGG, or a family tree was used by law enforcement in obtaining the arrest warrant for Kohberger, the January 5, 2023, search warrant for Kohberger's DNA, or any other search warrant in the case.<sup>1</sup>

The State now seeks a protective order for "information related to the use of IGG in this case." Mot. for Protective Order at 6-7. Specifically, the State wishes to protect and not disclose to the defense the following:

1. The raw data related to the SNP profile and the underlying laboratory documentation related to the development of the profile, such as chain of custody forms, laboratory standard operating procedures analyst notes, etc.
2. All information related to IGG efforts in creating a family tree and identifying Defendant's potential relatives, including the identities of the genetic genealogy service(s) and the personally identifying information of Defendant's relatives.

*Id.* at 7-8.

While the FBI no longer has access to view much of the information it used to create the family tree, the State acknowledges that the FBI does possess "the family tree itself, notes jotted down by FBI agents as they constructed the family tree, and any records created to document the

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<sup>1</sup> At oral argument on August 18, 2023, the Court asked the State directly if any information obtained from the SNP profile, the use of IGG, or the family tree created was used to obtain any warrant in the case. The State represented that it was not. The Court has confirmed that nothing about the use of IGG or a family tree was used in the affidavit to obtain the arrest warrant for Kohberger or in the affidavit to obtain the search warrant for Kohberger's DNA.

removal of the SNP profile from the genetic genealogy service(s) pursuant to the DOJ Policy.”<sup>2</sup>

Mot. for Protective Order at 6. The State has represented that it has already disclosed the suspect SNP profile to the defense. Reply in Supp. of Mot. for Protective Order at 2.

The defense opposes the State’s Motion for Protective Order, and on June 22, 2023, filed Defendant’s Third Motion to Compel Discovery. A portion of that Motion to Compel asks that the State be required to turn over the following information related to the use of IGG:

1. All reports generated by any lab that conducted SNP testing on any sample in this case, including from samples where “unknown” males, not the defendant, were identified.
2. Copies of all communications between laboratory personnel and any other person or organization, with regard to the instant case, including letters, memos, emails, internet posts, press releases, and records of other communications (including communications with regard to any DNA profile uploaded to any public or private DNA database).
3. All documentation associated with any database search, including, but not limited to, CODIS, NDIS, GEDMatch, Family Tree DNA, and/or felon databases, case sample databases, missing persons databases, and internal quality assurance databases. The documentation should include, but is not limited to, the input profile, the input search parameters, the search output, all reports, all correspondence, and any follow-up actions.
4. Add documents related to any genetic genealogy search, including, but not limited to, the creation of a user profile(s), account(s) information, automated search results, uploading of data, all queries and search results from any private or public databank(s), family tree information, and all other documents, reports, notes or other communications pertaining to genealogy DNA database searches.
5. All documents related to any genetic genealogy investigations, including but not limited to additional collection and/or testing of DNA samples, notes of any interviews, documents obtained related to ancestry, and/or recommendation for further testing.
6. All documents related to comparison of any DNA samples collected during the genealogy investigation to crime scene evidence.

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<sup>2</sup> DOJ policy required that Kohberger’s SNP DNA profile be removed from the genetic genealogy service(s).



7. The name and address of all persons found to have sufficient sharing centimorgams with the “subject” profile to be identified as a match in the report created in this case.

Def.’s Third Mot. to Compel Discovery at 3-4.

In support of its Motion to Compel and in opposition to the State’s Motion for Protective Order, the defense submitted the Declaration of Anne C. Taylor (defense counsel), Declaration of Bicka Barlow, Declaration of Stephen B. Mercer, Affidavit of Leah Larkin, and the Declaration of Gabriella Vargas.

On July 14, 2023, the State filed its Reply in Support of Motion for Protective Order and the Affidavit of Rylene L. Nowlin.

On August 18, 2023, a hearing on the State’s Motion for Protective Order and Defendant’s Third Motion to Compel was conducted. The State was represented by William W. Thompson, Jr., Ashley S. Jennings, Jeff Nye, and Ingrid Batey. Kohberger was present and represented by Anne C. Taylor, Jay Logsdon, and Elisa Massoth. Following the defense’s presentation of evidence, the State reserved cross-examination of Leah Larkin and Gabriella Vargas.

On August 29, 2023, the State filed a Notice of Intent not to Cross-Examine Defense Witnesses, District Court Decision, and Records to Explain Witness Contact. On August 30, 2023, the State filed State’s Supplemental Response to Defendant’s Third Motion to Compel Discovery. On September 1, 2023, the defense filed a Response to State’s Notice of Intent not to Cross-Examine Defense Witnesses, District Court Decision, and Records to Explain Witness Contact. On September 12, 2023, the State filed a Supplement to State’s Notice of Intent not to Cross-Examine Defense Witnesses, District Court Decision, and Records to Explain Witness Contact. The issue is now fully submitted and ready for a decision.

















































