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Police consider familial DNA

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The DNA left behind on Brianna Denison's body gave Reno police in February the genetic identity of her killer, but they were baffled about his name.

All of their leads were exhausted until a Secret Witness tipster in November pointed them in the direction of the man they later charged with her death and the rapes of two other college women: James Michael Biela, 27, who did construction work in the University of Nevada, Reno area, where all the crimes occurred.

But authorities said right before that tip surfaced that they were considering using a new, controversial scientific tool available only in California.

Lt. Robert McDonald, who heads the robbery/homicide unit, said his team was going to ask California officials to search its DNA database of more than one million convicted offenders against the Denison evidence to see if they could find a partial match, which meant finding a relative of the suspect. If they did, it could be a huge investigative tool used to track the killer.

McDonald said at some point the team will ask California to compare evidence from the September 2004 slaying of preschool worker Kyla Annan with its database to see if the suspect's relative is among the profiles. Annan was 28 when she was brutally killed in her Quincy Street apartment. Despite a DNA dragnet of 150 men in the area, police say leads in the case have gone cold, and the suspect, like Denison's suspected killer, is not in the national offender database.

Since late last year, California began using its state DNA database to conduct familial searches after being the first state in the nation to create a policy on it.

A special software program allows scientists to rank the partial matches to increase the probability that they are a biological relative of the perpetrator. After police receive the name of the possible relative, detective work is needed to see if that person can shed light on a killer's identity.

New technology

The science uses the same principles as paternity testing and missing persons identifications.

This technology is part of a new trend in DNA advances, such as requiring adults in a handful of states, like California, to submit their DNA when they are arrested for a felony offense. Most states, like Nevada, require DNA only for convicted felons and certain misdemeanor convictions. It wasn't until last year that Nevada became one of the last states to require all felons, not just some, to submit their DNA to the database.

In Nevada, there is no law regarding using the state DNA database for familial searching. The current protocol is that scientists only release offender names from DNA hits if it is a perfect match to an offender and the unknown profile from evidence collected at a crime scene.

Washoe County Sheriff Mike Haley and county crime laboratory director Renee Romero said they are skeptical about the effectiveness of familial searching. They said it could create false leads and could create a political and civil rights firestorm because of possible invasion of privacy and a perception of "genetic surveillance." The possibility also exists that information can be gleaned about a person inappropriately, such as their health traits, they said.

California's policy has strict guidelines to protect people's privacy and will not release names unless absolutely necessary.

"The bulk of the mismatches you get will likely be thousands of false leads, and you will essentially be looking for a needle in a haystack," Romero said. "But maybe you could find that needle."

Successful links

There have been successes with the searching. The United Kingdom, which has conducted the searches for the past several years, has reported catching elusive serial rapists and murderers with the program.

- Darryl Hunt was exonerated in 2004 from a North Carolina prison after DNA evidence from the 1984 rape and murder of Deborah Sykes was run through a database and had a partial hit on a convicted man. Ultimately, that man's brother was questioned and confessed to the crime.
- In 2006, Tony Oliveo Mack was sentenced to prison for the decapitation of South Carolina woman, Joyce Robinson, in 1989. Mack was caught after a partial DNA hit was made on his brother, who was in the offender database. His fingerprints also matched to evidence at the scene.

Haley and Romero said they will keep close tabs on the successes and failures with California's familial DNA searching program to see if there are legal challenges and dramatic benefits that could make the program worthwhile in Nevada.

"Until experts in the field give us guidance on its ethicality and the consequences, we don't feel like it's something we should get involved with," Haley said.

Attorney Lee Rowland, who is the Northern Nevada coordinator for the American Civil Liberties Union, said the technology should be used only when public safety is threatened. She said safeguards have to be in place to protect privacy and make sure people are not harassed.

"With new technology, we have to be responsible and don't cross the line of trading privacy for security," she said. "There has to be clear benefits, and in Reno, we know that better than anyone else. We need to make sure the line doesn't get so low that everyone is under constant genetic surveillance."

McDonald said that knocking on a convicted offender's door is not an invasion of privacy. He said it's similar to using partial license plate numbers to find suspects, or running partial fingerprints for leads.

"The goal is not to have anymore victims," he said. "Isn't that worth talking to a detective? If we don't try technology like this, then what are we going to tell the future victims who were raped and killed by a violent predator?"

Additional Facts

What is it?

- Familial DNA searching is based on the fact DNA profiles of relatives are more likely to contain

similarities than unrelated people. A partial match could mean the DNA of a convicted offender in the database is a sibling, parent or child of the suspect. Due to testing on the male Y chromosome, men can be eliminated or linked as a relative.

- Scientists examine information on 13 locations on the human genome on two genetic markers, one from each parent. A match between 13 and more is considered a possible relative. A perfect match is when all 13 locations of DNA found at a crime scene match the 13 locations of a person's DNA sample.

How it works

California's DNA Data Bank consists of DNA profiles from convicted criminal offenders and a database of unknown crime scene (evidence) profiles.

- When a crime scene profile is searched against an offender database, a match is declared if the crime scene profile is a perfect match to the offender's DNA profile. If the profiles are not exact but match around 15 of 26 DNA indicators, the source of the crime scene profile may be a relative of the offender in the database. This is partial DNA matching, or familial searching, where the goal is to find a relative of the suspect who may lead investigators to the suspect's identity.
- California is the first state to have a policy on familial searching, while a few other states are exploring the issue. Nevada has no law regarding the issue.

guidelines

The name of the suspected relative offender may be released to the investigating agency if the California protocol outlined below has been followed:

- The crime scene DNA profile is a single-source profile.
- The case is unsolved and all investigative leads have been exhausted.
- A commitment is made by the agency and the prosecutor to further investigate the case if the name of the potentially related offender is eventually released.
- Testing on the DNA evidence is done on the Y chromosome, which produces common male profiles in a paternal lineage, and has a biological match with the offender's Y chromosome profile.

Local DNA Family Ties

- Washoe County DNA scientists examining evidence from the 2000 sexual assault and murder of Krystal Steadman, 9, concluded that DNA linked a 19-year-old man's father to the girl's sexual assault after his son was arrested for her murder and kidnapping. Thomas Robert Soria Jr., then 19, was arrested hours after Steadman's body was found down an embankment along U.S. 50. DNA comparison ruled him out as the man who raped the girl, but was so similar that it indicated the DNA profile was from his father, Thomas Robert Soria Sr. He later killed himself in jail, while his son was sentenced to a life term.
 - James Michael Biela was arrested Nov. 25 for the rape and strangulation of Brianna Denison, 19, after scientists examined his 4-year-old son's DNA and found it closely matched the DNA in the Denison case. Biela was arrested after scientists found his DNA was a perfect match to the evidence.
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