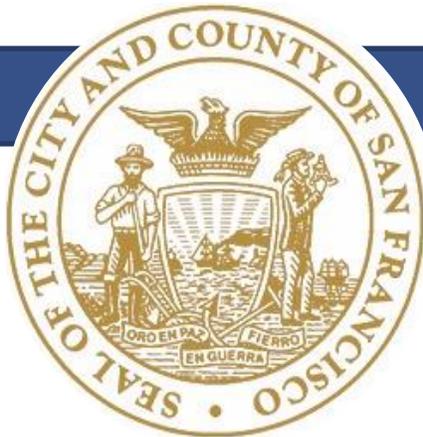


# Privacy and Surveillance Advisory Board Review

## Verogen MiSeq DNA Sequencing Instrument



**CITY & COUNTY OF SAN FRANCISCO**

Police Department

February 12, 2021



# DNA & Forensic Science

- Deoxyribonucleic Acid= DNA
- 1987- First criminal case conviction in USA using DNA Forensic Profiling
- DNA Profiles used to identify and convict suspects, exonerate individuals, missing persons cases or identify deceased individuals including disaster recovery (tsunamis, fires, building disasters etc.)
- CODIS is the acronym for the Combined DNA Index System and The National DNA Index System or NDIS is considered one part of CODIS
- According to the 2014 Office of Justice survey, there are 409 publicly funded Forensic Crime Laboratories (crime labs) in the US.
- According to the Innocence Project, there have been 375 people in the US exonerated by DNA testing.

## **MiSeq DNA Sequencing Instrument**

MiSeq DNA Sequencing Instrument system performs sequencing of DNA from evidence and reference samples needed for comparison. The system allows forensic scientists to analyze a minimum of 231 genomic DNA markers simultaneously—supplying significantly more actionable data than commonly analyzed using older methods.

### **SFPD Authorized Use Cases**

Generate sequenced DNA profiles from evidence to search against databases or reference samples for the purpose of accurately and expeditiously identifying, apprehending, arresting, and convicting criminal offenders and exonerating persons wrongly suspected or accused of crime or to identify human remains.
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## **Funding**

DOJ Bureau of Justice Assistance DNA Capacity Enhancement for Backlog Reduction (CEBR) Grant. Funding under this grant program supports the following purposes:

- To carry out, for inclusion in the Combined DNA Index System (CODIS), DNA analyses of database samples collected under applicable legal authority;
- To carry out, for inclusion in CODIS, DNA analyses of forensic case (e.g., “crime scene”) samples; and
- To increase the capacity of publicly-funded forensic DNA and DNA database laboratories.

# Investigation

## Compare DNA To Suspect



Types of bodily fluids left at crime scene:  
Blood  
Saliva  
Semen  
Vomit

SFPD will seek DNA of known suspect (warrant or consent)



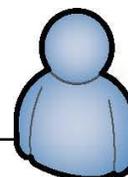
Crime Lab compares crime scene DNA against suspect DNA



SFPD investigation & arrest warrant



Reporting statement for direct comparisons:



Victim



Crime Scene



Suspect 1



Suspect 2



Suspect 3



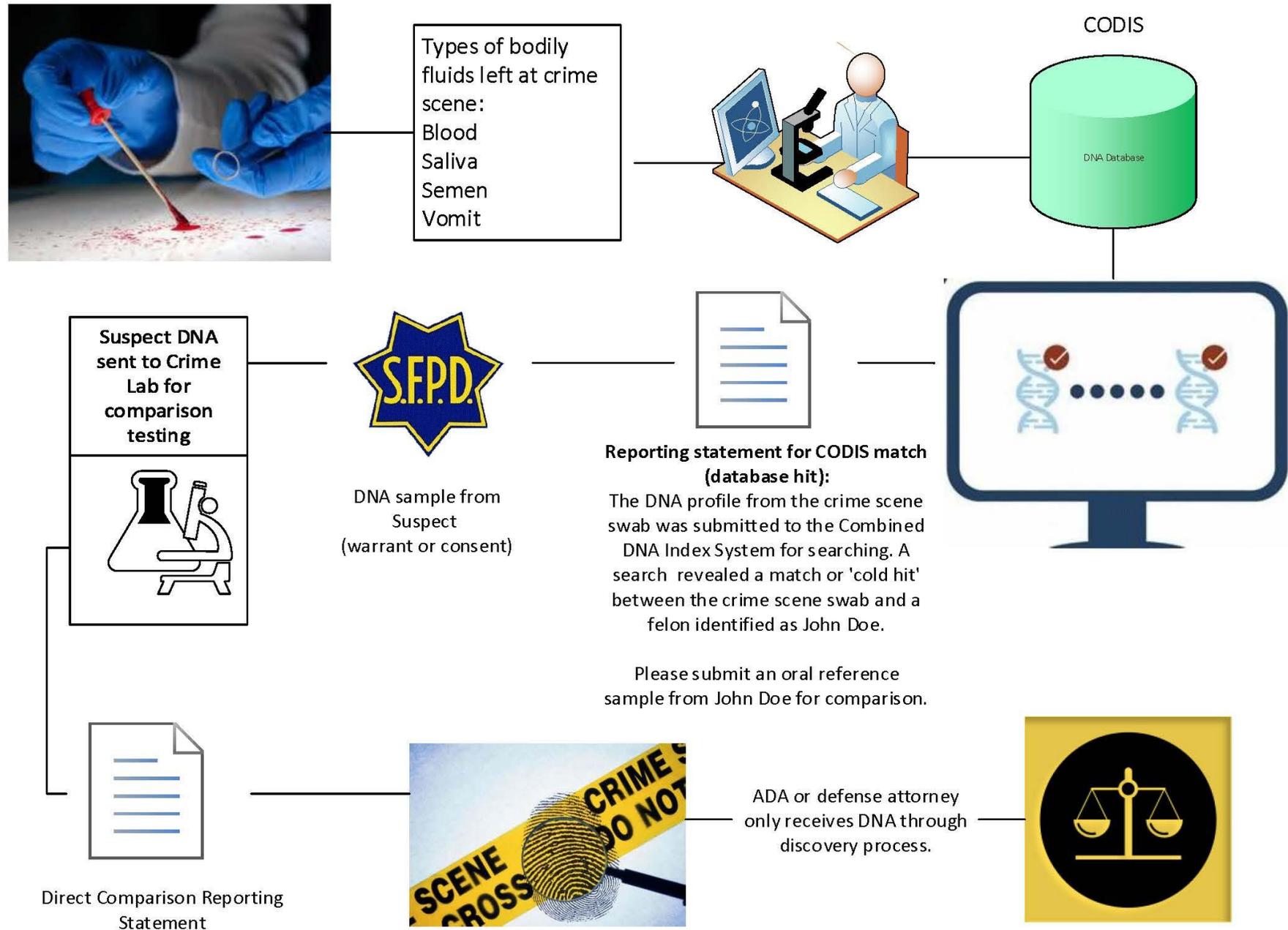
**Cannot be excluded**  
A single source DNA profile was obtained from the crime scene swab. Suspect 2 cannot be excluded as a possible source of the DNA present on this item.  
The probability of selecting a random unrelated individual having a DNA profile matching the DNA profile from the crime scene swab are approximately 1 in 1 trillion

ADA or defense attorney only receives DNA through discovery process.



## Investigation

### No Known Suspect



## What data is captured by MiSeq?



Genetic profiles unique to an individual. Can include phenotypic information (eye color, potential geographic origin, hair color, etc.).



Exclusion of victim or suspect DNA profile



Identification of probable origin of body fluid sample



Specimen identification number



Crime lab personnel information

## **What data is not captured by MiSeq?**

- Time or date of DNA deposit

An individual's

- Political opinions
- Religious or philosophical beliefs
- Trade Union Membership
- Sexual orientation
- Address, telephone number, email address
- Social Security number or other identifying number or code

## DNA Laws and Standards

- The DNA Identification Act of 1994 (42 U.S.C. §14132) –DOJ oversight
- American Association for Laboratory Accreditation (**A2LA**), and ANSI-ASQ National Accreditation Board (ANAB: The American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB) and Forensic Quality Services (FQS), approved separately as accrediting agencies are now part of ANAB).
- FBI's Quality Assurance Standards for Forensic DNA Testing Laboratories
- CA Proposition 69: "DNA Fingerprint, Unsolved Crime and Innocence Protection Act
- CA Penal Code Section 299: Expungement
- CA Penal Code Section 680: Sexual Assault Victims' DNA Bill of Rights
- CA AB-390 Criminal law: DNA evidence

## The DNA Act requires the following

- That the laboratories participating in the National DNA Index comply with the Quality Assurance Standards issued by the FBI Director;
- That the laboratories submitting the DNA records be accredited by a nonprofit professional association of persons actively engaged in forensic science that is nationally recognized within the forensic science community;
- That the laboratories submitting the DNA records undergo an external audit every two years to demonstrate compliance with the FBI Director's Quality Assurance Standards;
- That the laboratories are federal, state, or local criminal justice agencies ("or the Secretary of Defense in accordance with section 1565 of title 10, United States Code"); and
- That access to the DNA samples and records is limited in accordance with federal law.

## **MiSeq Policy Highlights**

- SFPD Crime lab will use this equipment to generate sequenced DNA profiles from evidence samples left at crime scenes and reference samples submitted to the lab. No swabbing of suspects necessary.
- DNA sequencing analysis provides investigators with information grounded in science and is proven to be reliable.
- Eligible DNA profiles are maintained in the FBI CODIS database for searching against DNA profiles across the United States on the Criminal Justice Information Services Division Wide Area Network (CJIS-WAN).
- Only SFPD criminalist and Crime Lab Manager allowed to access data
- Data Sharing is only allowed for law enforcement purposes. Only report summaries are provided to Investigations unit. DA's Office and defense counsel receive data through discovery process.
- Data is retained indefinitely. Retention schedule is subject to evidence laws, CA penal code and statute of limitations.
- All SFPD members are required to comply with department written directives including Surveillance Technology policies. Non-compliance may result in progressive discipline measures.

Questions

SAN FRANCISCO  
POLICE DEPARTMENT

