

NATIONAL SURVEY OF LAWS RELATING TO DNA EVIDENCE

I. INTRODUCTION

This research was conducted to evaluate national trends regarding the use of DNA evidence in identifying criminal offenders.

As technology increases, so does law enforcement's ability to solve crime. DNA samples collected from crime scenes and convicted felons are beginning to make a difference in criminal investigations. Some crimes that previously took months, if not years, to solve, can now be moved quickly by a click of the mouse. So called "cold hits" allow law enforcement officers the necessary probable cause to make an arrest.

Nationally, most states are expanding their DNA legislation in order to facilitate more efficient criminal investigations. However, as states enlarge their collection of DNA samples, laboratories become increasingly backlogged.

This research discusses the current methods of collecting DNA samples from criminal offenders. It also reviews state and federal legislative trends on the type of DNA testing used. Next, the research outlines how the DNA database systems are organized throughout the states and the federal government. Finally, the research discusses standards involved in using DNA evidence for criminal identification.

II. COLLECTION OF DNA

A. *Those who must submit to DNA Collection*

1. Federal legislation

Much debate has been devoted to the question of who must submit to the DNA collection. In response to this issue, former U.S. Attorney General, Janet Reno, established a commission in March of 1999 (The National Commission on the Future of DNA Evidence) to study and make recommendations on three things: the constitutionality of taking DNA from arrestees; the privacy/security issues involved in taking DNA from arrestees; and the practical/financial considerations of taking DNA from arrestees.¹

Thus far, the Commission has only made recommendations as to the financial considerations of taking DNA from arrestees. In doing so, the Commission concluded that before the DNA collection of arrestees was instituted, the current convicted offender database backlog needed to be substantially reduced, and funds needed to be raised for the collection and analysis of arrestees.²

To achieve this goal, this past December, Congress enacted the DNA Analysis Backlog Elimination Act of 2000.³ This Act apportions millions of dollars to the U.S. Department of Justice for DNA activities. Among other things, it authorizes the Attorney General to make grants to increase the capacity of laboratories to analyze samples taken from convicted offenders and crime scenes.⁴

The Act further sets forth those who must submit to DNA collection for federal crimes.⁵ This Act is important because it sets an example for the states as to what the minimum requirements should be. Under this Act, the following individuals must submit to the collection of DNA samples:

- Individuals in custody;
- Individuals on release, parole, or probation;
- Individuals who are convicted of the following federal offenses-
 - Murder, manslaughter, or other offenses relating to homicide;

- Sexual abuse, sexual exploitation or abuse of children, felony offense related to sexual abuse, incest, or transportation for illegal sexual activity;
- Peonage and slavery;
- Kidnapping;
- Robbery and burglary;
- Maiming;
- Arson;
- Any attempt or conspiracy to commit any of the above offenses; and
- Each member of the armed forces convicted of a felony or sexual offense under the Uniform Code of Military Justice.

For the above-mentioned offenses, the Director of the Bureau of Prison may use or authorize state or local governments and private entities to use such means as are reasonably necessary to detain, restrain, and collect DNA samples from an individual who refuses to cooperate in the collection of the sample. An individual who fails to cooperate in the collection of the sample shall be guilty of a class A misdemeanor.⁶

2. State legislation

In doing a state-by-state comparison of who must submit to DNA collection, it is evident that many states do not collect DNA samples for many of the above-mentioned acts. Up to this point, almost all states have not enacted laws that authorize DNA samples to be collected from all those who are convicted of misdemeanor and felony crimes, or from all those who are arrested. However, many states are attempting to expand their collection of DNA samples.

In 2000, the Connecticut legislature considered but did not enact a bill that would have allowed DNA sampling of all arrestees who were fingerprinted.⁷ In 2001, the Florida legislature is considering a bill that would allow DNA sampling of all felony arrestees.⁸ In 1999, Louisiana extended its collection of DNA samples to any person who is arrested for felony sex offenses or other specified offenses to be later determined by a state law enforcement agency.⁹ Potentially, this statute may authorize the collection of DNA samples from all arrestees.

All fifty states have law requiring that convicted sex offenders must submit to DNA samples. However, the states have different approaches as to the inclusion of violent offenses for collection. Below is a sample of the disparity that existed in the states as of the summer of 2000:¹⁰

- 38 states require DNA samples for murder;
- 28 states require DNA samples for assault and battery;
- 17 states require DNA samples for burglary;
- 7 states require DNA samples for all felonies (Alabama, Georgia, New Mexico, Tennessee, Virginia, Wisconsin, Wyoming).

Many other states in the nation are considering the expansion of their DNA legislation. In the year 2000, about 16 legislatures considered bills to expand the list of offenses that qualify for DNA collection. Here is a sample of the types of bills considered:¹¹

- 7 states sought to add burglary;
- 1 state sought to add all crimes with a firearm;
- 4 states sought to add all felonies;
- 1 state sought to add habitual offenders;
- 1 state sought to add criminal property damage;
- 1 state sought to add extortion; and
- 1 state sought to add counterfeiting.

Oregon law covers many felony offenses that qualify for DNA sampling. Below is a list of those offenses that qualify for DNA collection after the conviction of an adult offender and the disposition of a juvenile offender:¹²

- Rape, sodomy, unlawful sexual penetration, public indecency, incest or using a child in display of sexually explicit conduct;
- Burglary in the second degree when committed with the intent to commit a previously mentioned sexual offenses;
- Promoting or compelling prostitution;
- Burglary in the first degree;
- Assault in the first degree;

- Conspiracy or attempt to commit any previously mentioned felonies;
- Murder or aggravated murder.

Recent studies have shown that it is advantageous for the states to collect DNA samples from all convicted felons.¹³ Recently, in Virginia, when DNA evidence collected at rape scenes was compared with all convicted felons in the state's DNA database, about 40% of the matches were from felons who were entered into the system because of a non-violent crime (e.g., property crimes).¹⁴

3. Constitutional privacy issues

As mentioned before, former Attorney General, Janet Reno, formed a commission to determine the constitutional issues involved in taking DNA samples from all arrestees. The courts generally agree that Fourth Amendment privacy concerns are implicated when non-consensual DNA extractions are performed on convicted offenders.¹⁵ However, the state may invade privacy interests if it is minimal and justified by law enforcement purposes. To justify the intrusion, the state should have at least probable cause or a warrant.¹⁶

The Ninth Circuit Court of Appeals has ruled that Oregon's statutes authorizing DNA collection from convicted offenders constitutes a minimal intrusion on the offender's privacy, and therefore, blood sampling from convicted offenders does not violate the Fourth Amendment of the U.S. Constitution.¹⁷ The court reasoned that taking blood samples was just as intrusive on the convicted offender's privacy as was taking fingerprints from a non-consenting arrestee.¹⁸ Therefore, blood sampling, and any other less intrusive method, does not violate the Fourth Amendment.¹⁹

While it is debatable whether blood samples could be collected from all arrestees for DNA purposes, the court did hint that if probable cause existed, there is a strong possibility that such DNA sampling would be upheld as constitutional.²⁰ Additionally, with the advent of less intrusive DNA sampling, such as buccal cell sampling (swab tests), there is an even stronger likelihood that the courts may allow DNA collection from all arrestees if such methods were used.

B. *When DNA collection occurs*

According to the DNA Identification Act of 1994, which established standards for the national DNA databank, CODIS, DNA collection may occur when persons are convicted of a crime, when samples are recovered from a crime scene, when samples are recovered from unidentified human remains, and when samples are voluntarily contributed from relatives of missing persons.²¹

Oregon's laws, in regards to when DNA is collected, are typical of those found in many other states. DNA may be collected when there is probable cause for a search warrant. Also, the appropriate state agency must collect DNA samples as soon as practicable after the conviction (adult offenders) or dispositional order (juvenile offenders) of the defendant.²² Most laws are applied retroactively to allow DNA sampling of any person being released, or any person serving a term of incarceration or probation.²³

Some states have added to the list of persons who must submit to DNA sampling. For example, in Wisconsin²⁴, any person who is found not guilty by reason of mental disease or defect, or any person in institutional care, or any person released on parole must submit to DNA sampling. Also, in Alabama²⁵, those who are given suspended sentences must submit to DNA sampling.

III. TYPE OF DNA COLLECTION AND TESTING USED AMONG THE STATES

The type of DNA collection used is, by and large, universal among the states. Like Oregon, most states authorize both the collection of blood and buccal samples.²⁶ Unlike Oregon, other states allow saliva, tissue, or any other medically approved manner to collect DNA samples.²⁷ While the methods vary, most states do not statutorily recommend one method over the other. However, they do set different standards for the collection of the different samples (this is discussed below).

Currently, there exists two main types of forensic DNA testing, restriction fragment length polymorphism (RFLP)

and polymerase chain reaction (PCR)²⁸. Both methods are accepted by the Oregon judiciary.²⁹

In general terms, RFLP testing cuts the DNA sample into small fragments. These fragments contain polymorphic segments that are used for genetic probing by determining the length of each segment. A given individual will have fragments of the same length, and different individuals will have fragments of a different length. Therefore, if a probe identifies two samples with the same length of fragments, there is a match. RFLP requires a larger sample of DNA and is generally not used for degraded or small DNA samples.³⁰

PCR testing is available for smaller and older samples of DNA. The PCR test is mainly an amplification test (not a genetic test) that creates millions of DNA molecules. It does not identify individuals by fragment matching; it only excludes a certain percentage of the population by observing the DNA areas that are the same for all people (conserved regions) and those areas differing among people (variable regions).³¹

IV. DNA INDEX SYSTEMS

The DNA Identification Act of 1994 authorized the Federal Bureau of Investigation to establish the Combined DNA Index System (CODIS).³² The software used in CODIS allows users to store DNA profiles and link serial crimes together by matching DNA profiles. All fifty states have CODIS databases.³³

CODIS consists of two indexes, the Convicted Offender Index and the Forensic Index. Generally, the user will first search the Convicted Offender Index to determine if the DNA evidence collected matches that of a previous convicted offender. If there is no match found under the Convicted Offender Index, the program searches the Forensic or Crime Scene Index. This allows the user to see if the evidence collected can be linked to evidence collected in other crimes.³⁴

There are three tiers in the CODIS system: the Local DNA Index System (LDIS), the State DNA Index System (SDIS), and the National DNA Index System (NDIS).³⁵

Most DNA profiles originate with the LDIS, and then the samples flow to the SDIS and the NDIS. In general, the LDIS is run by local crime labs operated by the police department or the sheriff's office.³⁶

In general, each state has a single system that serves as a repository for the DNA collected at the local level. The SDIS allows local state labs to communicate with each other.³⁷ In Oregon, the Department of State Police is authorized to store samples, analyze samples, and maintain the criminal identification database.

The NDIS was created in 1998, and it is maintained by the FBI under the DNA Identification Act. The NDIS serves as a repository for DNA profiles collected by the participating states, which allows for inter-state electronic searches. Only forty-three labs within twenty-four states currently participate within this program; Oregon is one of them.³⁸

V. STANDARDS FOR DNA EVIDENCE

A. *Crime scene*

Upon arriving at a crime scene, the responding officer should be cautious and observant of the surrounding environment. The officer should take all the steps necessary to ensure that only minimum contamination of the scene occurs. This is done by controlling all individuals at the crime scene. Next, the officer should establish the crime scene itself by marking off the boundaries.³⁹

When the investigating officers arrive at the scene, the responding officer should brief them and document any activities or observations.⁴⁰

The investigators in charge are to share preliminary information and develop an investigative plan. After doing so, the investigators and those responsible for processing the scene should conduct a walk through.⁴¹

After conducting the walk through, the investigator needs to assess what specialized resources are required (such as forensic specialists). To establish contamination control, the investigators are to supervise the procedures

and evidence collection of all personnel. In doing so, the investigators need to document all the steps taken in collecting, preserving, and transporting the evidence.⁴²

Prior to releasing the scene, the investigators in charge should establish a crime scene debriefing team that reviews the evidence that was collected and establishes post-scene responsibilities. Also, to guarantee that the investigation is complete, the investigator should conduct a final walk through and compile all the documents.⁴³

B. *Transportation and Storage*

To insure that DNA evidence is not contaminated upon transportation and storage, the following guidelines have been recommended:⁴⁴

- Evidence should be kept dry and at room temperature;
- Evidence should be secured in paper bags or envelopes, then sealed and labeled according to the chain of custody standards;
- Evidence should never be placed in plastic bags because they retain moisture; and
- Direct sunlight and warmer conditions should be avoided.

C. *Chain of Custody*

To monitor the chain of custody, the documentation of DNA samples should follow at minimum these standards:⁴⁵

- Name of individual collecting the sample;
- Each person or entity subsequently having custody of it;
- The date the sample was collected or transferred;
- Agency and case number;
- Victim's, suspect's, or convicted offender's name; and
- Brief description of the item.

D. *Laboratories*

Under the DNA Identification Act of 1994, which was slightly amended by the DNA Analysis Backlog Act of 2000, all laboratories that wish to participate in the CODIS system must follow a myriad of standards issued by the Director of the FBI.⁴⁶ These laboratories must also undergo semiannual external proficiency testing by a DNA proficiency-testing program.⁴⁷

Laboratories may only disclose stored DNA samples and analyses to criminal justice agencies for law enforcement purposes, for judicial proceedings, for criminal defense purposes, and if personal information is removed, for quality control purposes.⁴⁸

States must expunge from their index the DNA analysis of a person when the State receives a certified copy of a final court order establishing that such conviction has been overturned. Failure to comply with the set standards results in cancellation of the laboratory's DNA system index.⁴⁹

In Oregon, blood samples can only be drawn in a medically accepted manner by a licensed nurse, qualified medical technician, licensed physician, or similar licensed person.⁵⁰ Buccal samples may be obtained by anyone authorized to do so by the appropriate agency.⁵¹ Those who collect samples are not held civilly liable.⁵²

E. *Admissibility of Evidence*

At common law, in order for scientific evidence to be admissible it must have been sufficiently established to have gained general acceptance in the particular field in which it belonged. This is known as the "general acceptance" test.⁵³ This test is generally applicable in those states that have not adopted the Federal Rule of Evidence.⁵⁴

The "general acceptance" test has been superseded by the Federal Rules of Evidence.⁵⁵ In Oregon, the standards for admissibility of DNA evidence are similar to those standards found at the federal level and in other states that have adopted the Federal Rules of Evidence.⁵⁶ According to a recent Oregon case, the following factors must be considered when determining whether DNA evidence will satisfy the general standard of admissibility for scientific evidence:⁵⁷

- Whether the scientific community, including the forensic field, generally accepts the method as scientifically valid;
- Whether the expert witness is qualified to testify;

- Whether the expert witness followed the protocols of the method and conducted control test to ensure validity of work;
- Whether abundant literature concerning the method's validity exists;
- Whether the method's novelty does not usurp the trier of fact's role.
- Whether the method does not rely upon expert's subjective interpretation; and
- Whether the probative value of the evidence substantially outweighs any danger of unfair prejudice, confusion, or undue delay.

VI. CONCLUSION

DNA evidence is crucial to future criminal investigations. Not only does it allow for the identification of criminal offenders, it also eliminates those who are innocent.

As the National Commission on the Future of DNA Evidence resolves some of the constitutional and financial concerns, DNA evidence will play an even greater role in criminal investigations. The efficiency of DNA sampling will heavily depend on the funding state public agencies receive from both their own state government and from the federal government.

As states add more crimes, and potential arrests, to their list of offenses that qualify for DNA sampling, they will increase their success rate of preventing and solving crimes.

KEVIN L. MANNIX, P.C.

 By: Kevin L. Mannix
 Attorney-at-Law

 Date

 Assisted By: Chris A. Bishop
 Law Clerk

 Date

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- ¹ National Commission on the Future of DNA Evidence, *Recommendation of the National Commission on the Future of DNA Evidence to the Attorney General Regarding Arrestee DNA Sample Collection*, (Jan. 26, 2001), <http://www.ojp.usdog.gov/nij/dna/arrestrc/html>.
- ² *Id.*
- ³ DNA Analysis Backlog Elimination Act of 2000, Pub. L. No. 106-546 (HR 4640)(2000).
- ⁴ 42. U.S.C.A. § 14135 (2000).
- ⁵ 42. U.S.C.A. §§ 14135a; 10 U.S.C.A. § 1565 (2000).
- ⁶ 42. U.S.C.A. § 14135a(4) (2000).
- ⁷ Timothy Schellberg, *Forensic DNA Legislation 2000: National Commission on the Future of DNA Evidence* (April 10, 2000), <http://www.ojp.usdog.gov/nij/dnamtgtrans9/trans-m.html>.
- ⁸ S.B. 268, Regular Session (Florida 2001), <http://www.leg.state.fl.us/cgi-bin/viewpage.pl%3Ftab=session&Submenu=1&FT=D&File=sb0268.html&Directory=session/2001/Senate/bills/billtext/html>.
- ⁹ La. Rev. Stat. Ann. § 15:603-609 (West 2000).
- ¹⁰ Timothy Schellberg, *Forensic DNA Legislation 2000: National Commission on the Future of DNA Evidence* (April 10, 2000) <http://www.ojp.usdog.gov/nij/dnamtgtrans9/trans-m.html>.
- ¹¹ *Id.*
- ¹² Or. Rev. Stat. §137.076(1) (1999).
- ¹³ Letter from Tim Schellberg, Attorney-at-Law, Smith Alling Lane, to Kevin L. Mannix, Oregon State Representative (December 30, 2000).
- ¹⁴ *Id.*
- ¹⁵ See Robin Cheryl Miller, Annotation, *Validity, Construction, and Operation of State DNA Database Statutes*, 76 A.L.R. 239 (2000).
- ¹⁶ *Id.*
- ¹⁷ *Rise v. State of Oregon*, 59 F.3d 1156, 1558-60 (9th Cir. 1995).
- ¹⁸ *Id.*
- ¹⁹ *Id.*
- ²⁰ *Id.*
- ²¹ DNA Identification Act of 1994, Pub. L. No. 103-322, 108 Stat. 2065 (1994).
- ²² Or. Rev. Stat. §137.076(1); 419C.473 (1999).
- ²³ Or. Rev. Stat. §137.076(5) (1999).
- ²⁴ Wis. Stat. Ann. § 165.76 (West 1999).
- ²⁵ Ala. Code § 36-18-25 (1999).
- ²⁶ Or. Rev. Stat. §137.076(3) (1999).
- ²⁷ Va. Code Ann. § 19.2-321.2 (Michie 1999).
- ²⁸ Donald E. Riley, Ph.D., *DNA Testing: An Introduction for Non-Scientists an Illustrated Explanation*, Scientific Journal (1998).
- ²⁹ *State v. Futch*, 123 Or. App. 176, 860 P.2d 264, (1993); *State v. Lyons*, 934 P.2d 802, 324 Or. 256 (1996).
- ³⁰ *Futch*, at 188, 860 P.2d at 276-72.
- ³¹ *Lyons*, at 266, 924 P.2d 809.
- ³² DNA Identification Act of 1994, Pub. L. No. 103-322, 108 Stat. 2065 (1994).
- ³³ Dwight E. Adams, M.D., *Forensic DNA Analysis*, Congressional Statement (March 23, 2000), <http://www.fbi.gov/pressrm/congress/congress00/dadams.htm>.
- ³⁴ *Id.*

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- ³⁵ *Id.*
- ³⁶ *Id.*
- ³⁷ *Id.*
- ³⁸ *Id.*
- ³⁹ National Institute of Justice, *Crime Scene Investigation: A Guide for Law Enforcement* (1999), <http://www.ncjrs.org/pdffiles1/nij/178280.pdf>.
- ⁴⁰ *Id.*
- ⁴¹ *Id.*
- ⁴² *Id.*
- ⁴³ *Id.*
- ⁴⁴ National Institute of Justice, *What Every Law Enforcement Officer Should Know About DNA Evidence* (pamphlet), <http://www.ncjrs.org/pdffiles1/nij/bc000614.pdf>.
- ⁴⁵ National Institute of Justice, *Crime Scene Investigation: A Guide for Law Enforcement* (1999), <http://www.ncjrs.org/pdffiles1/nij/178280.pdf>.
- ⁴⁶ DNA Identification Act of 1994, Pub. L. No. 103-322, 108 Stat. 2065 (1994); see also Federal Bureau of Investigation, *Quality Assurance Standards for Convicted Offender DNA Laboratories*, Forensic Science Communications vol. 1 no. 3 (July 2000), <http://www.fbi.gov/programs/lab/fsc/backissu/july2000/codis1b.htm>.
- ⁴⁷ 42 U.S.C.A. § 14132 (2000).
- ⁴⁸ DNA Identification Act of 1994, Pub. L. No. 103-322, 108 Stat. 2065 (1994).
- ⁴⁹ *Id.*
- ⁵⁰ Or. Rev. Stat. § 137.076(3)(a) (1999).
- ⁵¹ Or. Rev. Stat. § 137.076(3)(b) (1999).
- ⁵² Or. Rev. Stat. § 137.076(3)(c) (1999).
- ⁵³ *Frye v. U.S.*, 293 F. 1013 (D.C. Cir. 1923).
- ⁵⁴ See Paul E. Tracy, Ph.D, & Vincent Morgan, *Big Brother and His Science Kit: DNA Databases for 21st Century Crime Control?*, p. 124-25 (2000).
- ⁵⁵ *Daubert v. Merrell Dow Pharmaceuticals*, 509 U.S. 579 (1993).
- ⁵⁶ *Lyons*, 324 Or. at 269-281, 924 P.2d at 810-816
- ⁵⁷ *Id.*