

DNA: Whose Is It, Orange County Crime Lab's or the District Attorney's?

1. SUMMARY

In Orange County, two different agencies perform similar yet different services in the collection of samples of DNA, the deoxyribonucleic acid that carries genetic information.

The Orange County Crime Lab (OCCL) collects forensic DNA from crime scenes and obtains DNA samples from felony suspects that can be uploaded into the FBI Laboratory's Combined DNA Index System (CODIS) and the State's DNA Index System (SDIS).

The Orange County District Attorney's DNA unit (OCDA) collects voluntary DNA samples from low-level felony drug possession suspects and non-violent misdemeanor suspects, neither of which are eligible for uploading into CODIS, SDIS or the National DNA Index System (NDIS).

2. REASON FOR INVESTIGATION

This study was conducted to investigate possible duplication of effort and/or expense in DNA processing, such as typing of samples, uploading and database storage, and to determine if there is possible waste and conflicts created by multiple databases of similar information. DNA analysis has become the important scientific tool in law enforcement's arsenal.

3. METHOD OF INVESTIGATION

The Grand Jury gathered information in interviews and site tours, from websites and numerous meetings with personnel from the Orange County Sheriff's Department, the Orange County District Attorney's office, the Orange County Crime Lab, members of the Board of Supervisors, and other public officials.

Research included reading and reviewing the following reports, documents, and articles: Qual-

ASCLD— American Society of Crime Laboratory Directors

BILL— OCDA's DNA database

CODIS—C ombined DNA Index System

DNA — deoxyribonucleic acid

LDIS—L ocal DNA Index System

NDIS—N ational DNA Index System

OCCL— O range County Crime Lab

OCDA— O range County District Attorney

SDIS — S tate DNA Index System

ity Assurance Standards for Forensic DNA Testing Laboratories¹; OCDA DNA Expansion Project Cooperative Agreement²; Program Abstract, Forensic DNA Unit Efficiency Improvement Program Orange County Sheriff³; Stakeholders Panel on DNA Testing⁴; Report from the Stakeholders Panel on DNA Testing⁵; articles from LATimes.com⁶; article from OCRegister.com⁷; price agreement between Bode Technology Group, Inc. and OCDA⁸; letter to Hon. Patrick J. Leahy, Chairman, Senate Committee on the Judiciary⁹.

¹Federal Bureau of Investigation, "Quality Assurance Standards for Forensic DNA Testing Laboratories" and "Quality Assurance Standards for Convicted Offender DNA Databasing Laboratories," Forensic Science Communications, July 2000, Volume 2, Number 3.

²Agenda Staff Report, Board of Supervisors, Meeting Date 10/20/09

³Orange County Sheriff, Forensic DNA Unit Efficiency Improvement Program, FY2009

⁴Full Report to the Board of Supervisors on the Meetings of the Stakeholders Panel on DNA Testing, October 2008

⁵Agenda Staff Report, Board of Supervisors, Meeting Date 10/28/08

⁶"Showdown over DNA lab reflects national debate," 11/2/09; "O.C. board seeks review of DNA crime lab, databases," 11/3/09; "Arrested in O.C.? A DNA sample could buy freedom," 11/3/09; "Orange County D.A.'s DNA database rapidly growing," 11/3/09

⁷Trust issues at heart of fight over proposed DNA lab," 11/2/09

⁸Price Agreement between Bode Technology Group and OCDA/ DNA Unit dated 1/14/09

⁹The American Society of Crime Laboratory Directors (ASCLD) letter, "Strengthening Forensic Science in the United States: A Path Forward," dated March 17, 2009

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4. BACKGROUND AND FACTS

The FBI Laboratory's Combined DNA Index System (CODIS) began as a pilot software project in 1990 serving 14 state and local laboratories. The DNA Identification Act of 1994 formalized the FBI's authority to establish a National DNA Index System (NDIS) for law enforcement purposes. Today, over 170 public law enforcement laboratories participate in NDIS across the United States. Internationally, more than 40 law enforcement laboratories in over 25 countries use the CODIS software for their own database initiatives¹⁰.

CODIS generates investigative leads in cases in which biological evidence is recovered from the crime scene. Matches made among profiles in the Forensic Index can link crime scenes together, possibly identifying serial offenders. Based upon a match, police from more than one jurisdiction can coordinate their investigations and share the leads they developed independently. Matches made between the Forensic and Offender Indexes provide investigators with the identity of suspected perpetrators.

Since names and other identifiable information are not stored at NDIS, qualified DNA analysts in the laboratories sharing matching profiles contact each other to confirm the candidate match¹¹.

4.1 Nuclear DNA

Nuclear DNA is found in the nucleus of the cell. It is inherited from both the mother and the father. Nuclear DNA analysis targets areas of the nuclear DNA called Short Tandem Repeats (STRs) for entry into CODIS.

Nuclear DNA can be found in samples from blood, semen, and bones. Samples also can be obtained from cigarette butts, shirt collars, hats, weapons, bottles and envelopes which the suspect has touched or worn. CODIS allows for the entry

of 13 core STR loci into indexes based on specimen categories.¹²

4.2 Mitochondrial DNA

Mitochondrial DNA (mtDNA) is found in the mitochondria of the cell. It is inherited only from the mother. Mitochondrial DNA is generally extracted from biological items of evidence such as hair, bones and teeth. Typically, these samples contain low concentrations of degraded DNA, often making them unsuitable for nuclear DNA examinations.

The aspect of maternal inheritance is useful in missing persons cases in which direct DNA reference samples often are not available, but since many individuals can have the same mtDNA type, unique identifications are not possible using only mtDNA analyses. CODIS allows for the entry of mtDNA only in missing persons related indexes.¹³

4.3 Proposition 69

Realizing that DNA can be used both to include and to exclude possible suspects in criminal matters, the Orange County District Attorney (OCDA) instituted the Innocent Review Panel in 2000, which ultimately led to the passage of Proposition 69 by California voters in November 2004. The "DNA Fingerprint, Unsolved Crime and Innocence Protection Act" expands and modifies state law regarding the collection and use of criminal offender DNA samples by giving the Attorney General's Office, California Department of Justice, and many other state and local agencies the responsibility of implementing the new law.¹⁴

In Orange County, the District Attorney employs the latest DNA technology to solve both violent and property crimes and maximizes the use of DNA technology, offender DNA sample tracking, and automated high through-put DNA analysis procedures.¹⁵

¹⁰U.S. Department of Justice, Federal Bureau of Investigation pamphlet, "CODIS Combined DNA Index System"

¹¹ibid.

¹²ibid.

¹³ibid.

¹⁴<http://ag.ca.gov/bfs/prop69.php>

¹⁵<http://orangecountyda.com/docs/132475112009biennialreport2009.pdf>

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4.4 Orange County's DNA Database Systems

There are two types of DNA databases being used in Orange County. The first and largest database system is the Federal Bureau of Investigation's CODIS structure—which includes the National DNA Index System (NDIS), the California Department of Justice State DNA Index System (SDIS) and the Orange County Crime Lab's Local DNA Index System (LDIS)—comprising felony offender profiles and forensic crime scene profiles. DNA samples collected from felony offenders and at crime scenes must be analyzed by an accredited laboratory, such as the Orange County Crime Lab before they can be uploaded into CODIS.

The second type of database system in Orange County is the Orange County District Attorney's BILL¹⁶, comprising nonviolent misdemeanor suspect profiles. DNA samples collected from low-level drug possession suspects and nonviolent misdemeanor suspects, such as petty theft, trespassing, and property crimes, are not eligible for CODIS, which accepts only felony suspects and forensic crime scene profiles.

4.5 District Attorney's Database System

The District Attorney's office says that its research indicates that 8% of previously convicted criminals commit 80% of all crimes. In other words, a small percentage of the criminal population offends repeatedly. Therefore, expanding the number of DNA profiles in a misdemeanor database should lead to solving more crimes and to reducing the recidivism rate.

In order to expand the number of DNA profiles collected in Orange County, the OCDA submitted a grant application to the National Institute of Justice in 2005. The grant funds were to be used to develop a DNA information-sharing model (database) in which police agencies, the district attorney's office, and the laboratories that processed and analyzed the

DNA samples would cooperate. Orange County was one of five grant applicants chosen for funding (Los Angeles, Denver, Phoenix and Topeka were the other four).

In 2005, the OCDA met with then-Orange County Sheriff-Coroner Mike Carona, who was overseeing the OCCL, and allegedly offered to fund the additional collection and analysis of DNA from misdemeanor offenders and create a separate database for this information.

Because of the newness of the technology, at that time the OCCL (and other crimes labs throughout the country) were burdened with a backlog of unprocessed DNA samples from crime scenes. The addition of more samples collected under this new low-level, nonviolent crimes project would add to the lab's backlog and increase the turn-around time, which is crucial to solving property crimes. Therefore, Carona rejected the District Attorney's offer. Because of that rejection, the OCDA decided to establish a separate unit to collect, process, analyze, and store DNA samples collected from misdemeanor offenders.

In 2007, with financial support (\$875,000) from the Orange County Board of Supervisors, the District Attorney's office launched the misdemeanor crimes DNA database (BILL) to be housed in a secured location outside the OCCL. To date, five collection sites have been established: the Central Justice Center (Santa Ana), the North Justice Center (Fullerton), the Harbor Justice Center (Newport Beach), the Westminster Court Annex, and the Central Jail Complex. By March 2010, over 25,000 buccal swabs¹⁷ had been collected and analyzed, and over 22,000 samples uploaded into the District Attorney's DNA database, resulting in three hits (identification of the suspect).

The rapid growth in the OCDA's database is attributed to prosecutors dropping charges against first-time, low-level suspects who voluntarily agree to pay a \$75 fee and submit a DNA sample. Participants sign a waiver that explains the privacy rights

¹⁶BILL is not an acronym; it is simply the name chosen by the database administrator.

¹⁷Buccal swabbing is a quick and painless procedure that involves rubbing a cotton-like swab against the inside of the volunteer's cheek.

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they are giving up and that the sample will be put into the OCDA's database, not the California or U. S. Department of Justice databases.

Thus, the District Attorney is using the technology to identify suspects who have not made it into the state or federal databases. This process is helping to clear up court calendar backlogs, save taxpayers money¹⁸ and lets arrestees avoid a conviction record for low-level crimes. The database also provides law enforcement a valuable tool with the potential to solve cold crimes and deter suspects whose DNA is in the database from committing new crimes.

It is important to note that OCDA doesn't have a DNA lab, merely a database. Thus, collected samples are outsourced for analysis only to Bode Technology Group, Inc. in Virginia at a cost of about \$25 each and turnaround time is 30 days or less.

4.6 Orange County Crime Lab and Its Database System

The Orange County Crime Lab provides all law enforcement agencies with forensic evidence examination and responds to crime scenes to recognize, collect, and evaluate physical evidence from criminal investigations. The OCCL has grown from a one-person operation in 1948 to its present day staff of 154 technical and support personnel.

The DNA section of the Crime Lab examines biological evidence left at crime scenes and develops DNA profiles for comparison to known suspects or comparison to known offenders in local, state and national DNA databases. The DNA section has also been active in examining old unsolved cases and is pioneering work recovering DNA in the area of touched or handled objects with no visible biological material.¹⁹

Specifically, the Crime Lab's DNA section provides the following laboratory services:

- Location, characterization and DNA profil-

¹⁸Potential revenue realized: 2,000 fees/samples per month x \$75 x 12 months = \$1.8 million annually (does not include myriad ancillary costs involved with prosecuting low-level, nonviolent crimes).

¹⁹http://ocsd.org/divisions/forensic_science/sections

ing of blood, semen, and other physiological materials.

- Searching for DNA profiles on items of evidence that were worn or handled by perpetrators and victims.
- Comparison of DNA profiles within and between cases locally and submission of eligible profiles to the state and national CODIS DNA databases for searching to link and solve crimes.
- Parentage determination for criminal cases.²⁰

The Orange County Crime Lab is equipped with state-of-the-art technology and instrumentation and is internationally accredited by the American Society of Crime Laboratory Directors / Laboratory Accreditation Board (ASCLD/LAB).

The management and technical operations of OCCL were last assessed in June 2008 and found to conform to all applicable requirements of International Standardizations Organization²¹ /International Electrotechnical Commission²² (ISO/IEC) 17025 and the ASCLD/LAB-International Supplemental Requirements. Thus, OCCL was found to be competent to provide forensic science testing services in accordance with the scope of accreditation identified for each laboratory.²³

Only an ASCLD-accredited laboratory can upload DNA profiles into CODIS, NDIS, and SDIS. On July 1, 2009, the latest revisions to guidelines

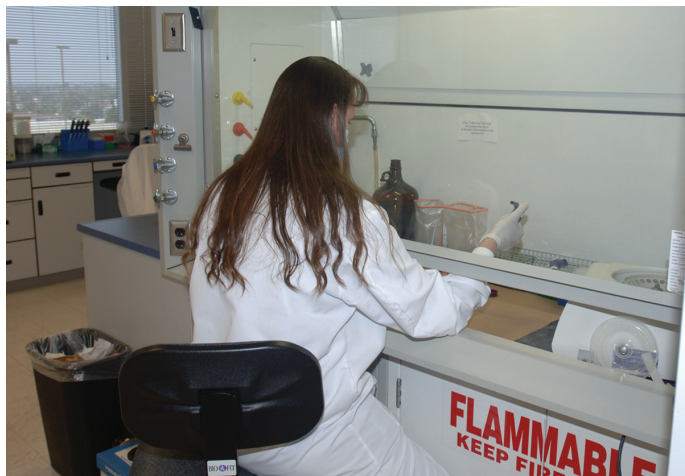
²⁰<http://www.occl.ocgov.com/Sections/DNA.aspx>

²¹When the large majority of products or services in a particular business or industry sector conform to International Standards, a state of industry-wide standardization exists. The economic stakeholders concerned agree on specifications and criteria to be applied consistently in the classification of materials, in the manufacture and supply of products, in testing and analysis, in terminology and in the provision of services. In this way, International Standards provide a framework, or a common technological language, between suppliers and their customers. This facilitates trade and the transfer of technology.

²²The IEC is the world's leading organization that prepares and publishes International Standards for all electrical, electronic and related technologies collectively known as electrotechnology. The IEC also manages conformity assessment systems that certify that equipment, systems or components conform to its International Standards.

²³http://www.asclcd-lab.org/cgi-bin/iso/csvsearch.pl?search=ALI-062-T&order_by=lab&order=abc

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took effect from the DNA Advisory Board (DAB): (1) Quality Assurance Standards for Forensic DNA Testing Laboratories, and (2) Quality Assurance Standards for DNA Databasing Laboratories. These are the minimum quality assurance standards that laboratories are required to follow in order to participate in the National DNA Index System (CODIS). There are no restrictions in the national guidelines that would prevent OCCL from creating a database line separate from CODIS, now or in the future, that could incorporate the OCDA's database. However, because the Orange County District Attorney has only a DNA profile database, not a laboratory, it cannot upload its samples into the national or state databases for matching. OCCL estimates that if it analyzed database samples and created a database line in its lab, it would need to purchase additional



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instrumentation and equipment, increase the number of DNA analysts and technicians, and increase the quantity of miscellaneous supplies purchased. Additionally, OCCL would have to validate the equipment and procedures and arrange for accreditation of the database line. OCCL estimates that at the present time it would cost more than \$25 to analyze each DNA sample from the OCDA's collection program.

To properly investigate possible duplication of effort and/or expense because there are two different DNA databases in two different locations, the Grand Jury has requested a cost analysis of the OCDA's DNA unit. As of April 26, 2010, this information has not been made available.

4.7 Management of the Orange County Crime Lab

Anecdotally, the Grand Jury heard reports from various interviewees that when the OCCL management structure changed in 2007-2008 (because of political unrest in the county), from being solely the Sheriff-Coroner's responsibility to shared management including the Sheriff, the District Attorney, and the County CEO, employee morale suffered at the Crime Lab. The Cooperating Department Head Structure is said to be "temporary," but no date has been established for changing it.

Further, in December 2009, the Director of the Crime Lab gave notice of his resignation, creating more uncertainty as to the long-term plan for management of the Crime Lab.

Despite the unsettled management structure and the recent loss of the lab director, the Crime Lab has been able to meet its overall goals of reducing backlogged DNA analyses and turnaround times while remaining the leader in submitting the largest number of DNA profiles and having the largest number of DNA cold hits than any other California crime lab.²⁴

²⁴Crime Lab Cooperating Department Head Structure report to Board of Supervisors, 2/9/10

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5. FINDINGS

Based on its investigation of "DNA: Whose Is It, Orange County Crime Lab's or the District Attorney's?" the 2009-2010 Orange County Grand Jury has arrived at the following findings:

- F.1: The Orange County Crime Lab and the Orange County District Attorney's DNA unit perform DNA collection services, which are similar yet different: OCCL collects forensic DNA from crime scenes and obtains felony suspect DNA samples, which can be uploaded into the national database (CODIS) and the state database (SDIS); the OCDA collects voluntary samples from low-level drug possession felony suspects and nonviolent misdemeanor suspects; those samples are not eligible for uploading into state or national databases.
- F.2: The OCCL and the OCDA each serves a different crime/criminal classification and the OCCL could not analyze the OCDA's samples for the same contracted price OCDA pays to Bode Technology Group, Inc. Possible duplication of operating expenses cannot be determined at this time because cost analysis information has not been provided by the OCDA's office.
- F.3: After nearly a decade (starting with the Innocent Review Panel), the OCDA's low-level, non-violent crimes DNA database is just beginning to realize its potential. Since November 2009, the database has had three independent hits and confirmed two previously identified suspects.
- F.4: Because of political unrest in the Sheriff's Department in 2007-08, the management structure of the Orange County Crime Lab changed from being solely the Sheriff's responsibility to a temporary shared management structure, known as the Cooperating Department Head Structure, composed of the Sheriff, the District Attorney, and the County CEO. Despite the unsettled man-

agement structure and the recent loss of the OCCL lab director, resulting in lowered morale, the crime lab has been able to meet its overall goals of reducing backlogged DNA requests and turnaround times while remaining the leader in submitting the largest number of DNA profiles and having the largest number of DNA cold hits than any other California crime lab.

Responses to Findings F.1, F.2, and F.3 are required from the Orange County District Attorney.

Responses to Finding F.4 are required from the Board of Supervisors, Sheriff-Coroner, District Attorney, and requested from County Executive Officer.

6. RECOMMENDATIONS

Based on its investigation of "DNA: Whose Is It, Orange County Crime Lab's or the District Attorney's?" the 2009-2010 Orange County Grand Jury makes the following recommendations:

- R.1: Keep the Crime Lab's database and the District Attorney's database separate until an audit can be conducted of the District Attorney's DNA unit. At this time, there appears to be no duplication of equipment and/or expenses involved with having two DNA databases since they serve very different populations of the criminal justice system.
- R.2: The County Internal Auditor should conduct an annual cost analysis as to what it would cost for the Orange County Crime Lab to analyze the DNA samples collected by the Orange County District Attorney that are now being sent to Bode Technology Group, Inc. of Virginia.
- R.3: Annually review the costs associated with collection, analysis, and uploading DNA profiles in the Orange County District Attorney's database with a view toward instituting or raising fees from individuals, cities, or any others who request access to the database.

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R.4: The County of Orange Internal Audit Department should review the District Attorney's DNA unit to determine the actual costs associated with this specialized unit, including the collection and processing of the DNA samples, and the operation and maintenance of the database, including updating of the software.

R.5: The management of the Orange County Crime Lab should revert to its prior status under the Orange County Sheriff-Coroner.

Responses to Recommendations R.1, R.2, and R.3 are required from the Orange County District Attorney.

Responses to Recommendations R.2, R.3, and R.4 are required from the County Internal Auditor.

Responses to Recommendation R.5 are required from the Board of Supervisors, Sheriff-Coroner, District Attorney, and County Executive Officer.

7. REQUIRED RESPONSES

The California Penal Code specifies the required permissible responses to the findings and recommendations contained in this report. The specific sections are quoted below:

California Penal Code §933.05:

“(a) For purposes of Subdivision (b) of Section 933, as to each grand jury finding, the responding person or entity shall indicate one of the following:

(1) The respondent agrees with the finding.

(2) The respondent disagrees wholly or partially with the finding, in which case the response shall specify the portion of the finding that is disputed and shall include an explanation of the reasons therefor.

(b) For purposes of subdivision (b) of Section 933, as to each grand jury recommendation, the responding person or entity shall report one of the following actions:

(1) The recommendation has been implemented, with a summary regarding the implemented action.

(2) The recommendation has not yet been implemented, but will be implemented in the future, with a timeframe for implementation.

(3) The recommendation requires further analysis, with an explanation and the scope and parameters of an analysis or study, and a timeframe for the matter to be prepared for discussion by the officer or head of the agency or department being investigated or reviewed, including the governing body of the public agency when applicable. This timeframe shall not exceed six months from the date of publication of the grand jury report.

(4) The recommendation will not be implemented because it is not warranted or is not reasonable, with an explanation therefor.”