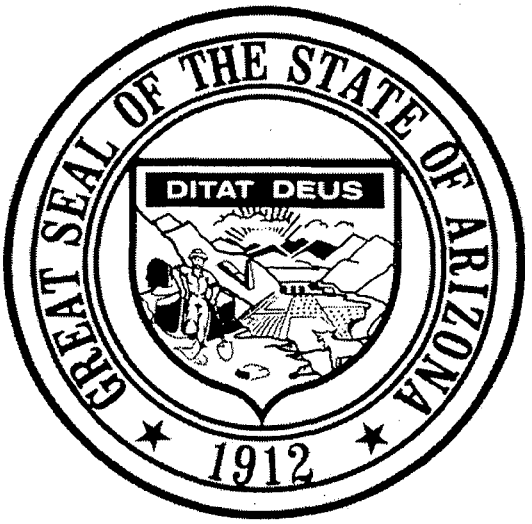
# ARIZONA DNA AND FORENSIC SCIENCE RECOMMENDATIONS




**OFFICE OF THE ATTORNEY GENERAL**
**TERRY GODDARD**

**2007**

## I. Introduction

Extraordinary developments in DNA technology over the past several years have dramatically increased the available pool of evidence that can be subjected to DNA testing. This increasing volume of evidence, together with expanded databases containing identifying information from convicted felons, has created a tremendous resource for law enforcement to help solve crimes and to protect the innocent. These improvements in DNA technology have created a need to reevaluate how crime labs operate and whether state and local policies and procedures take advantage of this technology.

Although crime laboratories in Arizona are generally held in high regard, the available resources for labs throughout the state have not kept pace with the increased demand for DNA services. Additionally, state-wide improvements in DNA lab operations are difficult to effectuate because there is no mechanism in place to ensure a cohesive state-wide approach to processing DNA evidence. Some laboratories in Arizona are owned and operated by the state, while others are owned and operated by city police departments. Because the various laboratories do not share a common funding source or a common supervising agency, there is a need for better coordination of efforts among the labs and for more uniform policies regarding information sharing.

Arizona Attorney General Terry Goddard invited representatives from state and city crime laboratories, the Maricopa County Medical Examiner's Office, local law enforcement departments, the prosecution and defense community, the judiciary, and victims' advocacy groups to participate in a state-wide DNA and Forensic Technology Task Force.[1] The group was asked to consider concerns raised in previous audits of state and local laboratories, including backlogs and funding problems, as well as other issues, such as information and equipment sharing among state and local laboratories, and statewide coordination of efforts to ensure that Arizona takes advantage of available funding for state and local DNA programs.

Based on recommendations from the Task Force, Attorney General Goddard recommends that a permanent state-wide Forensic Services Advisory Committee be established under the auspices of the Attorney General's Office, with support from the Arizona Criminal Justice Commission (ACJC), to facilitate statewide planning and coordination of efforts among state and local laboratories. ACJC is a legislatively created entity charged with helping coordinate criminal justice systems improvements throughout the state; ACJC currently helps coordinate meetings of laboratory directors and assists some of the laboratories with grant requests.

The Advisory Committee should include representatives of law enforcement agencies that currently operate laboratories, as well as law enforcement agencies that do not have their own laboratories. Additional committee members, as outlined in Appendix B, should include laboratory directors, a representative of an organization representing victims' families, a retired Superior Court or Appellate Court judge, and a forensic

[1] Task Force members are listed in Appendix A.

scientist from a national organization such as the American Society of Crime Lab Directors or the National Forensic Science Technology Center. A Chairperson should be appointed to a two-year term.

Attorney General Goddard recommends that the proposed Forensic Services Advisory Committee be given authority to establish and monitor performance measures and to work with lab directors to coordinate long-term planning, including equipment sharing and specialization by state and local laboratories. The Advisory Committee should also be given authority to consider and address questions or concerns from law enforcement agencies that do not have their own crime lab and from the public regarding lab operations.

## II. Background – A History of DNA Processing in Arizona

There are eight full-service forensic laboratories that process DNA evidence in Arizona. The Arizona Department of Public Safety currently operates four state forensic laboratories. Additionally, the cities of Phoenix, Tucson, Mesa and Scottsdale have their own forensic labs operated under the direction of the police departments in those cities. The Maricopa County Medical Examiner operates a forensic laboratory but does not process DNA. All of the state and local crime laboratories in Arizona are accredited.

The supervision of forensic laboratories around the state is not centralized. Because state and local labs have different funding sources, they are accountable to different supervisory entities and are operated independently. State labs are authorized to perform services for any state or local law enforcement agency in the state; city labs generally focus on the needs of their own city law enforcement agencies, although they may also provide assistance to other jurisdictions that do not have crime labs.

Arizona's system of DNA processing is similar to that in place in many other states. (See Appendix C.) Almost all states have state-operated laboratories, either under the direction of the Governor's Office or the Attorney General's Office, and many states also have local laboratories operating under the direction of local law enforcement agencies. Twenty-eight states have one agency that supervises all laboratories within the state. Four states have placed operation and control of all laboratories under the supervision of one state agency independent from law enforcement. Other states use organizations similar to ACJC to coordinate crime lab operations. Several states have created or are considering DNA commissions or task forces to address DNA issues and to facilitate state-wide coordination of efforts. Many states do not have any formal mechanism for addressing state-wide concerns.

## III. The Need for State-Wide Coordination of Efforts

### *A. Funding Issues*

The development of crime laboratories throughout the state does not reflect a systematic analysis of regional needs and priorities. The creation of local labs in various

cities throughout the state resulted from inadequacies in funding for DPS labs, coupled with a need for localized services for individual law enforcement agencies. This has created a patchwork system of DNA processing in which procedures vary from city to city within otherwise homogenous regional areas. Because the various laboratories have different funding sources and are thus answerable to different agencies, state-wide coordination of efforts can be problematic.

Increasingly sophisticated (and costly) equipment, together with an increased capability to evaluate smaller evidence samples, has heightened the need for cooperation among the various labs. The geographic proximity of multiple law enforcement agencies makes inter-agency cooperation essential in solving crimes and providing necessary laboratory services. State and local laboratories should work together to create short-term and long-term planning goals to better meet the forensic science needs of the state. Of particular significance are funding needs—the current framework may result in funding decisions by cities independent from state funding decisions for overlapping services. Additionally, the labs compete at times against one another for federal funding, and if one lab does not expend awarded federal funds, the total allotment to the state can be reduced. Centralized planning for funding would help prevent such problems.

### *B. Performance Measures*

In the past, the various labs have used different performance measures and different methods for assessing case backlogs. Greater uniformity in both areas is necessary to measure results and provide documentation necessary to qualify for available grant monies. Greater uniformity would also help ensure that state and local monies are well-spent, and would give better context to laboratory funding requests.

### *C. Grant Requests*

Greater coordination of efforts by state and local laboratories, as well as state and local law enforcement agencies, is necessary to ensure that Arizona takes advantage of grants available from the federal government. Federal grant monies for forensic science laboratories are increasingly tied to statewide requirements for processing DNA and preserving biological evidence. The proposed Advisory Committee would work with the various laboratories and with the Arizona Legislature to take steps needed to ensure compliance with federal mandates tied to grant funding, where such compliance is consistent with public policy in Arizona.

### *D. Backlog Reduction*

Backlog concerns relating to offender profiles and case processing have prevented Arizona from taking full advantage of available DNA technology.

(1) Offender Profiles

The development and expansion of databases that contain DNA profiles at the local, state and national levels have greatly enhanced law enforcement's ability to use DNA to solve cold cases and current, unsolved cases. Convicted offender databases store hundreds of thousands of potential suspect DNA profiles, against which DNA profiles developed from crime scene evidence can be compared. DNA profiles entered into the national database have enabled law enforcement to solve previously unsolved crimes and, in some cases, to exonerate prisoners who were wrongly convicted of a crime.

In Arizona, the state DPS laboratories are responsible for processing convicted offender samples for inclusion in state and national databases. Since 1993, convicted sex offenders in Arizona have been required to provide DNA samples (generally swabs taken from the inside of the mouth) to law enforcement officers. Burglars and murderers were added to the list in 2000; drug offenders were added in 2003; and as of January 1, 2004, all felons were required to submit a sample within 30 days of sentencing. As of January 1, 2008, suspects arrested for specific crimes, primarily violent offenses and dangerous crimes against children, will be required, pursuant to A.R.S. § 13-610(K), to submit DNA samples.[2] The expanded categories of individuals required to submit DNA samples have significantly taxed the state's ability to analyze the samples and enter the profiles into the national database. Although a significant percentage of available DNA samples have been analyzed and entered into the system, thousands of samples have yet to be analyzed and entered into the DNA database by DPS. The proposed Forensic Services Advisory Committee would work with DPS to ensure that adequate funds are secured to eliminate the offender profile backlog.[3]

(2) Case Processing

Case backlogs reflect pending investigations involving DNA evidence that has yet to be analyzed and entered into state and national DNA databases. Backlogs hinder investigations, particularly in cases in which there is no known suspect, because laboratories must prioritize their work, with cases scheduled for trial given first priority. When state and local laboratories are only able to process the most serious pending cases

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[2] A person who is required to submit a sample based on an arrest for a specified crime under A.R.S. § 13-610(K) may, if charges are dropped or if subsequently acquitted of the charges, petition the superior court in the appropriate county to have his or her DNA profile and sample expunged from the state DNA system. A.R.S. § 13-601(M).

[3] The legislation expanding the database to include arrestee DNA profiles includes a funding mechanism—an additional assessment to be levied on every fine, penalty and forfeiture imposed and collected by the courts for criminal offenses and on any civil penalty imposed for a violation of Motor Vehicle or Fish and Game statutes. A.R.S. § 12-116.01

involving known suspects, crimes that could be solved remain on hold. Backlogs prevent law enforcement officers from taking advantage of improved DNA technology to solve not only sexual assault cases and cases involving blood evidence, but also other types of cases where there may be evidence such as saliva, skin cells or hair samples. Given high recidivism rates for many types of criminals, such as burglars, a decrease in case backlogs will not only solve crime, it will help prevent other crimes from being committed.

State and local laboratories in Arizona have historically used different measures in providing backlog data. This lack of uniformity in measuring backlogs has made it difficult to assess the severity of the backlog problem and the effectiveness of any remedial measures that may be taken. Task Force participants have agreed on a more uniform method of measuring backlogs, and the proposed Forensic Services Advisory Committee should monitor and assess backlog concerns at the various labs throughout the state. The Advisory Committee should work with the laboratories to make backlog reduction a priority and to help secure additional funding, where necessary, to eliminate backlogs.

## IV. Transparency and Accountability

Although processes are in place at the local level to investigate complaints against laboratories, there is currently no central independent agency or entity to which the general public can address questions relating to perceived problems at a state or local laboratory. The proposed Forensic Services Advisory Committee would fill this void and establish a mechanism for addressing questions and/or complaints from the public relating to laboratory operations.

State and local laboratories are accredited by the American Society of Crime Laboratory Directors-Laboratory Accreditation Board (ASCLD-LAB), and all of Arizona's full-service crime labs have received this accreditation. To be accredited, laboratories must meet a comprehensive series of standards covering personnel qualifications, scientific methods and protocols, scientific equipment, laboratory facilities and quality control/assurance procedures. Additionally, all DNA Labs in Arizona are members of Combined DNA Index System (CODIS), and must comply with the Quality Assurance Standards for Forensic DNA Testing Laboratories, as a condition of membership.

Crime Labs undergo yearly facility audits and external audits. Additionally, the National Forensic Science Technology Center (NFSTC) conducts periodic Grant Program Assessment (GPA) audits, and all of the Arizona crime labs underwent such an assessment during 2007.

Arizona has thus far avoided issues of severe laboratory mismanagement and other crises that have plagued some states. *See e.g.* Fourth Report of the Independent Investigator for the Houston Police Department of Crime Laboratory and Property Room, http://www/hpdlabinvestigaton.org. However, Arizona's laboratories face hurdles and

challenges that could lead to problems in the future, and there is a need for greater transparency and accountability relating to laboratory operations.

The proposed Forensic Sciences Advisory Committee should review and monitor the results of audits and/or investigations of Arizona's Crime Laboratories, and should work with the various laboratories to ensure that adequate funding sources are secured to ensure high quality laboratory operations.

## V. Expanding the State DNA Database and Sharing Information Among State and Local Laboratories

Task Force members addressed several legal issues relating to the use of DNA evidence as an investigative and evidentiary tool. Of particular interest was whether the statewide DNA database should be expanded to include DNA profiles from all arrestees, and whether lawfully obtained profiles available to one law enforcement agency should be made available to other law enforcement agencies. Based on Task Force recommendations, Attorney General Goddard recommends further study and discussion before seeking to expand the statewide database. Attorney General Goddard recommends, however, that lawfully-obtained DNA profiles be shared among the various law enforcement agencies throughout the state.

### *A. Expanding the State Database*

DNA profiles are stored and searched at three levels. The Combined DNA Index System (CODIS) is a computer network that connects forensic DNA laboratories at the national, state, and local levels. The National DNA Act of 1994 specifies that the following types of information can be put into the national system (NDIS):

1. DNA identification records of persons convicted of crimes;
2. Analyses of DNA samples recovered from crime scenes;
3. Analyses of DNA samples recovered from unidentified human remains;
4. Analyses of DNA samples voluntarily contributed from relatives of missing persons.

Under federal law, DNA profiles of *suspects* may not be stored in NDIS. Although state and local labs are bound by federal law and regulations in determining the categories of DNA data that may be uploaded into NDIS, state and local labs may look to state law and state regulations to determine what may be stored and searched at the state level. States may choose to store and search information that cannot be stored and searched at the national level. Several states, in addition to Arizona, have chosen to include some types of arrestee DNA profiles in their state databases. *See, e.g.* Cal. Penal Code § 296, 297, La. Rev. Stat. Ann. § 15:609, Tex. Gov't Code Ann. § 411.1471, Va. Code Ann. § 19.2-310.2:1.

As noted previously, Arizona began collecting DNA samples from convicted sex offenders in 1993. The expansion of the database has greatly increased its utility. The expansion of the database to include all felons was particularly significant because of the high percentage of felony offenders who engage in other criminal activity. Criminals rarely limit themselves to one crime, and an expanded database that includes all felons is an important tool for solving crime and preventing future crimes.

Because of the continuing backlog of offender profiles that have yet to be entered into the state and national systems, Arizona has not taken full advantage of the expanded database. Until the backlog has been eliminated, there is little utility in further expanding the state database.

Task Force members did not reach a consensus on whether consideration should be given to expanding the state database to include all persons who have been arrested for a crime, but who do not fall within A.R.S. § 13-610(K). Those who disagreed with expanding the database cited privacy issues and a concern that such a database would unfairly affect individuals who are improperly arrested for a crime they did not commit. Task Force members who favored an expansion to an all-arrestee database noted that fingerprints are currently taken from all people arrested of a crime, and that the fingerprints become part of a database regardless whether the individual is ultimately convicted of a crime. Because a DNA profile, like a fingerprint profile, simply identifies an individual without providing any other information about the person, the DNA profile should be treated the same as a fingerprint profile.

Task Force members who favor an all-arrestee database acknowledged a need to increase public confidence that privacy concerns have been properly addressed. Although a DNA profile (which is essentially a string of numbers) does not contain any type of information that could be used to learn about the person's medical or genetic history, the sample from which the profile was derived could be used for that purpose. Crime labs should continue their current practice of keeping DNA samples separate from identifying information relating to the person from whom the sample was obtained, and should ensure that there are institutional safeguards in place to preclude the use of DNA samples for anything beyond providing an identifying profile.

### *B. Sharing Information*

There is no current statewide policy concerning the use of lawfully obtained DNA profiles, in particular with regard to whether DNA profiles may be shared with law enforcement agencies throughout the state when the profile has been obtained from a suspect who has not previously been convicted of a crime. Currently, that information is used within the agency that obtained the profile, but is not being shared with other agencies throughout the state.

The current practice of limiting a sample's use to the agency that obtained the profile limits the utility of the sample. If, for example, the Phoenix Police Department has a legally-obtained sample from a suspect in a crime committed in Phoenix, that

sample is available to the Phoenix Police Department through its crime lab for other investigations within the city. If, however, the Mesa Police Department is investigating a similar crime committed in Mesa, the lawfully obtained sample kept in the Phoenix laboratory is not made available to the Mesa Police Department unless the sample is one that is required to be placed in the statewide database.

Arizona courts have not addressed the propriety of sharing this type of information among state and local law enforcement agencies. However, decisions from other states have upheld the use of DNA profiles from arrestees or suspects in investigating unrelated case. *See Smith v. State*, 744 N.E.2d 437 (Ind. 2001) (holding that there is no statutory impediment to storing DNA profile records of an arrestee in Indiana whose DNA was lawfully seized); *Washington v. State*, 653 So. 2d 362 (Fla. 1995) (DNA samples lawfully taken from a suspect can be used to investigate an unrelated case); *Bickley v. State*, 489 S.E.2d 167 (Ga. Ct. App. 1997); *Wilson v. State*, 752 A.2d 1250 (Md. Ct. Spec. App. 2000); *People v. King*, 232 A.D. 2d 111 (N.Y. App. Div. 1997).

State and local crime laboratories have been reluctant to share such information based on perceived liability issues related to privacy concerns. Those privacy concerns, however, appear to be unwarranted. As previously noted, although a DNA sample may be used to obtain personal information relating to a person's genetic make-up or disease potential, a forensic DNA profile is simply a series of numbers, and like a fingerprint, is only useful for identification purposes. Use of a DNA profile is thus comparable to use of a fingerprint profile and does not implicate privacy concerns beyond those present in compiling a fingerprint database.

Attempts to deal with problems such as terrorism and crime on a national level have highlighted the need for inter-agency sharing of information. Given the overlapping jurisdiction of state and local laboratories, and given the proximity in location from one city to the next in Arizona, cooperation and sharing of information among the various law enforcement agencies within the state is critical. Information that is available to law enforcement officers within one Arizona jurisdiction should be made available to other jurisdictions within the state. Accordingly, if a DNA sample has been lawfully obtained, either from a crime scene or by consent or court order, the profile derived from the sample should be made available to other law enforcement agencies.

## RECOMMENDATIONS

A statewide Forensic Services Advisory Committee should be formed under the auspices of the Arizona Attorney General and the Arizona Criminal Justice Commission to establish and monitor performance measures among state and local laboratories, to develop a more uniform system of reporting data, and to work with laboratory directors to coordinate long-term regional and statewide planning, including equipment sharing and regional specialization by state and local laboratories. The advisory committee should also be given authority to consider and address questions or concerns from law enforcement and the public regarding lab operations.

State and local laboratories should share lawfully obtained DNA profiles with other state and local laboratories. If a DNA sample has been lawfully obtained, either from the crime scene or by consent or court order, the profile derived from the sample should be made available to other law enforcement agencies.

**Appendix A** – Members of the Arizona Attorney General's Task Force

Bill V. Amato, Maricopa County Attorney's Office
Senator Timothy S. Bee, Senate Majority Leader
John A. Blackburn, Jr., Arizona Criminal Justice Commission
John Blackburn, Sr., Ph.d., Special Assistant County Attorney
The Honorable Bill Brotherton, Arizona State Senator
Dennis Burke, Office of the Governor
Kent E. Cattani, Office of the Attorney General, Chief Counsel, Capital Litigation
Edwin Cook, Executive Director, Arizona Prosecuting Attorney's Advisory Counsel
Dennis L. Donna, Mesa Police Department Chief of Police
Debra Figarelli, DNA Technical Manager / Phoenix PDL Laboratory Services Bureau
Steve Gallardo, Member, Arizona House of Representatives
Steve Garrett, Forensic Services Division Manager / Scottsdale Police Department
Todd A. Griffith, Superintendent, AZ DPS, Scientific Analysis Bureau
Tom Hammarstrom, Executive Director, AZ Post
Gerald E. Hardt, Program Manager/ Criminal Justice Records, AZ Criminal Justice
Ann E. Harwood, First Assistant U.S. Attorney
Mark Huntzinger, Forensic Division Commander; Tucson Police Department
Philip Keen, M.D., Maricopa County Chief Medical Examiner
Ron Kirby, Commander, Mesa Police Department, Technical Services Department
Thomas V. Lannon, Assistant Police Chief; Phoenix Police Department
Joyce K. Lee, Forensic Services Administrator, Mesa Police Department
Paul McMurdie, Maricopa County Attorney's Office
Robert D. Myers, Legal Counsel for the Arizona Department of Corrections
Cindi Nannetti, Maricopa County Attorney's Office
Susan D. Narveson, NIJ/OST Senior Program Manager
Pat Nelson, Records Program Coordinator / Criminal Justice Records, AZ Criminal
Richard Platt, Chief Criminal Deputy; Pinal County Attorney's Office
The Honorable Ronald S. Reinstein, Maricopa County Superior Court
Micah Schmit, Pima County Deputy Attorney, SVU
John Stookey, Defense Counsel, Osborne Maledon, PA
Jan Strauss, Office of the Attorney General, Law Enforcement Liaison

**Appendix B** – Proposed Members of Forensic Sciences Advisory Committee

1. The Attorney General or the Attorney General's designee
2. The Director of Arizona Criminal Justice Commission or the Director's designee
3. The Director of the Department of Public Safety or the Director's designee
4. Lab directors or their designees from all state and local forensic laboratories
5. The Police Chief or the Chief's designee of municipalities that operate a forensic laboratory
6. One Police Chief or the Chief's designee from a municipality with a population over 200,000 that does not have a forensic laboratory
7. One Police Chief or the Chief's designee from a municipality with a population of 200,000 or less that does not operate a forensic laboratory
8. One County Sheriff and one County Attorney from a county with a population of four hundred thousand persons or more
9. One County Sheriff and one County Attorney from a county with a population of less than four hundred thousand persons
10. A representative of an organization representing victims' families
11. A retired Superior Court or Appellate Court Judge
12. A Forensic Scientist from a national organization such as the American Society of Crime Lab Directors (ASCLD) or the National Forensic Science Technology Center (NFSTC)

NO DEFENSE COUNSEL

**Appendix C** – Crime Laboratory Supervision in the United States

*States With More Than One Supervising Agency for Laboratories*

| State | Laboratories |
|---|---|
| Arizona | 1 state, 4 local |
| California | 1 state, 15 local |
| Colorado | 1 state, 1 local |
| Florida | 1 state, 4 local |
| Illinois | 1 state, 2 local |
| Indiana | 1 state, 1 local |
| Kansas | 1 state, 2 local |
| Louisiana | 1 state, 4 local |
| Maryland | 1 state, 5 local |
| Massachusetts | 1 state, 1 local |
| Michigan | 1 state, 1 local |
| Minnesota | 1 state, 1 local |
| Missouri | 1 state, 5 local |
| Nevada | 2 local |
| New Mexico | 1 state, 1 local |
| New York | 2 state, 6 local |
| North Carolina* | 1 state, 1 local |
| Ohio | 1 state, 6 local |
| Oklahoma | 1 state, 1 local |
| Pennsylvania | 1 state, 2 local |
| South Carolina | 2 local |
| Texas | 2 state, 7 local |

*States With One Supervising Agency For All Laboratories in the State*

| State | Supervising Entity |
|---|---|
| Alaska | Law Enforcement |
| Alabama | Independent |
| Arkansas | Independent |
| Connecticut | Law Enforcement |
| Delaware | Law Enforcement |
| Georgia | Independent |
| Hawaii | Law Enforcement |
| Idaho | Law Enforcement |
| Iowa | Law Enforcement |
| Kentucky | Law Enforcement |
| Maine | Law Enforcement |
| Mississippi | Law Enforcement |
| Montana* | Law Enforcement |
| Nebraska | Law Enforcement |
| New Hampshire | Law Enforcement |
| New Jersey | Law Enforcement |
| North Dakota* | Law Enforcement |
| Oregon | Law Enforcement |
| Rhode Island | Law Enforcement |
| South Dakota* | Law Enforcement |
| Tennessee | Law Enforcement |
| Utah | Law Enforcement |
| Vermont | Law Enforcement |
| Virginia | Independent |
| Washington | Law Enforcement |
| West Virginia | Law Enforcement |
| Wisconsin* | Law Enforcement |
| Wyoming | Law Enforcement |

* State laboratories supervised by the State Attorney General

# COLD CASE TASK FORCE

*A Report to the Governor and the Arizona State Legislature*

**December 28, 2007**

# Cold Case Task Force:
# Collection and Preservation of Evidence

Once the initial investigation performed by law enforcement investigators has begun, there are three additional functions which are essential to the proper collection, preservation, and examination of the evidence. These three functions are: Crime Scene Processing, Medical Examiners investigation and Crime Laboratory examination.

**Crime Scene Processing**

In Arizona the processing of Crime Scenes varies greatly depending on the size and requirements of an individual law enforcement agency. This is described as follows:

- Experienced criminal investigators are relied upon exclusively by some agencies to collect and preserve all crime scene evidence.
- Evidence personnel are used by some agencies (often one or two individuals for smaller agencies) to perform a variety of related evidence functions, including: crime scene collection and preservation; latent print development; evidence storage; and evidence transportation to the crime laboratory.
- Crime scene technicians have been established by certain agencies (usually larger metropolitan agencies) to have the responsibility for preserving and collecting all types of evidence related to crimes and crime scenes.

It is obvious that proper collection and preservation of evidence is not only essential to completing the immediate crime under investigation, but also essential to solving cold cases at a later date. This is particularly important as advances in Forensic Science bring new techniques to bear on analyzing evidence and improve existing techniques allowing the identification of microscopic amounts of material previously undetectable. Evidence previously determined to have no value in solving a criminal case at the time of investigation, many years later, yield forensic analysis results solving the crime which had become a cold case.

In order to assess evidence collection and preservation in Arizona, the subcommittee first examined the current status of policies and procedures, training and expertise among the various individuals performing crime scene evidence processing.

*Crime Scene Processing By Experienced Criminal Investigators*

For law enforcement investigators, particularly homicide investigators, it was found that the most common form of training and competency development was in essence, an apprenticeship. This time honored method has produced many excellent homicide investigators who have solved many cases and is relied upon by law enforcement agencies from the smallest to the largest.

Under an apprenticeship program, a new homicide investigator is paired with an experienced investigator and learns the methods of handling, preserving and collecting evidence. This is a real world approach to training and, in addition, the Arizona Homicide Investigators Association (AHIA) provides regular training in a variety of areas, including evidence handling, collection, preservation, etc. In fact, AHIA Conference agendas, since 2004, reflect a number of classes and presentations that

provide specific training in areas such as new technologies in crime scene investigation, video and audio evidence preservation, mass fatality scene management, death by fire, evidence collection, blood spatter interpretation, crime scene reconstruction and real-world homicide case studies. Also, there are numerous references available providing excellent information and guidance for collecting, handling and processing evidence such as the *NIJ Cold Case Toolkit; the NIJ Special Report, Using DNA to Solve Cold Cases; the FBI Handbook of Forensic Services*; etc. However, these approaches to evidence processing capabilities do not assure that all individuals have the necessary competency, training and experience to handle all evidence in the best manner, particularly when it comes to the long term storage of evidence in cold cases. There exist in Arizona experienced homicide investigators who have the very best capabilities when it comes to evidence processing, but this is not necessarily true of all investigators.

*Crime Scene Processing By Evidence Personnel*

Evidence personnel, who provide a variety of evidence functions including collecting, handling and preserving evidence, obtain instruction from a range of sources. Some have apprenticed under an experienced homicide investigator, some have apprenticed under another evidence technician, some have learned by taking classes and reviewing available documents such as those mentioned previously as resources for investigators. These evidence personnel run the gamut from highly trained, experienced and capable to those placed in the function with little or no training or experience. Although these individuals have access to training and evidence processing guidelines, there is not an equivalent organization such as the Homicide Investigators Association for these individuals. The closest professional organization for evidence personnel is the International Association for Identification. This organization's primary emphasis is latent print training and certification, but it does have crime scene training courses taught by private contractors. Available courses include Fundamentals of Crime Scene Investigation and Evidence Collection; Finding Latent Print Evidence with Chemistry and Light; and Collection, Documentation and Preservation of Footwear and Tire Track Evidence. Also, an Arizona Association for Property and Evidence currently functions in Arizona, but its main focus is evidence room procedures, not evidence collection and preservation.

*Crime Scene Processing By Crime Scene Technicians*

Crime Scene Technicians receive structured training through classroom instruction and field exercises. Training manuals and crime scene handbooks are utilized to assure appropriate capability is developed and competency maintained.

A typical crime scene training program includes:

- Crime scene safety
- Legal requirements
- Crime scene search principles
- Crime scene photography
- Evidence recognition
- Use of alternate light sources
- Biological evidence
- Bloodstain pattern recognition

- Fingerprint development, processing and collection
- Firearms evidence
- Impression evidence such as footwear, tire tread and casting of impressions
- Trace material recovery, including glass, plastics, paint, hairs, fibers, etc
- Sex assault investigations
- Packaging and preservation of evidence
- Mock crime scenes
- Practical exercises
- Competency tests (both practical and written)

These comprehensive structured programs are typically handled by the larger Arizona police agencies such as Phoenix PD, Tucson PD, Scottsdale PD, Mesa PD, Glendale PD, etc. These programs assure that adequate training is provided and that competency is attained to properly preserve and collect all types of evidence.

**Recommendations for Crime Scene Processing**

Currently in Arizona, each independent police agency is responsible for the level of crime scene/evidence processing capabilities in that agency. However, there are resources available to augment an agency's crime scene/evidence processing capabilities if the need arises. For example, Sheriff's Offices may provide assistance to a smaller county police department that needs assistance. In the same fashion the Department of Public Safety can provide assistance through its Special Investigations Unit (which can take over complete responsibility for the scene) or through its Crime Laboratory, which can provide forensic scene experts in specific fields such as DNA, Latent Prints, Explosives, etc.

Arizona agencies have a history of coordinating these types of joint assistance but additional steps could be taken to enhance the level of crime scene/evidence processing capabilities in Arizona. It is essential that those individuals tasked with processing crime scenes and criminal evidence have the proper training and have demonstrated competency in evidence handling, collection and preservation. Also, these individuals need regular continuing education as forensic science capabilities expand and change. Therefore, a range of recommendations include:

- Expand community college Associates Degree programs in crime scene evidence processing to provide training and expertise for all agencies in Arizona.

- Develop a mechanism to assure that all individuals processing crime scene evidence meets minimum training standards and competency tests. This mechanism would require technical expertise and funding to develop and operate the program. The program could be placed under the Peace Officer Standards and Training Agency (POST) with technical assistance from the Arizona Homicide Investigators Association and/or the DPS Crime Lab or placed at the Department of Public Safety under the auspices of its Crime Laboratory System. The program would need to combine

various components such as crime scene unit accreditation (which has recently become available); a law enforcement academy program for officers, technicians, etc., who do not have an accreditation program available: etc. This program would require Legislative funding to implement.

- Establish Crime Scene Technician Units at each of the four DPS Regional Crime Laboratories to provide trained, competent Crime Scene Technicians to those agencies throughout Arizona that do not have the resources to maintain this expertise. This would require legislative funding to implement a new program.

**Medical Examiner's Investigation**

The Medical Examiner function in Arizona is a County responsibility and the processing of homicides is handled by each Medical Examiners Office or contracted to a separate County that has additional capacity or expertise. Currently, a number of Counties contract out the medical examination of homicides. As of the writing of this report, the Pima County Medical Examiners Office provides services to several Counties, while five Counties process their own homicide investigations. The Medical Examiners function for homicides are as follows:

- The Pima County Medical Examiners Office processes homicides in ten Counties: Pima, Apache, Gila, Graham, Greenlee, La Paz, Navajo, Pinal, Santa Cruz and Yuma.
- The Medical Examiners Offices in the following five Counties process the homicides in that county: Maricopa, Cochise, Coconino, Mohave and Yavapai.

While examining the current status of evidence collection and preservation at Medical Examiners Offices in Arizona, it was found that policies, procedures and training varied. All Medical Examiners in Arizona received their training through medical fellowships studying with experienced physicians in various locations throughout the United States. Each Medical Examiners Program/Office performing the fellowship training taught evidence collection to their own individual specifications, with collection ranging from minimal collection on most homicides to all collection on every homicide.

Medical Examiners are required by their board certifications to undergo regular continuing education which can be obtained from a number of recognized medical education resources. In addition, the National Association of Medical Examiners (NAME) and the American Academy of Forensic Science (AAFS), provides association meetings and various training opportunities.

The review of Arizona Medical Examiners also revealed that Medical Examiners adjust their evidence collection and preservation techniques based upon input from Law Enforcement Investigators, Technicians and Crime Lab Scientists. Through this mechanism, Medical Examiners seek to maximize the effectiveness of evidence collection for solving current and cold case homicides. However, as of this report, only one County in Arizona had a written evidence collection procedure manual, and it has not been revised for several years.

**Recommendations for Medical Examiner's Investigation**

Medical Examiners Offices have a history of working cooperatively with Police Homicide Investigators and Crime Lab Scientists, but enhanced capabilities could be achieved in Arizona. A number of recommendations for enhancement include the following:

- Develop a statewide advisory committee to assure that Medical Examiners have minimum training standards and competency in the collection and preservation of evidence. This advisory committee could include; Arizona Medical Examiners and representation from a national organization such as NAME and/or AAFS.

- Consider the implementation of a statewide Medical Examiner's Office for all fifteen (15) counties. This would bring all policies, procedures, training and competency under one state agency where standards could be mandated. This would require Legislative action and sufficient funding to provide effective Medical Examiner services to all fifteen Counties.

- Consider legislation that would require all medical examiner offices in the state of Arizona to collect a DNA sample from all bodies that fall under the jurisdiction of the Medical Examiners Office and are physically examined by a medical examiner. This DNA sample shall be kept for a period of 99 years. The DNA sample shall only be released to law enforcement, another entity by permission from the next of kin or by court order.

- Establish regular meetings of Medical Examiners and Crime Lab scientists to coordinate evidence collection and implementation of the latest collection and preservation techniques. As Crime Lab Scientific capabilities continue to improve and expand, evidence collection requirements must be updated, and new state-of-the-art scientific techniques often result in significant changes regarding evidence handling, collection and preservation. These coordination meetings can be implemented through the newly established Forensic Services Advisory Committee, established under the auspices Attorney General's Office which includes all eight full service Crime Labs in Arizona - four DPS Regional Labs and four City Labs: Phoenix, Tucson, Mesa and Scottsdale. See attachment C.

**Crime Laboratory Examination**

Crime Laboratory services are currently provided in Arizona by eight full service laboratories. The Arizona Department of Public Safety, by statute, provides forensic science services to all State, County and Local Law Enforcement Agencies. These

services provide all forensic science specialties including: DNA and Forensic Biology; Toxicology (drugs in biological specimens); Alcohol determinations (both breath and blood); Controlled Substances (analysis of illegal drugs); Latent Fingerprint processing and identification; Firearms and Toolmarks examination; Footwear and Tire Tread impression identification; Questioned Document examination; Explosives and Arson debris analysis; Hair and Fiber identification: Trace Material examination (paint, plastic, glass, soil, etc.).

In addition, DPS is one, of only four, government labs nationwide to be a partner Lab with the FBI and provide additional specialized state-of-the-art DNA services, Mitochondrial DNA. DPS provides forensic science services from Regional Laboratories in Phoenix, Tucson, Flagstaff and Lake Havasu City.

Four cities provide forensic services to their city Police Departments and these are Phoenix, Tucson, Mesa, and Scottsdale. Services vary from full service to partial services. All four cities provide core services such as DNA, Alcohol, Controlled Substances, Latent Prints, Firearms and Toolmarks, etc. DPS augments those services by providing additional forensic science specialties to the cities such as, Toxicology, Trace Material analysis etc.

An examination of evidence collection, preservation, handling and analysis, shows a fundamentally standard set of policies, procedures, training and competency among Arizona's Crime Laboratories. This is because all eight Arizona Crime Laboratories are accredited, undergoing an extensive accreditation process from the American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB), which functions under the umbrella of the International Standard Organization (ISO). Also, DPS, Phoenix, Tucson, Mesa and Scottsdale are part of the national Combined DNA Index System (CODIS) and, as such, must follow the Quality Assurance Standards for DNA Testing Laboratories originally promulgated by the National DNA Advisory Board and now issued by the Director of the FBI.

Both ASCLD/LAB accreditation and CODIS requirements have extensive standards regarding evidence collection, handling, preservation and analysis. In order to meet these standards each Lab has written procedures regarding evidence. Typical procedures include sections on:

- Biological evidence description/definition, including blood, urine, saliva, semen, tissue, etc.
- Evidence preservation: refrigerated, frozen, etc.
- Handling of biological evidence to avoid contamination including use of gloves, etc.
- Biological evidence and biohazard/safety procedures
- Packaging of evidence including separation and isolation of items, drying of stains, etc.
- Special handling items such as sex assault kits, blood collection kits, etc.

As a result of the accreditation and CODIS requirements, each Lab has:

- Formal written training programs
- Training/competency determinations through mock evidence exercises, competency tests, written and/or oral testing, etc.

- Ongoing yearly continuing education on the latest advances in evidence, collection, preservation and analysis as it relates to each forensic science discipline
- Regular, yearly or twice yearly, proficiency testing of scientists performing evidence processing and analysis
- Formal policies on validation, training and competency testing to implement new forensic science techniques

As a result of the focus that accreditation places on meeting standards and staying abreast of the latest advances in forensic science, crime Labs in Arizona have developed a process of cooperation. This includes regular meetings to share forensic science information, develop joint training opportunities, establish common policies, etc. This is accomplished through the following:

- The Arizona Crime Lab Directors Association which meets quarterly.
- Statewide peer groups which meet regularly in each forensic science discipline such as DNA, Firearms, Toxicology, Alcohol, etc.
- Statewide DNA Technical Leader meetings in which the DNA program leaders for each Lab meet to review DNA protocols, evidence handling, etc.
- Statewide Quality Manager meetings, in which the Quality Managers for each Crime Laboratory meet to review, discuss and improve Quality Assurance and Quality Control procedures.

Now an additional coordination process has been added, with the implementation in November of 2007 of a formal Arizona Forensic Services Advisory Committee with all eight Crime Laboratories represented and chaired by a retired Arizona Supreme Court Judge, highly knowledgeable in DNA and the legal aspects of DNA[4].

**Recommendations for Crime Laboratories Examination**

Although Arizona Crime Laboratories are well coordinated with standardized accreditation and CODIS requirements, a few growing police agencies have periodically shown a desire to start their own Crime Laboratories. This creates unaccredited forensic science functions that do not necessarily meet the standards of accreditation to assure proper evidence collections, preservation, handling or analysis. Also, in one instance a City Public Defender's Office has created a forensic science position which is not part of an accredited laboratory. Therefore, a recommendation for enhancement would be:

- ➢ Consider enacting a statute requiring that all forensic science functions in Arizona must be accredited in order to process and analyze evidence and requiring that all forensic analysts/examiners providing testimony must be from a forensic science accredited operation and must successfully complete yearly proficiency testing in order to be accepted as an expert witness in Arizona Courts.

[4] Arizona DNA and Forensic Science Recommendations. Appendix D.

**Retention of Evidence and Records of Investigations**

In order to solve cold cases, both now and in the future, the actual evidence and the records of all aspects of the criminal investigation must be preserved. However, regarding evidence and records retention, there are no uniform policies and procedures.

It is the responsibility of the individual City Police Department, Sheriff's Office or State Law Enforcement Agency to determine when evidence or records are to be retained or destroyed. This obviously varies depending on many factors, but recent advances in forensic science have shown that evidence previously believed to be of no value can now be examined in a Crime Laboratory, solving a case many years old or exonerating a wrongfully accused/convicted individual.

The one area of the Criminal Justice System which has moved toward a uniform approach to evidence retention is the Crime Laboratory component. All Crime Laboratories cut a small portion of analyzed biological stains and preserve them for future analysis if necessary. All Crime Labs in Arizona maintain these cuttings with DPS and the City of Phoenix preserving them for ninety-nine years. All Arizona Crime Labs have stated they are changing their policies and retention schedules to move to ninety-nine years.

One of the major reasons that Arizona Crime Laboratories have adopted the policy of cutting small portions of biological stains and preserving these items for 99 years is because this is relatively easy to accomplish. The "cuttings" are only a few millimeters square and thousands of "cuttings" can be stored in a reasonably small space.

This, however, is not true for the remainder of law enforcement investigations where a typical homicide/sex assault case can result in many large boxes of evidence holding clothes, sleepwear, sheets, blankets, rape kits, etc. These items rapidly fill up police evidence rooms and it is not reasonable to save every item initially collected in every investigation for 99 years.

Twenty-two States and the Federal Government have adopted Statutes regarding the retention of evidence. These Statutes have been developed to provide reasonable requirements for evidence retention, primarily in light of post conviction relief cases.

**Recommendation for Retention of Evidence and Records**

In order to improve evidence retention in regards to cold cases and post convicted analysis, it is recommended:

- Develop reasonable standards, through a working group, for the retention of evidence in light of advances in cold case resolution; the needs of victims and victims' families; post conviction analysis and the statutes of limitations on criminal offenses.

**Crime Laboratory Success with Cold Cases**

All Crime Laboratories in Arizona report significant involvement in cold cases, particularly unsolved homicides and sex assaults. However, Crime Labs are not always provided with the information necessary to identify all submitted cases which are cold cases; therefore, they do not routinely track cold cases.

The City of Scottsdale Crime Lab, however, did have information available showing that they reviewed all Scottsdale homicides back to 1975 and identified twenty cases where new Crime Lab analysis might provide a resolution to the cold case. These are now being examined and detectives are following up with locating witnesses, interviewing, etc.

The City of Phoenix reports significant cold case activity with the majority of cases in the sex assault area.

DPS has reviewed its records and identified in excess of 222 cold cases already analyzed from 46 law enforcement agencies. In addition DPS sent out a survey to its user agencies who have reported 546 additional cold case homicides and sex assaults. The DPS Crime Lab is now actively working with these agencies to review the cases and analyze any applicable evidence.

The DPS Crime Laboratory is working in a coordinated program with investigators and prosecutors to move forward with resolving cold cases. To that end, a detailed cold case solvability questionnaire[5] was developed which requires input from all three involved parties - investigators, crime lab scientists and prosecutors. This has been used successfully to resolve a number of previously unsolved cold case homicides.

Examples of a few representative cold cases solved through a team effort of Investigators and Crime Lab Scientists are:

- ✓ On the morning of March 26, 1996, the body of a white female, 26 years old was found in an alley. She was dressed only in a black t-shirt, with trauma to her face, neck, and breast area. She was last seen the previous night at a convenience store in her neighborhood. The autopsy revealed the cause of death as manual strangulation and was ruled a homicide. In April 2003, a Cold Case Unit Detective re-investigated the case, and crime scene evidence was examined by the Phoenix Police Crime Laboratory. The Crime Lab obtained a DNA Profile from a breast swab and hair removed from the victims T-shirt. The profile was entered into CODIS, and a match was made with a convicted offender sample.

  In 1996, the convicted offender lived in the area where the victim was last seen and her body found, but was never a suspect in the homicide. The offender was contacted and made statements concerning his activities in 1996. The offender is a registered sex offender, with a conviction for sexual assault and attempted murder. He is currently in jail, awaiting trial on the charge of kidnapping, sexual assault, and murder concerning this cold case investigation.

- ✓ On May 27, 1987, the body of a young woman was discovered in her bedroom by her mother after she did not show up for work that morning. The victim was found lying face down in the master bedroom bound, beaten, brutally raped and strangled. An Arizona Department of Public Safety Criminalist responded to the scene that day and collected several items of evidence that would prove to be critical in the identification of the

[5] Cold Case Solvability Questionnaire. Appendix C.

killer twenty years later. Early on in the investigation, a possible suspect was developed. However, numerous blood and semen stains analyzed in 1987 with the current scientific technique of enzyme typing, eliminated the primary suspect. Eventually, the case ran cold.

In August of 2003, a cold case detective re-evaluating the case contacted the DPS Southern Regional Crime Lab – Tucson, and a reanalysis of the evidence was performed using modern day DNA typing methodology. DNA analysis on semen stains from the nightgown and bedding yielded the same unidentified male profile. The DNA profile was uploaded into the Combined DNA Index System (CODIS), but no match occurred. With no hit in CODIS, the investigation forged on. The detective assigned to the case identified fifty seven suspects including neighbors, convicted sex offenders in the area, even family. No one was overlooked. Systematically, the case detective tracked down more than half of the people on that list and collected a DNA sample for comparison to the DNA profile from the semen stains.

On June 17, 2005, after DNA typing 22 individuals on that list of 57, the DPS Crime Lab matched an individual. This new suspect was the neighbor right next door to the victim at the time of her death and was now living in Florida. The suspect was arrested in Florida and extradited back to the State of Arizona, where he stood trial in 2007 and was convicted of murder.

✓ In 1988, a young woman in her mid 20's was brutally stabbed in her apartment. Her body was found by her boyfriend the following day nude with multiple knife wounds, to include a slit throat, almost to the point of decapitation. A sexual assault kit was collected at autopsy. In 2001, a DNA profile from an unknown male was developed from the sperm fraction of a vaginal swab and entered into CODIS. About two years later, CODIS produced a DNA match with a convicted offender that had been incarcerated on aggravated assault charges for assaulting a female dancer. This offender would have been 16 years old at the time the crime occurred in 1988. During 1988, his family lived in the same apartment complex as the victim. The suspect claimed not to recognize the victim. After more evidence was DNA tested and this case went to court, he was convicted of ~~1~~$^{st}$ first degree murder in 2007.

✓ On May 21, 1987, a female victim was laying in her bedroom where she had been sexually assaulted, beaten and strangled to death. The victim had been preparing to leave on an out-of-state trip and was found by her boyfriend when he returned from work. Investigators were unable to solve the crime at the time but they preserved evidence including a sexual assault collection kit and the cord used to strangle the victim.

In 2000, cold case investigators submitted evidence to the DPS Central Regional Crime Lab – Phoenix. The Crime Lab was able to obtain a profile on semen collected from the evidence and entered it into CODIS. A hit resulted identifying a convicted felon who had been incarcerated for sexual assault of another young woman, subsequent to the 1987 murder. The suspect's DNA was also confirmed on the cord used to strangle the victim, tying him directly to the murder. This suspect was convicted of the murder in 2005.