Arizona Department of Public Safety
DNA Evidence Collection for Agencies
Today’s Presenters

• Allison Lowder
  ALowder@azdps.gov
• Sallie Sanborn
  SSanborn@azdps.gov
• Kim Kobojek
  KKobojek@azdps.gov

Your friendly, neighborhood Forensic Scientists
Evidence Collection and Submission

What can DNA do for you?
CSI Effect affecting you?

- We’re here to help bridge the gap
- How to get your evidence processed instead of sent back
- What can/does the lab even do???
Communication

• We are here to start the conversation
  – Help us help you
• Please ask questions
  – Sticky notes
Housekeeping

• Bathroom location
• Class is broken into 3 parts
  – With breaks in between
• Class Materials Packet
  – Survey
  – Flow chart
  – Handouts
Disclaimer

Please note: anyone from an agency that does not typically submit DNA evidence to the DPS laboratory system (i.e. Scottsdale PD, Phoenix PD, Mesa PD) be aware that this presentation will entail information that **is specific to the AZDPS crime lab submission guidelines and requirements. Your crime lab may have different requirements, recommendations and guidelines.**
Topics

• What is DNA?
• What can forensic DNA answer?
• Types of DNA samples

-Short Break-
• CODIS introduction
• Collection techniques

-Short Break-
• Packaging of evidence
• Request for Scientific Examination
• DNA lab workflow
Performance Objectives

1. Identify three sources of DNA
2. Identify CODIS eligible/not CODIS eligible evidence given scenarios
3. Demonstrate how to collect DNA from various types of evidence
4. Demonstrate how to properly fill out the AZDPS DNA Supplemental Form
What is DNA?

• DNA stands for Deoxyribonucleic Acid

• DNA is the genetic instructions inherited from mother and father
What is DNA?

- Can be found in most cells in the body. Best sources of DNA are body fluids and tissues.
- DNA is unique to each individual (exception - identical siblings)
We look at STR’s (short tandem repeats) to assemble a DNA profile.
What is a DNA profile?

- A list of numbers that represent the length of small areas of your DNA
- We look at 23 areas of your DNA
- There are 2 numbers for each of the 23 areas (one from each parent)
- The list of these numbers is unique to you
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CODIS          
Comments
• It is not any one number that is unique to each person, but rather the list of numbers.
• The more numbers on the list, the more unique the profile is.
DNA Rocks
5432 S. Helix Lane
Genetics, AZ 85009

JAMES WATSON
1953 Crick Ave.
Forensicland, AZ 83254
Because DNA is unique to an individual, it is useful in forensic investigations. Understanding how DNA can help your investigation will help you apply this technology in the most effective manner.
What Can Forensic DNA Answer?

In terms of each case, think about what questions you are trying to answer and how DNA can help you answer those questions.

Some cases are just not DNA cases.
What Can Forensic DNA Answer?

Can help generate investigative leads in cold cases and cases without a suspect, utilizing CODIS (national database).

Example: A DNA profile from a cigarette butt found at the crime scene is put into CODIS and “hits” a profile already in CODIS.
What Can Forensic DNA Answer?

Whether a particular DNA profile is present on an item or at a crime scene (forensic evidence triangle)

Example: The DNA profile from the blood found on the knife collected from the suspect matches the DNA profile of the victim.
Suspect’s knife has victim’s blood on it
What Can Forensic DNA Answer?

Perpetrator of a sex crime if we develop DNA profiles from Sex Crime Evidence Kits (SCEK)

Example: The DNA profile from semen found on the victim’s body matches the suspect.
What Can Forensic DNA Answer?

Familial questions (ex. criminal paternity).

Example: Pregnancy resulting from a sexual assault or sexual contact with a minor (can test DNA from the baby or aborted fetus to compare with mother and/or suspect).
What Can Forensic DNA Answer?

Identity of an individual

Examples:
- Unidentified human remains (DPS will do only if it’s related to a crime)
- Unknown identity cases (unable or unwilling to identify themselves)
What CAN’T Forensic DNA Answer?

How the DNA got there

There are many ways DNA can be transferred to an item: touching, sneezing, talking, transferring of bodily fluids and natural shedding of skin cells.
What CAN’T Forensic DNA Answer?

When the DNA got there

No time frame on how long DNA will last, it depends on several factors as well as how much DNA was left behind.

“World's Oldest Genome Sequenced From 700,000-Year-Old Horse DNA”

- By Jane J. Lee, National Geographic, June 27, 2013
What CAN’T Forensic DNA Answer?

Whether an item was or was not handled by an individual

There are many ways for someone’s DNA to be transferred to an item. This is why we typically will not perform DNA analysis on prohibited possessor cases.
What CAN’T Forensic DNA Answer?

Consent

Example: A sexual assault where the suspect claims the sexual contact was consensual.
Types of DNA Samples

We have broken them down into three categories:
Types of DNA Samples

The “Good” (blood, saliva & semen)

The “Bad” (trace/touch DNA)

The “Ugly” (urine, feces & vomit)
Blood, saliva and semen

• Usually very good sources for DNA

• Usually single source samples

• Usually need less sample to get results
Each location usually has only one or two peaks.
Trace/Touch DNA

- Generally a very limited source of DNA
- Sweat is considered a trace DNA sample
- Not much DNA present = might only get a partial DNA profile
- Often results in DNA mixtures of multiple people
What Does A Mixture Look Like?

Single source – Usually one or two peaks per location

Mixture – Many peaks per location

Can be very difficult to interpret
What Does A Mixture Look Like?
“The Bad”
Trace/Touch DNA

Usually harder to get good results

In theory, only a small number of cells are needed for DNA analysis

However...
“The Bad”

• Touching a surface or item briefly usually leaves very little, *if any*, sample

• Better samples would be something handled/used over a long period of time (hat, cell phone, shirt, sunglasses)
“The **REALLY** Bad”

Trace, “touch” DNA

- Shell casings
  - Last resort item
  - Cannot be a dual request item (ex. cannot do both latent prints and DNA on a casing)
    - It is an item that is only touched briefly
    - Undergoes extreme heat (can destroy DNA)
    - Very small surface area
Urine, feces, vomit, etc.

Not tested routinely for DNA

• Feces: swab the outside
• Vomit: swab
• Urine: call the lab
DNA Samples

Generally Better Samples of Each Type*

- **Blood** - Ex. Blood on broken window at point of entry
- **Saliva** - Ex. Cigarette butt or water bottle
- **Mucus** - Ex. Used tissue
- **Semen** - Ex. Used condom

*Please note that the condition of the sample, amount and other factors can affect the quality of the sample.*
Short break

Now you know how beautiful I really am.
CODIS
Combined DNA Index System

• 3 Levels of Database
  – National, State and Local
• 3 Categories of Indexes
  – Forensic DNA Profiles, Convicted Offender DNA Profiles, Unidentified Human Remains Profiles
CODIS
National DNA Database
**Combined DNA Index System**

- Useful for generating a suspect
- Useful for linking suspects and/or cases nationwide
CODIS

Not all DNA profiles that we get from evidence are eligible to enter into CODIS.

CODIS is managed by the FBI and they have rules that we must follow.
CODIS Eligibility

Questions we must answer about the evidence in order to use CODIS

• Was a crime committed?
• Where was the evidence collected from within the crime scene?
CODIS Eligibility Information

Where, specifically, was the item located in relation to the crime scene?

Please be detailed and specific on the DNA Supplemental Form about where each item was located.
CODIS Eligibility

Questions we must answer

• Was the DNA on the evidence likely left by the perpetrator of the crime (not a victim or other person)?
CODIS Eligibility Information

Was the item located in an area where the public has access (i.e. sidewalk, front yard, parking lot)? If YES, please explain (how can the item be attributed to the perpetrator).
CODIS Eligibility Information

Can anyone confirm that the item does not belong to the victim and/or that the item was not present prior to the crime?
Considerations

Did the victim deny ownership of the item?
Ex. “We do not smoke. This cigarette butt isn’t ours.”

Did the victim state the item or body fluid wasn’t present prior to the incident?
Ex. “This Coke can wasn’t in my car when it was stolen.”
Has the item been handled by anyone other than the suspect (i.e. owner/victim)?

If yes, in most cases* elimination standards must be submitted under the same DR# for each individual.

* An exception to this would be in the case of blood.
Considerations

If the item does belong to the victim, but is believed to have suspect DNA on it:

Victim elimination standards must be submitted in most cases.*

*An exception would be in the case of blood left behind at a scene.
CODIS Eligibility
Questions we must answer

Was the evidence seized or collected directly from a suspect’s possession? (Not CODIS eligible)
CODIS

Reasons a profile may not be CODIS eligible:

• The evidence did not meet CODIS eligibility requirements

• Elimination standards were not received

• We were not able to obtain a DNA profile or not enough of a profile to meet CODIS rules

• Complicated mixture
CODIS Eligible Examples

• Item #1 is a cigarette butt found inside burglarized residence. Owners confirmed it did not belong to them.

• Item #2 is a swab of red/brown stain located on broken window glass at point of entry.

• Item #3 is a hat collected from the fenced backyard of the residence. It does not belong to the occupants.
Examples that *may not* be CODIS eligible:

- In the **front yard** of a burglarized residence
- On the ground **outside** of a recovered vehicle
- In an **empty lot** nearby a burglarized business
CODIS Eligibility Scenarios

• Complete handout for CODIS Eligibility Scenarios utilizing information just presented.

• We will come back together as a class to go over the answers and discuss any questions regarding CODIS eligibility.
Scenario
A perpetrator grabs a woman’s purse in a public parking lot, jumps into a car and drives away. The victim states that she saw the perpetrator throw his soda cup to the ground as he jumped into the car. She points out the cup and straw in the parking lot. The cup and straw are collected and submitted for DNA analysis.

• If a complete DNA profile is obtained from the cup/straw, will that profile be eligible to upload into CODIS?
Scenario

Yes, if the victim is positive that it is the same cup that the perpetrator threw to the ground.
Scenario

A suspect was stopped by the police and pulled a gun on the officer, but then dropped it and fled. The suspect was not apprehended, but the gun was collected.

If a complete DNA profile is obtained from the gun, will that profile be eligible to upload into CODIS?

Yes
Scenario

The offense in this case is felon in possession of a firearm. The DNA profile from a swabbing of the gun matches the suspect. The gun was recovered from a backpack belonging to the suspect.

Can the complete DNA profile obtained from the gun be eligible to upload into CODIS? 

No
Scenario

Detectives investigating a residential burglary locate a cigarette butt in the front yard of the home near the sidewalk. None of the occupants living in the home smoke.

If a complete DNA profile is obtained from the cigarette butt, will that profile be eligible to upload into CODIS?

No
Scenario

- Victims answer their door late at night and multiple suspects enter and commit a home invasion/robbery. Only one suspect was identified, but he was not connected to the scene through DNA. On that same night, a suspicious scene unfolded in the same neighborhood, where a lady said that there was a knock on her door, but she did not answer. As the people were leaving, she saw one discard a bottle on her lawn...
Scenario

The investigator thought these two incidents may be related, so he recovered the bottle and submitted it for analysis in connection with the first case. A DNA profile was obtained from the bottle, however, it does not match the identified suspect from the first incident.

• Can the DNA profile from the bottle go into CODIS?
No
Scenario

- A gun is found under the seat of a suspect’s car. He says he has no idea how it got there and has never seen it before. DNA is requested to show that he handled the gun.

Will DNA answer that question?
Scenario

- **NOT NECESSARILY**
- Finding his DNA on the gun doesn’t absolutely prove that he handled it.
  - Sneezing/saliva
  - Skin cells
- **NOT** finding his DNA on the gun doesn’t prove he DIDN’T handle it
- Latent print analysis may be more effective/efficient at answering this
Collection Techniques

To avoid contamination of DNA evidence, always take the following precautions:

- Wear gloves. Change them often.
- Use disposable instruments or thoroughly clean them after each item of evidence.
- Avoid touching the area where you believe DNA may be present
- Avoid coughing, sneezing or talking over the evidence (even if you’re wearing a mask).
Collection Techniques

To avoid contamination of DNA evidence, always take the following precautions:

• Avoid touching your face, nose and mouth while collecting evidence.
• Air-dry evidence thoroughly before packaging.
• Put evidence in new paper bags or envelopes. Avoid plastic bags.
Reminder

You only have one chance to collect the evidence.

Please do not forgo collection based on DPS crime lab submission policies.
A Tiered Approach is Recommended

Items collected at the crime scene
(cast a wide net)

Items of evidentiary value

Items processed by the crime lab

Every additional unnecessary analysis we perform on the case at hand is an analysis that is not done on the next urgent case waiting in line.
Collection Techniques

Blood

- **Large** bloodstains on a non-porous surface
  - One to two swabs
  - Saturate swabs

![Image of swabs and bloodstain]
Collection Techniques

Blood

- **Small** bloodstains on non-porous surface
- One slightly wet swab
  - Concentrate stain on tip of swab
Collection Techniques

Blood

• Large bloodstains on clothing or bedding
  ▪ Send to us for testing
  or
  ▪ Cut out stained areas and send to us (document or photograph evidence before cutting)
Collection Techniques

Blood

• Small bloodstains on clothing or bedding
  ▪ Send to us for testing
  ▪ May circle any stains of interest
Collection Techniques

Blood

• Bloodstains on small, easily packaged items (cell phone, tools, water bottle, etc.)
  • Send us the entire item
Collection Techniques

Saliva

• Send in small, easily packaged items (bottles, cans, cigarette butts), we will process them.

• If you are swabbing an item:
  ▪ Concentrate sample on no more than two wet swabs
  ▪ Swab vigorously around mouth area!
Collection Techniques

Trace

- Send in small, easily packaged items (bottles, cans, tools, etc.), we will swab them.

- If you are swabbing an item:
  - Concentrate sample on no more than two wet swabs
  - **Swab vigorously!**
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<td>One swab of entire item</td>
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<tr>
<td>Earphones</td>
<td>One swab of both earbuds</td>
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<tr>
<td>Winter Hats</td>
<td>Inside headband cutting</td>
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<tr>
<td>Baseball Caps</td>
<td>Swab inside headband or inside headband cutting</td>
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<tr>
<td>Fabric Gloves</td>
<td>Swab inside fingers &amp; thumb or thumb pad area cutting</td>
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<td>T-shirts</td>
<td>Swab inside collar or inside collar cutting</td>
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<tr>
<td>Watches</td>
<td>Swab inside surface and clasps</td>
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<tr>
<td>Latex Gloves</td>
<td>Swab inside surface</td>
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<tr>
<td>Socks</td>
<td>Swab inside surface or heel cutting</td>
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Don’t forget to collect elimination standards!

Examples:

- Swabs from home - All occupants of the residence
- Vehicle swabs - All drivers of the vehicle
- Firearm – Anyone who uses the firearm
- Victim
- Consensual sex partner(s)
For Touch Cases

It doesn’t matter who touched the item last. There are many considerations:

Who else has touched this item?

How long did the person handle it?

Some people “shed” more DNA than others.

*Cleaning products do not necessarily remove DNA*
Known Standards = Buccal Swabs

Buccal = inner cheek of a person’s mouth.

Buccal swab = cheek swab

THIS

NOT THIS

OR THIS
Known Standards = Buccal Swabs

- When collecting buccal swabs, take 2 swabs of the inner cheek.
- Please ensure that buccal swabs are labeled with person’s name and name is spelled correctly.
Collection Techniques

Dual Requests

• DNA and Latent Prints/Firearms
  ▪ DNA must be collected first.
  ▪ Items undergoing DNA analysis must be handled by someone who is wearing gloves and a mask to prevent contamination.
Collection Practicum Activity

Choose one station to start at:

- Blood collection
- Saliva/Trace collection
- Buccal swab collection

• Instructions are at each station
  – Use information from presentation to aid in collection process

• Rotate stations when instructed
Short break

Now you know how beautiful I really am.
Components of Packaging

• Appropriate packaging material
  – Envelope
  – Paper bag
  – Cardboard Box
  – Swab box

• Required markings
  – Item #
  – DPS DR #
  – Agency DR #

• Correctly spelled names
Components of Packaging

Proper Tape Seal

Markings /initials are on tape and the package = TAPE SEALED

Markings on tape do not overlap onto the package = NOT TAPE SEALED
Other Packaging Considerations

- Dry all items and swabs prior to packaging
- Empty liquids from drinking containers prior to packaging
  - Empty liquid through bottom if saliva is suspected on mouth area
- If possible, package each item separately
- Do not over package (*please*)
  - No clown car packaging
  - No Russian doll packaging
Known Standards (a.k.a. buccal swabs)

• Except for sex assault and biological standards kits, all known standards should be submitted in a package separate from crime scene evidence.

• Package the 2 swabs in a swab box and seal this swab box in only one large outer manila envelope.

• Submit known DNA standards as a single item, at the same time crime scene evidence is submitted to the lab.
Packaging Handout

• Take the next 5-7 minutes to complete packaging handout
• Feel free to discuss scenarios with your neighbors
• We’ll come back together as a class to discuss scenarios and answer any questions you may have
### Non-DPS Agency Request for Scientific Examination

**Agency**

**Submitting Agency Case #**

**Page # of #**

**DPS DR #**

**Case Officer**

**ID #**

**Officer's Direct Work Phone**

**Charge(s)**

(1) Associated Individuals (Last, First, M) D.O.B.

**Charge(s)**

(2) Associated Individuals (Last, First, M) D.O.B.

**Charge(s)**

(3) Associated Individuals (Last, First, M) D.O.B.

**Requests for Analysis**

**Associated Individuals**

**Brief Description of Evidence**

<table>
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<th>Item #</th>
<th>Brief Description of Evidence</th>
<th>BA</th>
<th>CS</th>
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**DPS Only**

**Item(s)/Package(s)**

**From Name**

**ID No.**

**To Name**

**ID No.**

**Purpose**

**Date/Time**

**Has This Evidence Been Examined by Another Agency?**

- Yes
- No

**Chain of Custody**

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<tr>
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<th>Item(s)/Package(s)</th>
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**The Arizona Department of Public Safety Crime Laboratory Will Have Initial Discretion Over the Selection of Test Items and Methods for Analysis.**
**Non-DPS Agency Request for Scientific Examination**

**Agency**

**Submitting Agency Case #**

**Case Officer**

**ID#**

**Officer's Direct Work Phone**

**Case Officer Email**

**Special Instructions/Case History**

**Requests for Analysis**

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<th>Item #</th>
<th>Brief Description of Evidence</th>
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**DPS Only**

**Has this evidence been examined by another agency?**

- [ ] Yes
- [ ] No

**Chain of Custody**

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**The Arizona Department of Public Safety Crime Laboratory will have initial discretion over the selection of test items and methods for analysis.**
# ARIZONA DEPARTMENT OF PUBLIC SAFETY
NON-DPS AGENCY REQUEST FOR SCIENTIFIC EXAMINATION

PHOENIX – (602)223-2394  FLAGSTAFF – (928)773-3684
TUCSON – (520)746-4575  LAKE HAVASU – (928)680-5490

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THE ARIZONA DEPARTMENT OF PUBLIC SAFETY CRIME LABORATORY WILL HAVE INITIAL DISCRETION OVER THE SELECTION OF TEST ITEMS AND METHODS FOR ANALYSIS.
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THE ARIZONA DEPARTMENT OF PUBLIC SAFETY CRIME LABORATORY WILL HAVE INITIAL DISCRETION OVER THE SELECTION OF TEST ITEMS AND METHODS FOR ANALYSIS.
Please Keep in Mind

• Usually we do not test evidence that has had any previous testing by another lab.

• Using Bluestar/Luminol (or similar) at crime scenes can dilute stains and limit our chances of getting a DNA profile.
Supplemental Information

- Case information/synopsis
- Sex Crimes Evidence Kit paperwork
DNA Evidence Submission Supplement

Arizona Department of Public Safety Crime Laboratory

Answer the questions below and attach to request form or email to the appropriate lab handling your request. Lack of information or incomplete answers will result in the delay of analysis.

PHOENIX: rcl_dna@azdps.gov TUCSON: src_tsa@azdps.gov FLAGSTAFF: srcf_tsa@azdps.gov

All questions must be answered.

Agency: ___________________________ Agency Case Number: ___________________________
Officer/Test: ______________________ Badge#: ___________________________
Direct Email: ______________________ Direct Phone: ___________________________
Offense(s): ______________________ Trial Date: ___________________________

1. Describe what happened in this case (or attach a short case summary):

2. How does each item submitted relate to the crime, and where was it found?

3. Identify the 5 most probative items:

4. If blood was present at the scene, how many people were bleeding? ________ How does each person relate to the crime?

5. What is believed to be the source of DNA for each item?

<table>
<thead>
<tr>
<th>Source</th>
<th>Item Number(s)</th>
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<td>Blood</td>
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<td>Touch</td>
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<td>Other (Please identify):</td>
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6. Was the item(s) located in an area accessible to the public (e.g., sidewalk, front yard, parking lot)?
   If YES, please contact the Laboratory before submission.

7. Was the item(s) left behind by the perpetrator?

8. Does the item(s) belong to the victim?

9. Was the item(s) present at the crime scene before the crime was committed?

10. Has the item(s) ever been handled by someone other than the perpetrator (e.g., owner/victim)?
    If YES, an elimination standard from this person must be submitted under the same DPS DR number.

11. Was the item(s) taken directly from the suspect or from something belonging to the suspect (e.g., backpack, car, etc.)?
    If YES, please contact the Laboratory before submission.

12. If a sexual assault, does the victim have a consensual sex partner within 120 hours of the alleged assault?
    If YES, an elimination standard from this person must be submitted under the same DPS DR number.

13. Is there any additional important information that the laboratory needs to know (e.g., victim & perpetrator live together)?

If there is one or more perpetrators in the case or if anyone other than the perpetrator (victim/owner/residents) has touched the evidence item ever, elimination standards from this (these) individual(s) must be obtained and SUBMITTED IN A SEPARATE ENVELOPE UNDER THE SAME DPS DR NUMBER.

Evidence origin information is required by the FBI to determine CCDIS eligibility requirements. Form Effective: 10/2017

Form completed by: ___________________________ Badge#: ___________________________ Date of completion: ___________________________
DNA Supplemental Form

This and other forms/ information available on our website:

https://www.azdps.gov/organization/TSD/scientific-analysis/dna#casework

From our main website:
AZDPS.gov > Services > Governmental Services > Crime Laboratory > DNA Scientific Services
DNA Supplemental Form
Find on AZDPS.gov
DNA Supplemental Form
Find on AZDPS.gov
DNA SCIENTIFIC SERVICES

DNA CASEWORK

Forensic DNA analysis involves testing of biological samples left at a scene to determine a DNA profile which can then be compared to the known profile of an individual or entered into the Combined DNA Index System (CODIS), a national database of DNA profiles, to search for a potential match. The first step, serology, determines the nature of the biological sample and indicates the potential for a DNA profile to be developed with further testing. This further testing, using a technique called capillary electrophoresis, results in a profile that illustrates multiple locations (loci) on the DNA molecule.

The Scientific Analysis Bureau provides serology and forensic DNA analysis using the most modern DNA scientific services for the examination of crime evidence to identify or exonerate individuals. DNA analysis is offered at the Central, Southern and Northern laboratories.

- Announcements/bulletins
  - DNA Evidence Submission Supplement Required for All DNA Analysis Requests
  - Touch-DNA Case Acceptance Guidelines
  - DNA Evidence Collection and Submission Presentation Flyer
  - DNA Collection Brochure
  - Track-Kit Information
  - CODIS Searches
- DNA Supplemental Form
- DNA Evidence Collection Presentation

DNA DATABASE

The Combined DNA Index System is the DNA database utilized in the United States. Created and maintained by the Federal Bureau of Investigation, it involves various levels of databases at local, state and national levels which allow searching of unknown DNA profiles against other unknown forensic profiles, convicted offender profiles, and amnestee profiles.
The Cliff Notes

- Wyatt Earp was bringing on the reckoning.
- Johnny Ringo sends his peeps to Earp’s peeps to challenge him to a duel.
  - Note- Ringo is a skilled gun fighter->Earp would probably lose
- Allegedly... Doc Holiday, who is Earp’s BFF, unknowingly shows up in Earp’s place
  - Doc->better gun fighter than Earp & Ringo
- Ringo was unpleasantly surprised
  - Note- Ringo has a big ego & emotional problems that questioned his desire to live
- Shoot out occurs->Bang Ringo is dead!
**Direct Contact Information**

**More info. Rush??**

<table>
<thead>
<tr>
<th>ITEM #</th>
<th>BRIEF DESCRIPTION OF EVIDENCE</th>
<th>ASSOCIATED INDIVIDUALS</th>
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<td>4</td>
<td>cigarette butt</td>
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**REQUEST FOR ANALYSIS**

- **CHAIN OF CUSTODY**
All questions must be answered.

1. Describe what happened in this case (or attach a short case summary):
   shoot out at the OK Corral

2. How does each item submitted relate to the crime, and where was it found?
   collected from scene, DNA

3. Identify the 5 most probative items:
   1-5

4. If blood was present at the scene, how many people were bleeding? Everyone
   How does each person relate to the crime?

5. What is believed to be the source of DNA for each item?
   Source: Item Number(s)
   Blood: 2 Ringo's clothes
   Saliva: maybe
   Touch: yes
   Other (Please identify):

6. Was the item(s) located in an area accessible to the public (e.g., sidewalk, front yard, parking lot)?
   If YES, please contact the Laboratory before submission.

7. Was the item(s) left behind by the perpetrator?

8. Does the item(s) belong to the victim?

9. Was the item(s) present at the crime scene before the crime was committed?

10. Has the item(s) ever been handled by someone other than the perpetrator (e.g., owner/victim)?
    If YES, an elimination standard from this person must be submitted under the same DPS DR number.

11. Was the item(s) taken directly from the suspect or from something belonging to the suspect (e.g., backpack, car, etc.)?
    If YES, please contact the Laboratory before submission.

12. If a sexual assault, does the victim have a consensual sex partner within 120 hours of the alleged assault?
    If YES, an elimination standard from this person must be submitted under the same DPS DR number.

13. Is there any additional important information that the laboratory needs to know (e.g., victim & perpetrator live together)?

   If there is one or more perpetrators in the case or if anyone other than the perpetrator (victim/owner/residents) has touched the evidence item ever, elimination standards from this (these) individual(s) must be obtained and submitted in a separate envelope under the same DPS DR number.

Evidence origin information is required by the FBI to determine CODIS eligibility requirements. Form Effective: 10/2017

Form completed by Wyatt Earp Badge# 10G Date of completion
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**SPECIAL INSTRUCTIONS/CASE HISTORY**
Shoot out between Holiday and Ringo. Ringo was fatally injured.

**CHAIN OF CUSTODY**

**THE ARIZONA DEPARTMENT OF PUBLIC SAFETY CRIME LABORATORY WILL HAVE INITIAL DISCRETION OVER THE SELECTION OF TEST ITEMS AND METHODS FOR ANALYSIS.**

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**ARIZONA DEPARTMENT OF PUBLIC SAFETY**
NON-DPS AGENCY REQUEST FOR SCIENTIFIC EXAMINATION
PHOENIX - (602) 223-2394 FLAGSTAFF - (928) 773-3684
TUCSON - (520) 746-4575 LAKE HAVASU - (928) 680-5490

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**AGENCY**
Tombstone Sheriff's Office

**SUBMITTING AGENCY CASE #**
201912345

**CASE OFFICER**
Wyatt Earp

**ID#**
10G 480-857-2001

**CASE OFFICER EMAIL**
w.earp@tombstone.gov

**CASE HISTORY**
Doc Holiday

**D.O.B.**

**CHARGE(3)**

**ASSOCIATED INDIVIDUALS**
Johnny Ringo

**DPS DR #**
2019123456

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**REQUESTS FOR ANALYSIS**

**BAR** BLOOD ALCOHOL
**CS** CONTROLLED SUBSTANCES
**DNA** DNA
**F/T** FIREARMS AND TRACES
**LPI** LATENT PRINTS
**QD** QUANTITATIVE DNA
**TOX** TOXICOLOGY
**CFU** COMPUTER FORENSICS

HAS THIS EVIDENCE BEEN EXAMINED BY ANOTHER LABORATORY?

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**DPS 802-01550 REV. 12/2015**
Agency: Tombstone Sheriff's Office
Officer/Dept: Wyatt Earp
Direct Email: W.Earp@tombstone.gov
OFFENSE: Homicide, impersonating a peace officer

1. Describe what happened in this case (or attach a short summary): Shoot out between Holiday and Ringo. Ringo was fatally injured.

2. How does each item submitted relate to the crime? What was it used for? Where was it found?
Revolver believed to be murder weapon possibly fired in shoot out. Cigarette butt believed to have been dropped by Holiday, recovered from shoot out location.

3. Identify the 5 most probative items:
1. Cigarette butt
2. Photograph of Holiday
3. Photograph of Ringo
4. Note from witness
5. Handgun

4. If blood was taken, was it taken from a wound or on clothes? Was it used to test for DNA?
Johnny Ringo (victim) and Wyatt Earp (suspect).

5. What is believed to be the source of the blood?
Source:

Blood
Saliva
Touch
Other (Please identify):

6. Was the item(s) located in a public area? If yes, please specify the area.
If YES, please contact the Laboratory before submission.

7. Was the item(s) left behind the crime scene?

8. Does the item(s) belong to the suspect?

9. Was the item(s) present at the crime scene before the crime was committed?

10. Has the item(s) ever been handled by someone other than the perpetrator (e.g., owner/victim)?
If YES, an elimination standard must be submitted under the same DPS DR number.

11. Was the item(s) taken directly from the suspect or from something belonging to the suspect (e.g., backpack, car, etc.)?
If YES, an elimination standard must be submitted under the same DPS DR number.

12. If a sexual assault, does the victim have a consensual sex partner within 120 hours of the alleged assault?

13. Is there any additional important information that the laboratory needs to know (e.g., victim & perpetrator live together)?
Items recovered from a public location, however, grainy video surveillance shows suspect drop revolver and cigarette butt, face is not clear, however it appears he said "I'm your huckleberry."
Why We Ask for Supplemental Information

- Triage cases
  - Who does the item belong to?
  - What type of bodily fluid?
  - How many possible bleeders?
  - How many assailants/victims?
- Determine required standards
- Determine CODIS eligibility
DNA Supplemental Form Exercise

- Using scenario provided on the handout, please fill out a DNA Supplemental Form
- Fill out properly, as you will need a sign off from one of the instructors
Lab Workflow

• What actually happens to all that paperwork and evidence you submit???
• How will you know if you did it properly or if you missed something???
Agency Withdrawal

- An effort to obtain standards and/or CODIS eligibility information

- Cases missing information will be issued this report

- Case analysis is on hold for 60 days. After 60 days, if we receive no response, evidence is returned to agency.
Suspect Standards

Can be used to do a direct comparison to the evidence. This is useful on evidence that is not CODIS eligible.
Suspect Standards

- Convicted offender and arrestee samples in CODIS CANNOT be used as suspect standards
- Must be collected and submitted by law enforcement (chain of custody)
- A suspect standard is required to confirm a match made in CODIS
No Suspect Standard Received

- Case evidence processed for DNA
- DNA profile from evidence
- DNA profile to CODIS
- **Report issued**
- DNA “hit” occurs
- **Hit report issued**

- Agency needs to get known standard
- Known standard submitted to Lab
- DNA profile from known standard
- Comparison to evidence
- **Report issued**
Suspect Standard Received

- Known standard and case evidence processed for DNA
- DNA profile from known standard and evidence
- Comparison to evidence
- Both DNA profiles to CODIS

- Report issued
How Providing Supplemental Information Benefits You

• We can start work on your case faster
• We will not need to use up your time with phone calls/e-mails
• We will be spending more of our time working on your cases in the lab instead of making phone calls
• Helps to streamline overall lab workflow
SCHEMATIC OF THE LABORATORY TESTING PROCESS

Crime Scene Evidence → Evidence Screening

DNA Extraction
→ Quantitation of DNA

PCR Amplification
→ Separation & Detection of PCR Products
→ Genotyping

Comparison of Genotype to Other (Known) Sample Results
If Genotypes Match, Compare DNA Profile to Population Databases
Generate Report with Statistical Probabilities
AZDPS Central Regional Crime Lab DNA Workflow

DNA Request (evidence submission)

Agency Notification?

Serologist

Report

DNA Analyst

Report

DONE

DONE
Serology is always the first step towards DNA analysis
Serologist

- Reads all submitted information
- Contacts Detective if necessary
- Analyzes for possible blood, semen, saliva, touch DNA, etc.
- Retains cuttings, swabs, etc. for DNA Analyst
- May issue a report to submitting Detective/Officer

**In most cases action from you will be required**
AZDPS Central Regional Crime Lab DNA Workflow

DNA Request (evidence submission)

Agency Notification?

Serologist

Report

DONE

DNA Analyst

Report

DONE
DNA Analyst

- Extracts DNA from cutting, swab, etc. retained by Serologist
- Potentially obtain a DNA profile(s) and enter into CODIS
- Interpret/compare DNA profile(s)
- Issue a report to submitting Detective/Officer

Note: Not all samples tested for DNA will yield usable results.
AZDPS Central Regional Crime Lab DNA Workflow

DNA Request (evidence submission)

Agency Notification?

Serologist

DNA Analyst

Report

Report

DONE

DONE
Performance Objectives

1. Identify three sources of DNA
2. Identify CODIS eligible/not CODIS eligible evidence given scenarios
3. Demonstrate how to collect DNA from various types of evidence
4. Demonstrate how to properly fill out the AZDPS DNA Supplemental Form
Q&A

“I’ll give you a topic”

• What did you want us to talk about that we didn’t?
• CODIS questions?
• Questions about packaging/collection techniques?
• Case-specifics? What-ifs? Weird scenarios?
• Jellybeans contain neither jelly nor beans…discuss!
Please fill out your survey
AZDPS Crime Lab Main Line Phone Numbers

Central Regional Crime Lab (Phoenix)  602-223-2394
Southern Regional Crime Lab (Tucson)  520-746-4575
Northern Regional Crime Lab (Flagstaff)  928-773-3687
Courtney Campbell, DNA Technical Unit Supervisor
Desk: 602-223-2766, e-mail: ccampbell@AZDPS.gov

Grant Belancik, DNA Casework Unit Supervisor
Sexual Assault Casework Point of Contact
Desk: 602-223-2848, e-mail: gbelancik@AZDPS.gov

Kelli Raley, Serology Unit Supervisor
Violent & Property Crime Casework Point of Contact
Desk: 602-223-2842, e-mail: kraley@AZDPS.gov

Amy Gerow, DNA CODIS Unit Supervisor
Desk: 602-271-7413, e-mail: agerow@AZDPS.gov
Questions about Rapid DNA?

Scott Rex, Lab Manager
Rapid DNA Program Point of Contact
Desk: 602-223-2339
e-mail: srex@AZDPS.gov

Mark Smith, Technical Services Unit Supervisor
Rapid DNA Program Point of Contact
Desk: 602-223-2889
e-mail: msmith@AZDPS.gov
References


