



# Forensic Led Policing

## Denver Crime Laboratory

Greggory Laberge – Crime Laboratory Director

Susan Berdine – FBIO / DNA supervisor

Amy Williams – Latent Print Supervisor

Zachary Kotas – Firearm Examiner

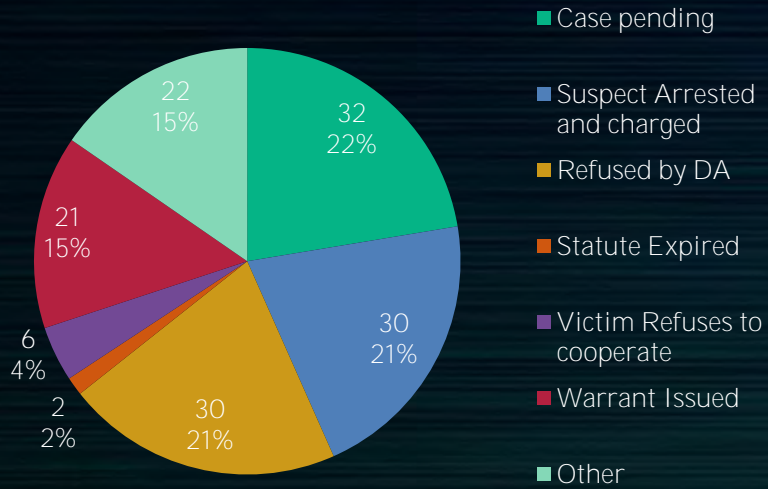
Chuck Reno – Firearm Supervisor

# Police Department Response

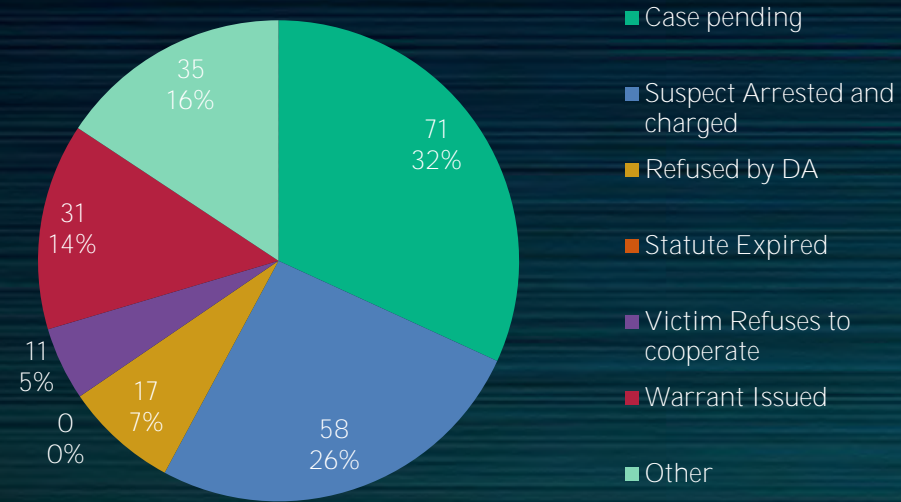
- **Mandatory to follow up on any “database” hit within 24 hours in police operations manual for all CODIS/AFIS hits-applied to NIBIN also.**
  - Denver Police operations manual – section 301.33
- **A written summary of the investigating detective’s review shall be submitted** through their chain of command to their commander within 24 hours. The summary will contain the following:
  - Case overview
  - Significance of DNA association to offense (i.e. intimate vs. non-intimate source)
  - **Victim’s availability and cooperation level**
  - Offender custody status and criminal history
  - Case status (i.e. warrant already exists for identified biological source, PC warrant issued, No PC, Case already adjudicated, further investigation needed)



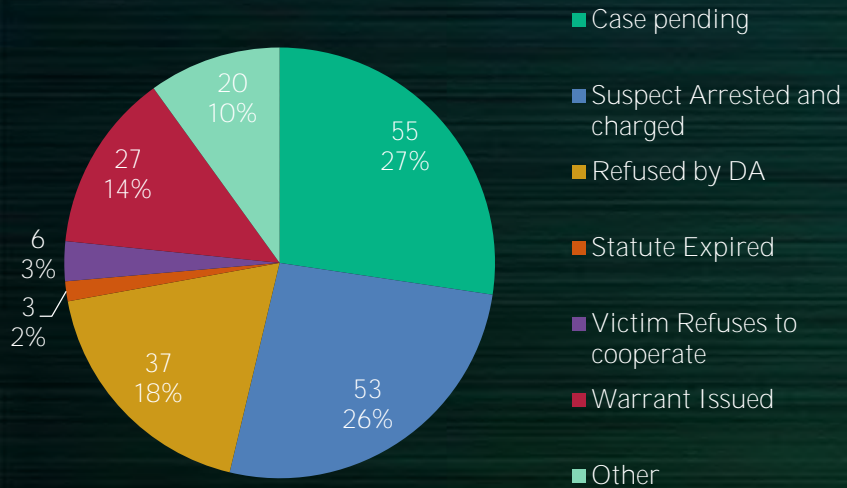
### Laboratory Hits for District 1



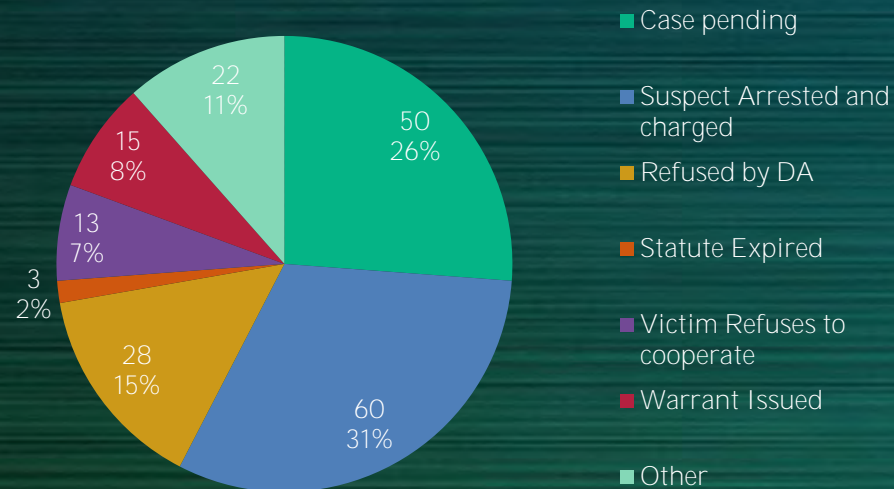
### Laboratory Hits for District 2



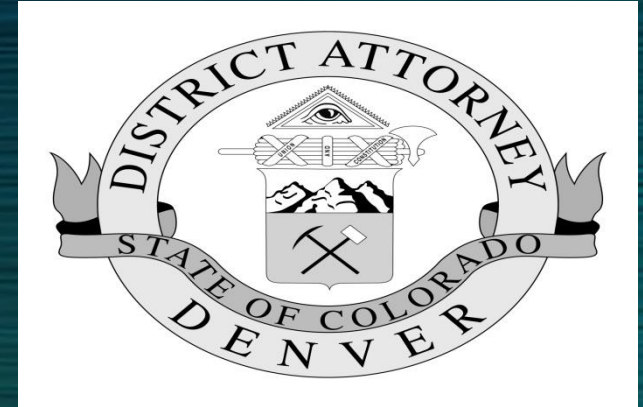
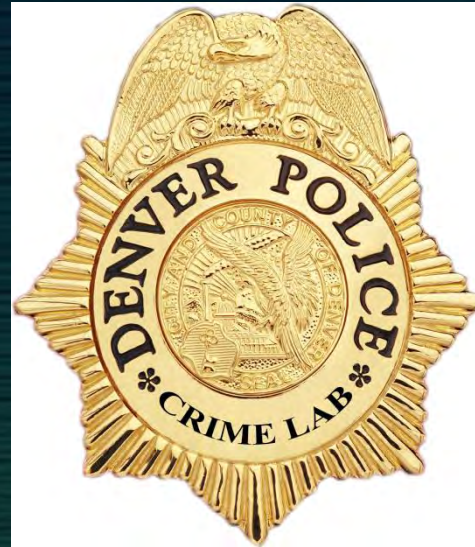
### Laboratory Hits District 3



### Laboratory Hits for District 4



# Denver's Integrated DNA Cold Case Project: Elements for Success



**National Institute of Justice**

The Research, Development, and Evaluation Agency of the U.S. Department of Justice

Susan G. Berdine, DNA Technical Lead  
Denver Police Department Crime Laboratory



# Background

- April 2001 – solved three 1999 sexual homicides through CODIS hit to Ned Pace
- What other investigative tool has the power to re-open investigations and solve violent crimes like DNA testing?



# Cold Case Program Timeline



**2002:** Cold Case Pilot  
Data collected: Cost  
of Homicide review  
≈\$114; Sex assault  
≈\$39

**2003:** NIJ awards  
grant funds to  
DPD to begin cold  
case project;  
Detective case  
review protocol  
developed

**02/2004:** Cold  
Case Project  
launched; Case  
review begins

**08/2004:**  
First cold  
case tested  
results in 2  
CODIS  
matches

**11/2005:** *Cold  
Case Victim and  
Family Outreach  
Protocol*  
Developed by  
DPD Victim  
Assistance Unit

**01/2006:** Cold Case  
Detective Unit  
expanded to  
6 Detectives + 1  
Sergeant

# Cold Case Project Starts in 2004

- Crime laboratory starts STR testing on ‘low hanging fruit’
- Samples previously extracted for legacy DNA methods stored in -70°C storage
- 41 CODIS Matches obtained in first 6 months of project (Aug. 2004 – Jan. 2005)

1	2	3	4	C	1.1	1.2 1.3 4	1.3	All but 1.3	4.1	4.2 4.3	DQA1	9
1	2	3	4	C	1.1	1.2 1.3 4	1.3	All but 1.3	4.1	4.2 4.3	DQA1	10
1	2	3	4	C	1.1	1.2 1.3 4	1.3	All but 1.3	4.1	4.2 4.3	DQA1	11
1	2	3	4	C	1.1	1.2 1.3 4	1.3	All but 1.3	4.1	4.2 4.3	DQA1	12
1	2	3	4	C	1.1	1.2 1.3 4	1.3	All but 1.3	4.1	4.2 4.3	DQA1	13
1	2	3	4	C	1.1	1.2 1.3 4	1.3	All but 1.3	4.1	4.2 4.3	DQA1	14
1	2	3	4	C	1.1	1.2 1.3 4	1.3	All but 1.3	4.1	4.2 4.3	DQA1	15
1	2	3	4	C	1.1	1.2 1.3 4	1.3	All but 1.3	4.1	4.2 4.3	DQA1	16

S	A	LDLR	B	GYPA	A	B	HBGG	A	B	D7S8	A	B	GC	9
S	A	LDLR	B	GYPA	A	B	HBGG	A	B	D7S8	A	B	GC	10
S	A	LDLR	B	GYPA	A	B	HBGG	A	B	D7S8	A	B	GC	11
S	A	LDLR	B	GYPA	A	B	HBGG	A	B	D7S8	A	B	GC	12
S	A	LDLR	B	GYPA	A	B	HBGG	A	B	D7S8	A	B	GC	13
S	A	LDLR	B	GYPA	A	B	HBGG	A	B	D7S8	A	B	GC	14
S	A	LDLR	B	GYPA	A	B	HBGG	A	B	D7S8	A	B	GC	15
S	A	LDLR	B	GYPA	A	B	HBGG	A	B	D7S8	A	B	GC	16

## Post-hit investigations

- Top priority cases are those that involve offenders who are not in custody
- Most CODIS hits (85%) are obtained within the state of Colorado
- Release of offender information can occur immediately if offender is out
- CODIS hits sent via email to lead investigator
- Also sent to supervisors in chain of command
- Written follow-up required within 24 hours of receipt of a CODIS hit





Investigators

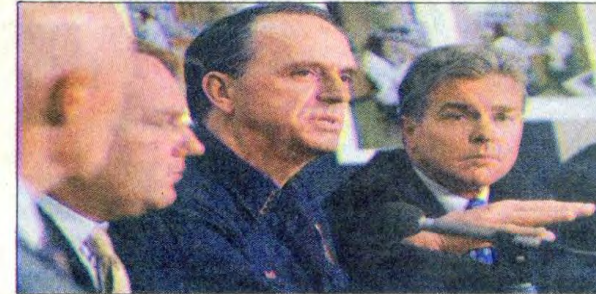


Prosecutors

Forensic  
Scientists

# Denver's Cold Case Program to Date

- >5,200 cases have been reviewed
- 1,008 cases with potential DNA evidence
- 836 cases have been tested
- 428 CODIS hits
- 118 cases filed
- 282 'John/Jane Doe' filings, 91 converted to name identified



Brian Brainerd | The Denver Post

Police Chief Gerry Whitman, center, talks Wednesday about how a DNA project has gathered data about 35 suspected rapists and killers in cold cases. Whitman sits between District Attorney Mitch Morrissey, right, and Gregory LaBerge of the police crime lab.

## DNA work heats up Denver's cold cases

By Kirk Mitchell  
Denver Post Staff Writer

A man who raped at least five Denver women should start looking over his shoulder.

DNA testing funded through an \$893,976 federal grant has linked him to the five attacks, said Steve Allison, director of the Denver Police Department's crime laboratory.

Allison did not release his name, because police are still gathering evidence, but the man's arrest may not be long in coming.

"We're looking for people who believe they got away with these crimes," Denver District Attorney Mitch Morrissey said Wednesday at a news

➤ See DNA on 4B

# DNA returns old cases to front burner

## Denver police take new look at crimes from past 50 years

By Brian D. Crecente  
ROCKY MOUNTAIN NEWS

About two dozen cold sex-assault and homicide cases have been resurrected with the help of a mass DNA analysis dating back to the 1950s, Denver police said Wednesday.

The police department's crime lab and crimes against persons unit reinvestigated about 1,900 cases in search of DNA evidence. The investigators found enough DNA to submit

83 of the cases to a national database, said Gregory LaBerge, who heads the department's DNA lab. The database was able to link 23 of those cases to a person or other case, he said. The discovery spurred fresh investigations into those cases.

The re-examination of 50 years' worth of Denver's unsolved homicides and sex assaults is part of the Denver DNA Cold Case Project, said Denver District Attorney Mitch Morrissey.

"We are talking about the most wanted offenders in our city," he said. "We are talking about wanted sex offenders and serial murderers."

The DNA matches were mostly for sex-assault cases, though at least two hits were for homicides, including one dating back to 1969.

■ **Inside:** New testing efforts from the Colorado Bureau of Investigation. **18A**

One of the homicides is a serial killer case involving bodies discovered in Colorado, Washington and Florida. DNA linked the three cases, which investigators didn't realize were connected.

Police on Wednesday declined to discuss the details of the cases being reinvestigated.

Morrissey said that the hits did lead his office on Jan. 26 to file its first case based on DNA evidence in which the name of the offender was unknown. Instead, the man accused in the sex-as-

sault case is identified by John Doe and a string of genetic markers consisting of letters and numbers.

The DNA analysis was made possible, in part, by \$893,976 in grants that the Denver Police Department's Crime Lab received in 2002 and 2004.

DNA is considered some of the strongest evidence available, on par with—if not superior to—fingerprints.

Morrissey said the new evidence has allowed investigators to take a fresh look at cases that even the families of the victims thought were dead.

"We're talking to family members that think they have been forgotten by the system," Morrissey said.

crecenteb@RockyMountainNews.com  
or 303-892-2811



# AFIS

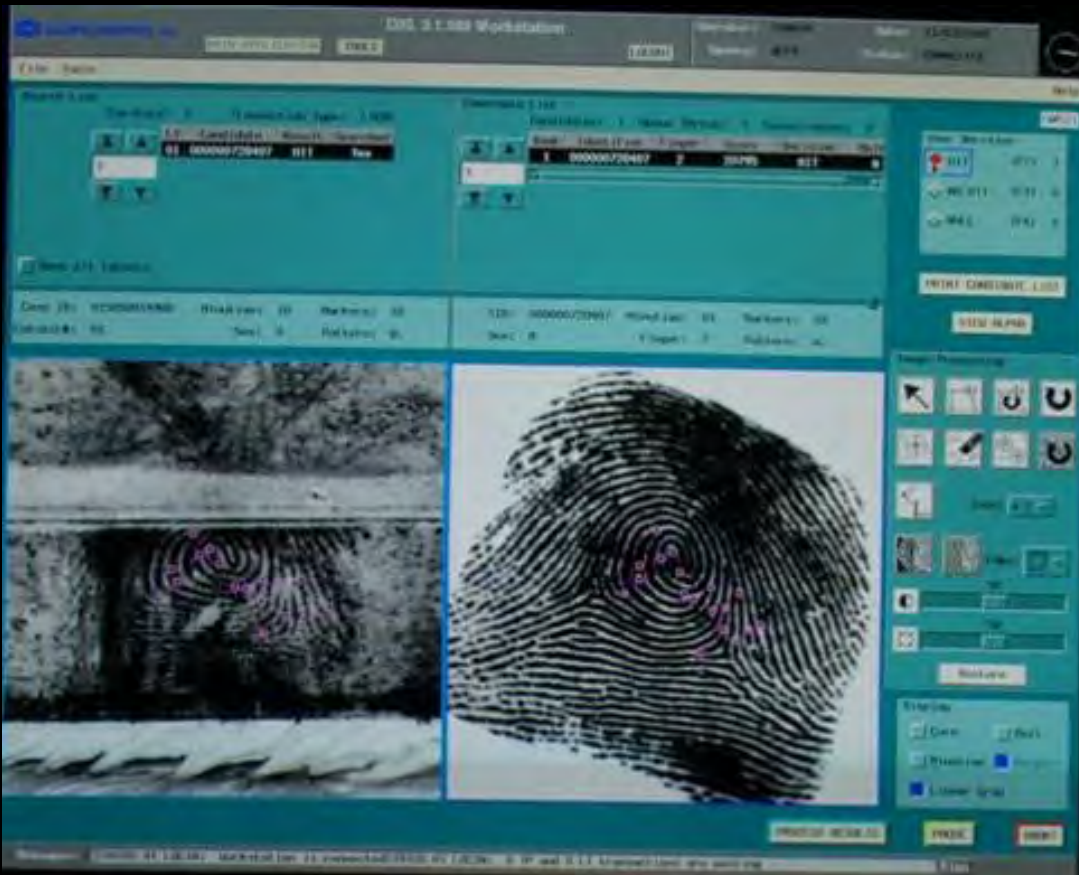
Denver Police Crime Laboratory

Amy Williams - Latent Print Unit

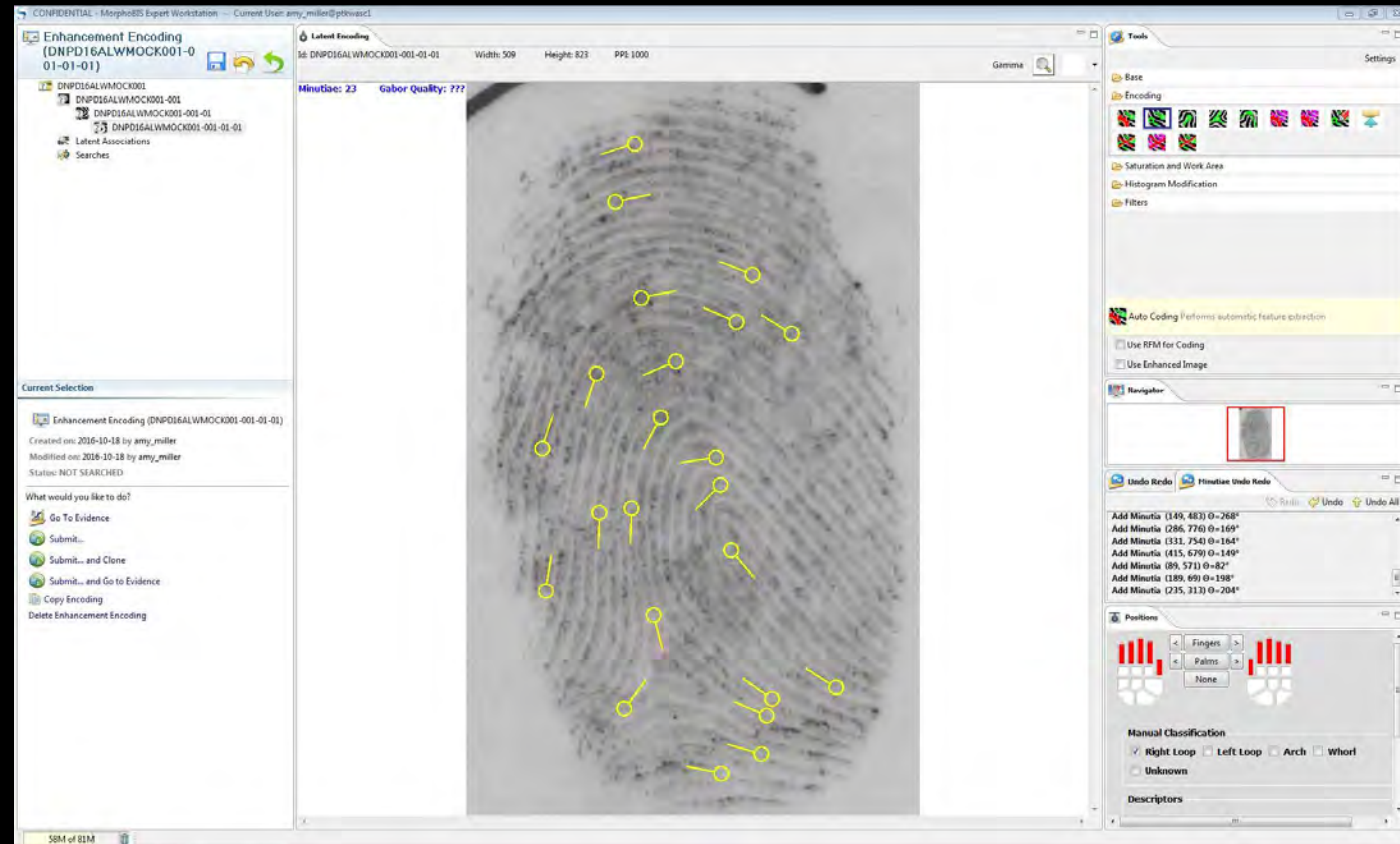


# Colorado AFIS

1993

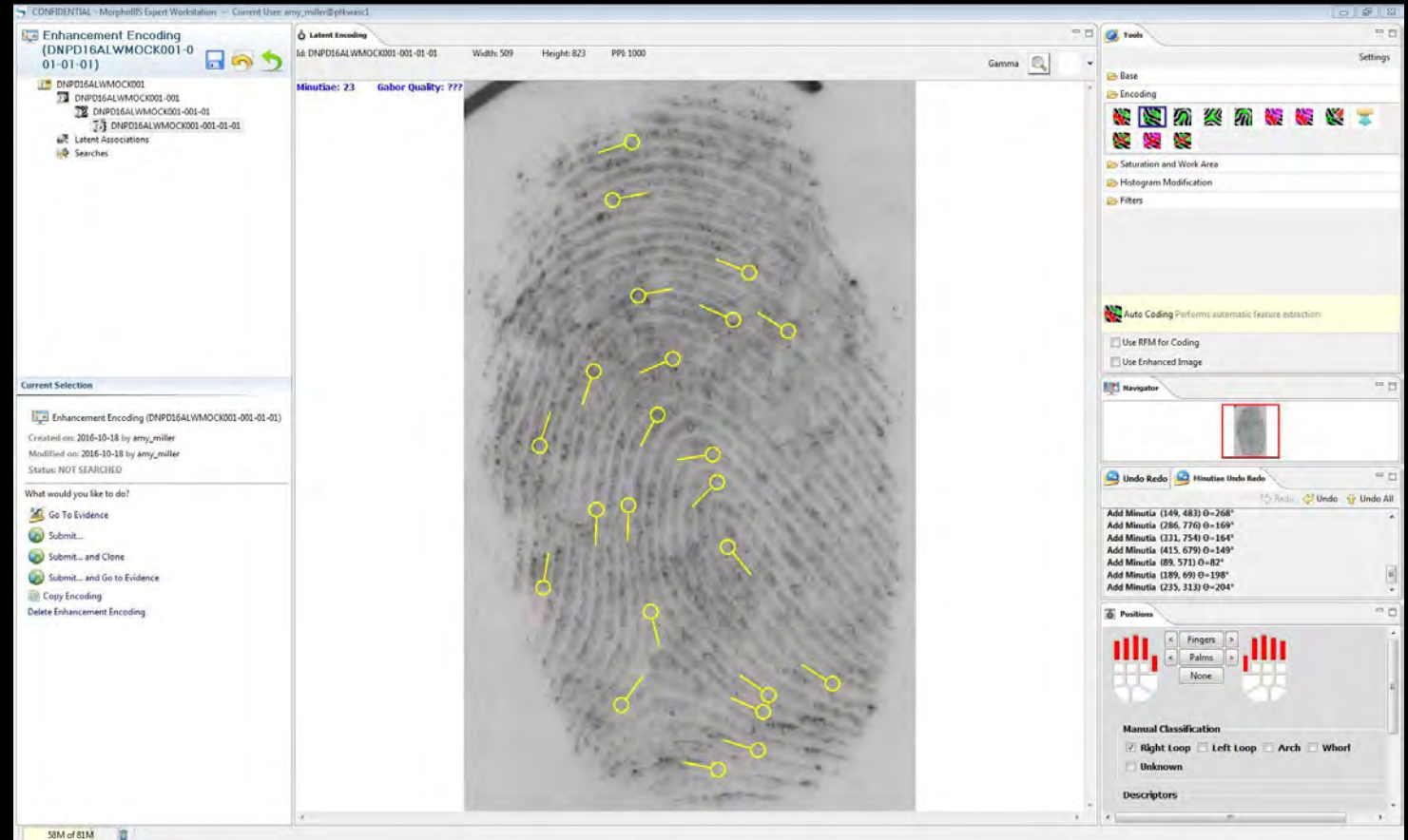


2013




# Colorado AFIS

- System upgrade in 2013
- Suitability threshold for AFIS entry is lower
- Response time reduced from 12-24 hours to 5-15 minutes
- Added capability for latent palm print searches



# Colorado AFIS

- Added direct access to state print record database

 **MorphoTrak**  
SAFRAN Group

Morpho Archive and Retrieval System

Logged in as: amy\_miller | [Log Out](#)

[MAIN MENU](#) | [SEARCH ARCHIVE](#)

### Search

☒ Hide Search Criteria

Name

☐ Sounds Like

SID

FBI

Sex

Race

DOB DOB

PCN

ORI

Record Type - Civil

Record Type - Criminal

Record Type - Document

DOA DOA

Submit Date Submit Date

Type of Transaction

☐ Include Orphaned Master Records



# Receiving Evidence

- Latent lift envelopes submitted by Crime Scene Unit
- Retrieved daily Latent Print Unit

Detective Assigned J. Williams 90267		GO# 2016-123456
Nature of Case Robbery - Bank		
Complainant Bank of America		
Complainant		
Address 5440 W 32nd Ave		Date 6/16/16
Crime Scene Unit C. Jones	ID # B15067	Crime Scene Unit ID #
FP Photos	FP Lifts	Description of Objects Printed and / or Photographed
	1	From front door exterior door handle
	2	From surface of teller #3 counter
# of Photos	<input type="checkbox"/> Suspects Listed	Description Front door POE

DPD 522 (Rev. 10/13)

MOCK CASE

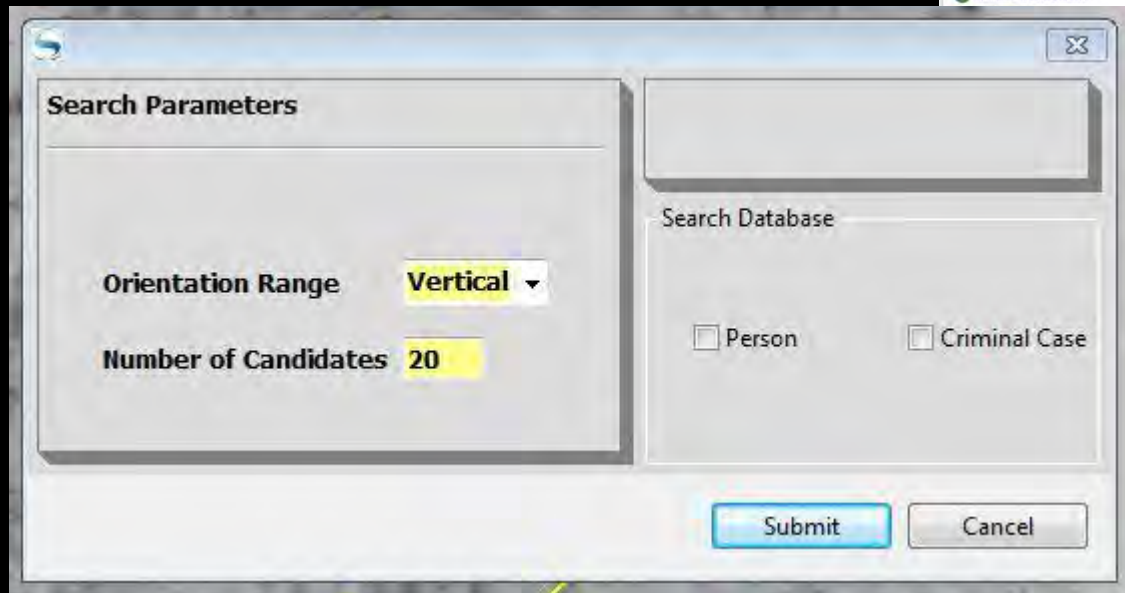
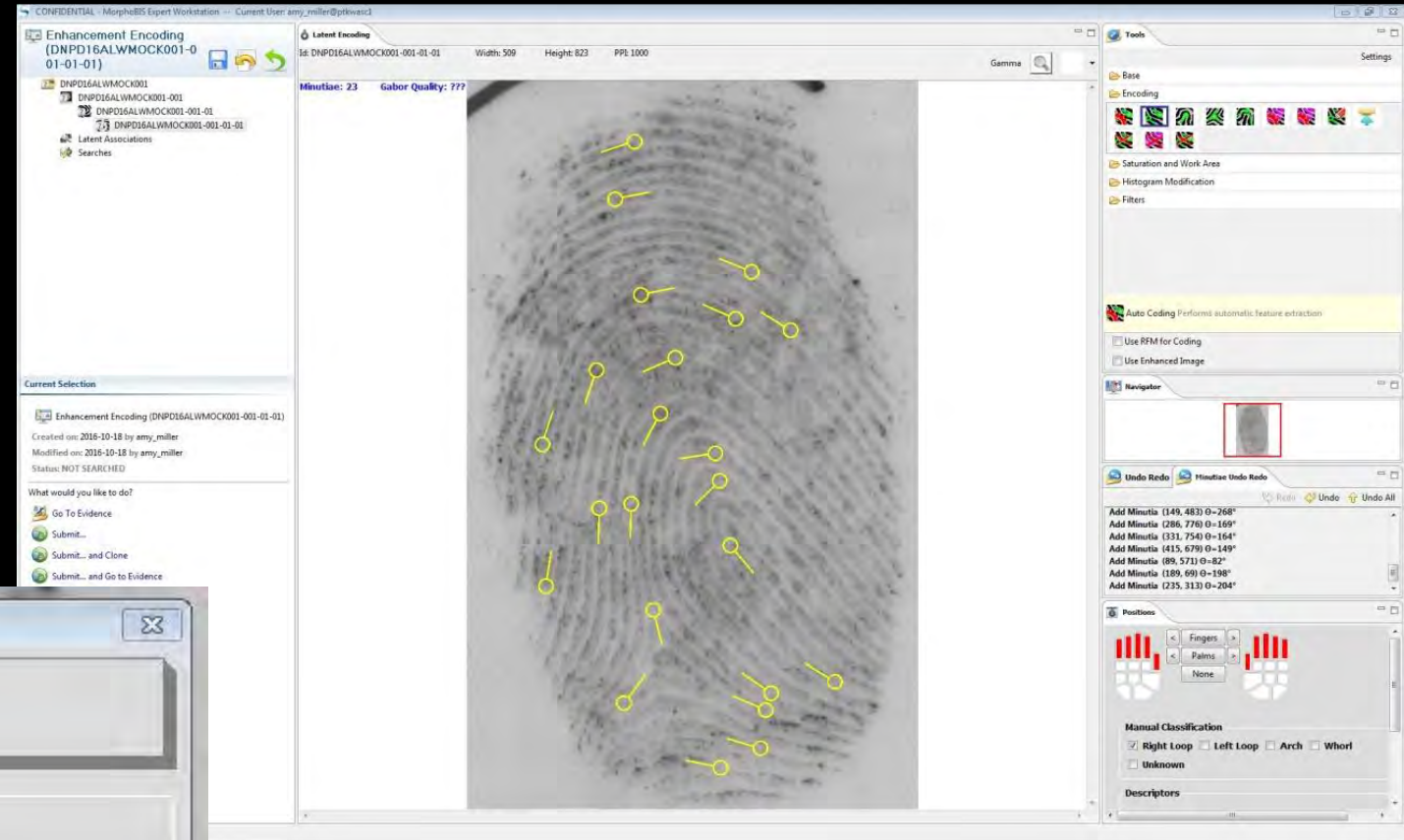
# Storing Evidence

- Latent lift envelopes stored securely in Kardex system in the Latent Print Unit



# Case Workflow

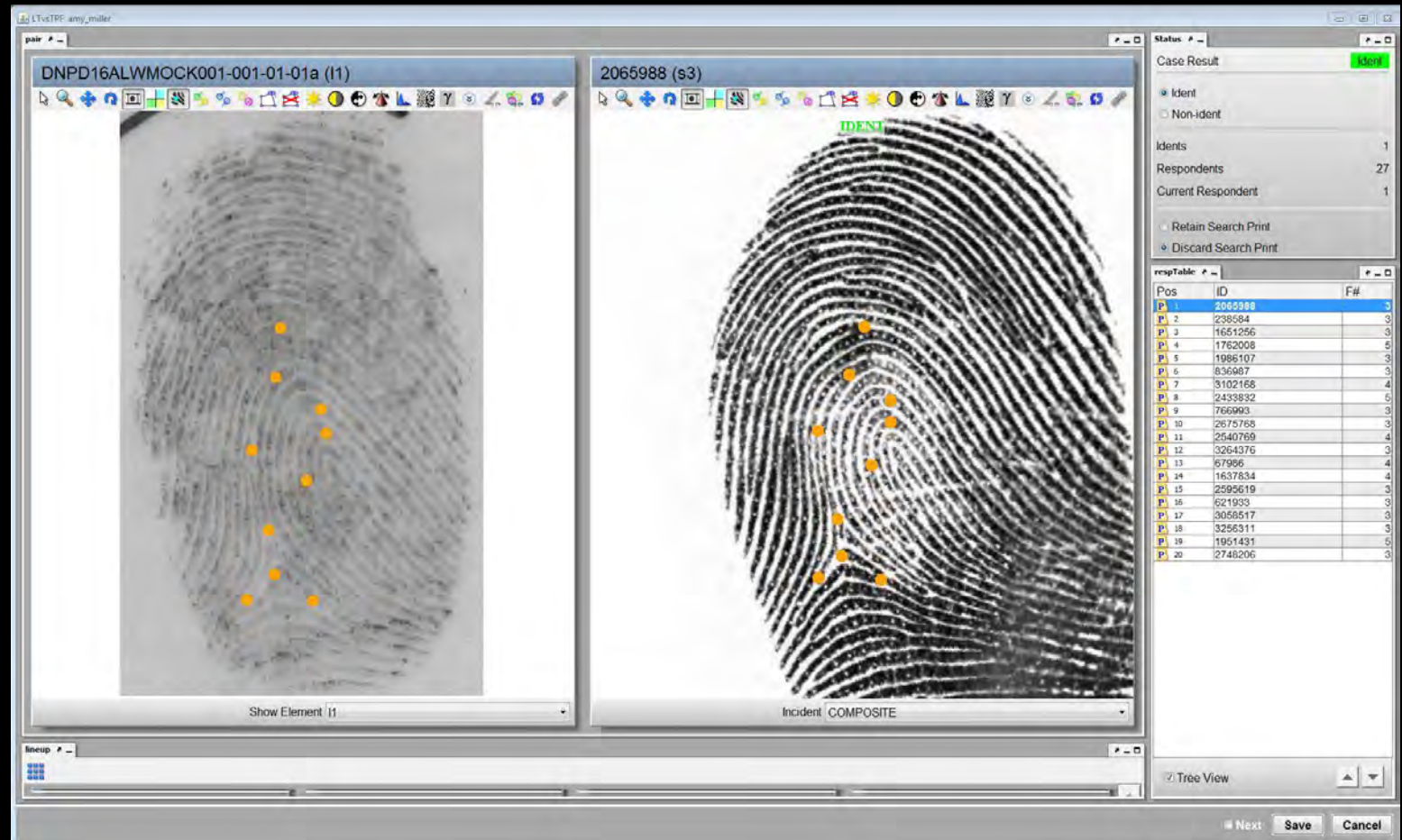
- Suitable latent prints are then entered into AFIS






# Case Workflow

- Candidate list returns within 5-15 minutes
- Examiner evaluates candidate list
- Examiner completes a manual comparison of any possible identifications



# Case Workflow

- Fingerprint and palm print cards printed directly from the AFIS terminal



**MorphoTrak**  
SAFRAN Group

Morpho Archive and Retrieval System

Logged in as: [amy\\_miller](#) | [Log Out](#)

MAIN MENU
SEARCH RESULTS

REGISTRATION EVENT SUMMARY
CARD DISPLAY
MUG SHOTS
FINGERPRINTS
PALM PRINTS
SCANNED CARD IMAGES
NOTES
ANNOTATIONS
DETAILED NIST VIEW

**Print Card Display View**


Template Sets

FBI Applicant Card


1 of 1

☐ Show Original Transaction

APPLICANT		LEAVE BLANK		TYPE OR PRINT ALL INFORMATION IN BLACK		LEAVE BLANK	
				LAST NAME		FIRST NAME	
				MIDDLE NAME			
SIGNATURE OF PERSON FINGERPRINTED		ALIAS AKA		ID		DOB	
RESIDENCE OF PERSON FINGERPRINTED				CODPD0000		DATE OF BIRTH	
				Denver PD		Month Day Year	
DATE	SIGNATURE OF OFFICIAL TAKING FINGERPRINTS	CITIZENSHIP	CTZ	SEX	RACE	HT	WT
20100526	SPARS	US		F	W	5' 05"	
EMPLOYER AND ADDRESS		YOUR NO		EYES		HAIR	
DENVER POLICE DEPARTMENT 1371 CHEROKEE ST		CODPD0000		BLU		BRN	
DENVER CO		FBI NO		PLACE OF BIRTH		POB	
80204 undefined		FBI		MN			
REASON FINGERPRINTED		ARMED FORCES NO		CLASS			
OSN - CRIMINAL JUSTICE EMPLOYEE OR POLICE		SOCIAL SECURITY NO					
OFFICER 0-0-0		MISCELLANEOUS NO		MN			




1. R THUMB




2. R INDEX




3. R MIDDLE



4. R RING



5. R LITTLE




6. L THUMB




7. L INDEX




8. L MIDDLE




9. L RING



10. L LITTLE



LEFT FOUR FINGERS TAKEN SIMULTANEOUSLY



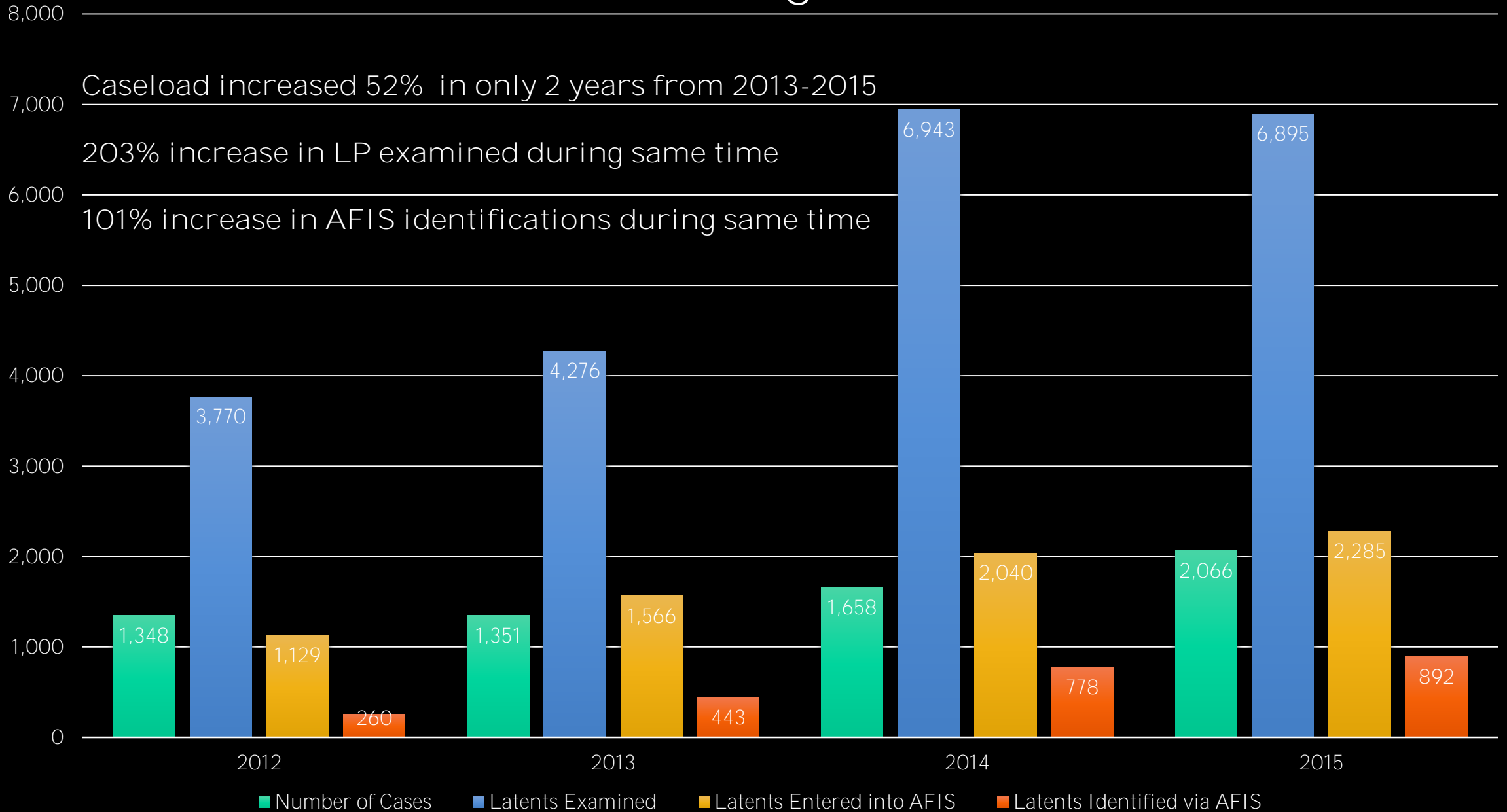
RIGHT FOUR FINGERS TAKEN SIMULTANEOUSLY

# Efficient and Effective

- Can provide verbal notification to Detectives
- Detectives are required to follow up on any AFIS hit reports within 24 hours
- Identified suspects often arrested same day as the verbal notification



# Challenges



# Overcoming Challenges in the Latent Print Unit

- Prioritize crimes against persons cases
- NIJ funded efficiency study completed in 2013
- Limited comparisons in cases with large quantities of latent evidence
- Expected to hire a latent print examiner by end of 2016
- Cross trained examiners from other units in the laboratory
- Continue to request budget funds for purchase of additional AFIS terminals

# NIBIN

Denver Police Crime Laboratory

Zachary Kotas - Firearms Unit



# “Real-Time” NIBIN

- Proactive approach!
- NIBIN is separate from normal casework
- Strive for 48 hour turn around
  - Entry into property → NIBIN correlation
- Must be Fast AND Accurate



# Potential Slowing Aspects

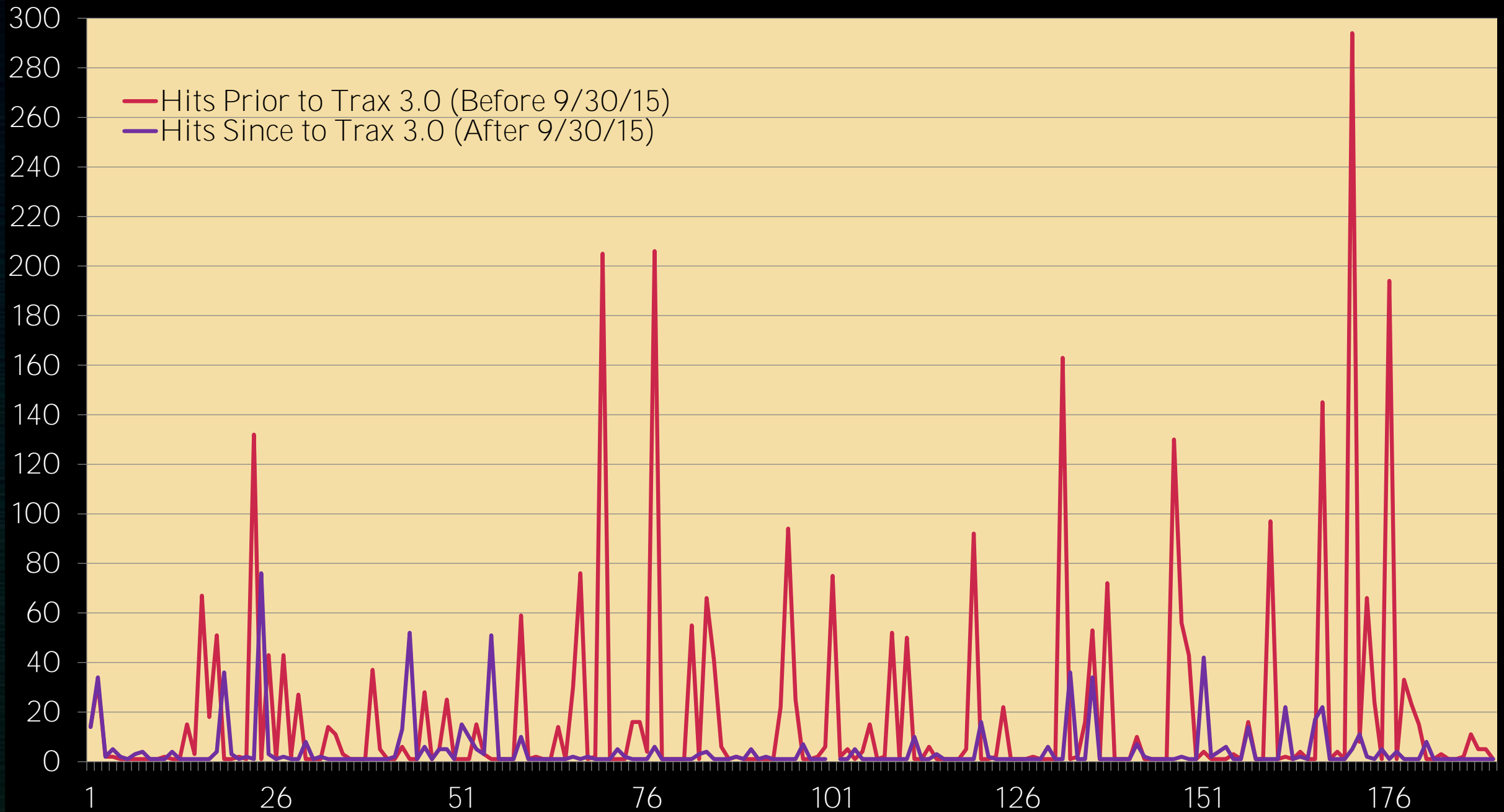
- DNA on firearms
  - Swab all textured areas
- Latent prints on firearms
  - Wear gloves with all firearms
- Need a lab request? Need to issue a report?
  - Change SOP
- Correlation reviews

Hit Location in list

Hits Prior to Trax 3.0 (Before 9/30/15)  
Hits Since to Trax 3.0 (After 9/30/15)

1 26 51 76 101 126 151 176

NIBIN Hits





# ISO 17025

- Denver has been ISO 17025 accredited by ANAB since 2008.
- **“Real-Time” NIBIN works with accreditation**
  - Write NIBIN procedures into Standard Operating Procedures (SOP)
  - Write entry reports and NIBIN hit notifications

# Entry Report

DENVER POLICE DEPARTMENT  
CRIME LABORATORY  
FIREARMS UNIT  
NIBIN ENTRY REPORT

GO/Case Number: [REDACTED]  
Laboratory Number: [REDACTED]

1371 CHEROKEE STREET  
DENVER, CO 80204  
CRIMELAB@DENVERGOV.ORG

Date of Report: 04/27/2015

**THE INFORMATION IN THIS REPORT IS PRESUMPTIVE ONLY**

The firearm(s) and magazine(s) (if present) of item(s) # [REDACTED] was/were checked out of the Property Management Bureau on 4/27/15.

☒ The above firearm(s) was/were swabbed for possible cellular material prior to test firing by Zachary Kotas. All textured surfaces, front and rear sights and magazine lips and base were swabbed. The swabs were packaged in a glassine envelope and attached to the inside of the firearm box lid(s).

☒ The firearm(s) of item(s) # [REDACTED] was/were test-fired by [REDACTED] and evaluated for entry into the National Integrated Ballistic Information Network (NIBIN).

☒ Entered into the NIBIN system.

☐ Not suitable – **not** entered into the NIBIN system.

☐ The firearm(s) of item(s) # [REDACTED] was/were **not** test-fired:

- ☐ Item did not function properly  
☐ Other:

☐ The submitted test-fired cartridge case(s) of item(s) # [REDACTED] was/were entered into the NIBIN system on [REDACTED].

**Remarks:**

The cartridge case(s) of item(s) # [REDACTED] was/were checked out of the Property Management Bureau on 4/27/15 and evaluated for entry into the National Integrated Ballistic Information Network (NIBIN) by Zachary Kotas:

☐ A cartridge case from this(ese) item(s) was/were entered into the NIBIN system.  
Number of items entered: [REDACTED]

☒ A cartridge case from this item was **not** entered into the NIBIN system:

- ☒ Item is associated with the above firearm  
☐ Item was not suitable for entry  
☐ Other:

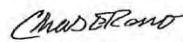
☐ The submitted cartridge case(s) of item(s) # [REDACTED] was/were entered into the NIBIN system on [REDACTED].

**Remarks:**

**NOTE: TEST-FIRING AND/OR EVALUATION FOR NIBIN ENTRY DOES NOT CONSTITUTE A COMPLETE FUNCTION CHECK AND/OR LABORATORY EXAMINATION OF THESE ITEMS.**

**COMPLETE LABORATORY ANALYSES, INCLUDING MECHANICAL FUNCTION CHECKS, WILL REQUIRE A LABORATORY REQUEST.**

Assigned Analyst:



Charles Reno  
Forensic Scientist

# Hit Notification

DENVER CRIME LABORATORY  
FIREARMS UNIT NIBIN HIT NOTIFICATION

1371 CHEROKEE STREET  
DENVER, CO 80204

THIS IS A NOTIFICATION OF INVESTIGATIVE LEADS DUE TO NIBIN ENTRY, IT IS *NOT* A LABORATORY REPORT. FOR A COMPLETE ANALYSIS AND A FORMAL LABORATORY REPORT, PLEASE SUBMIT A LABORATORY REQUEST TO THE FIREARMS UNIT REQUESTING THE EVIDENCE IN THE BELOW CASES BE COMPARED TO EACH OTHER.

Date of Notification: 4/22/2016

NIBIN HIT #16-60


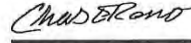
The following cases have been associated through the National Integrated Ballistic Information Network (NIBIN) Database:

GO #2016- [REDACTED] DETAILS:

NIBIN Number: DPD16-247445 (TF-795815-1C)  
Property Bureau #: 795815-1  
Offense: Aggravated assault  
Evidence Type: SAR Arms 9mm Luger semiautomatic pistol, serial number T110213G04595  
Occurrence Date: 4/21/16  
Location: 3295 S. Tamarac Dr.  
Assigned Detective: Det. [REDACTED] Gang

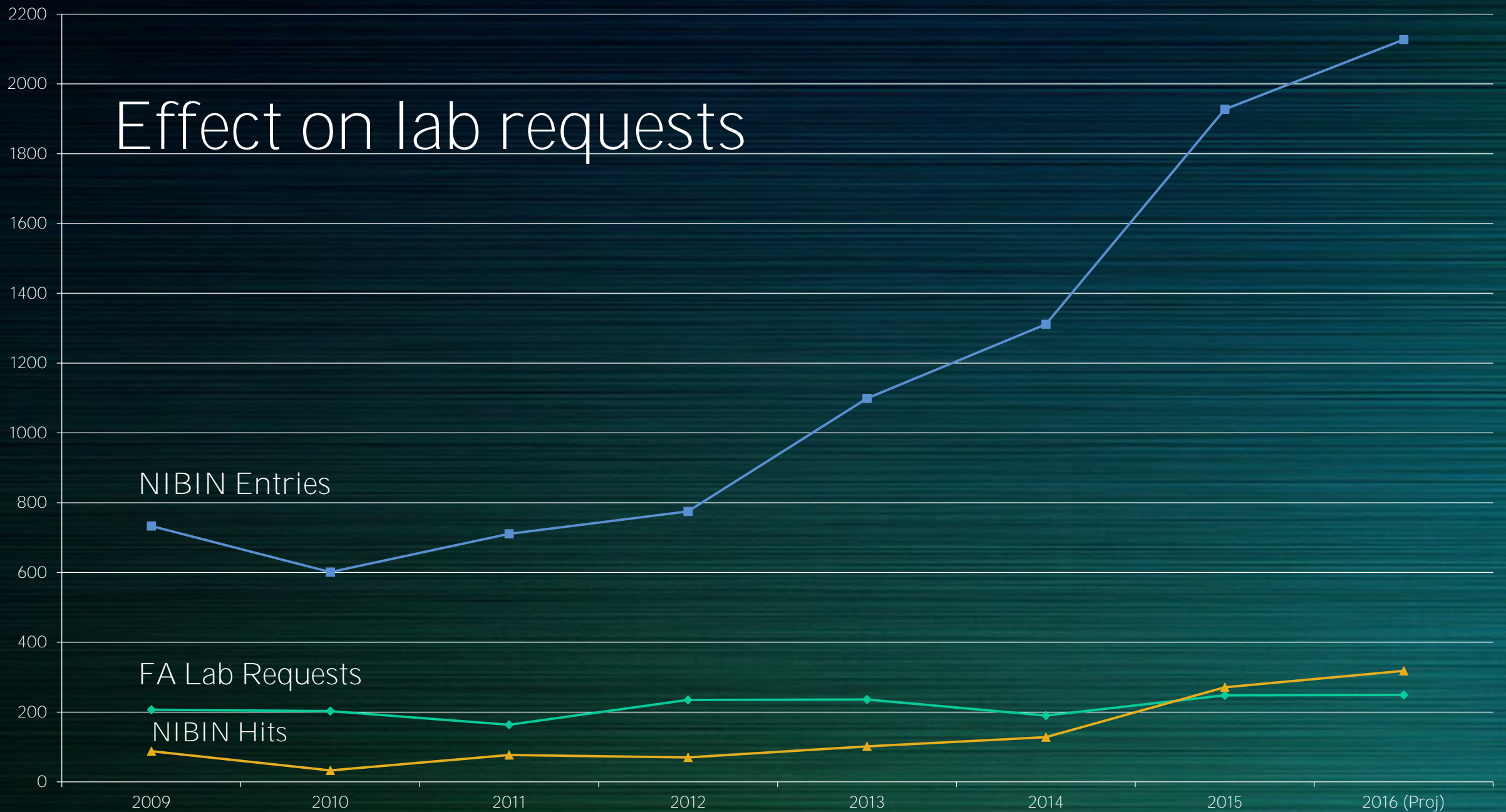
GO #2016- [REDACTED] DETAILS:

NIBIN Number: DPD16-187588 (EX-790221-1C)  
Property Bureau #: 790221-1  
Offense: Aggravated assault  
Evidence Type: Two (2) 9mm Luger cartridge cases  
Occurrence Date: 3/24/16  
Location: 8501 E. Alameda Ave.  
Assigned Detective: Det. [REDACTED] D3

HIT CONFIRMED BY:	Zachary S. Kotas, #B08048	Charles E. Reno, #B07087
NOTIFICATION COMPLETED BY:	ADMINISTRATIVE REVIEW BY:	
		
Zachary Kotas Forensic Scientist	Charles Reno Forensic Scientist	



# Effect on lab requests



# EVERYONE must “Buy In”

- Submitting agency
  - Fast collection and submittal of evidence
- Laboratory
  - “Real-Time” NIBIN SOP’s
- Submitting agency and ATF
  - Investigate NIBIN hits

# Crime Gun Intelligence Center (CGIC)

- January 2013
- Consists of:
  - Laboratory/NIBIN Group
    - CGIC Coordinator (ATF Contractor)
    - Five FA/TM Examiners from three agencies
    - Two ATF Industry Ops Investigators
    - Fulltime NIBIN Technician (ATF Contract)
  - Investigative Group
    - Four ATF Special Agents
    - **Five Task Force Officer's from three agencies**
    - Two Parole Officers
    - Three Intelligence Research Specialists



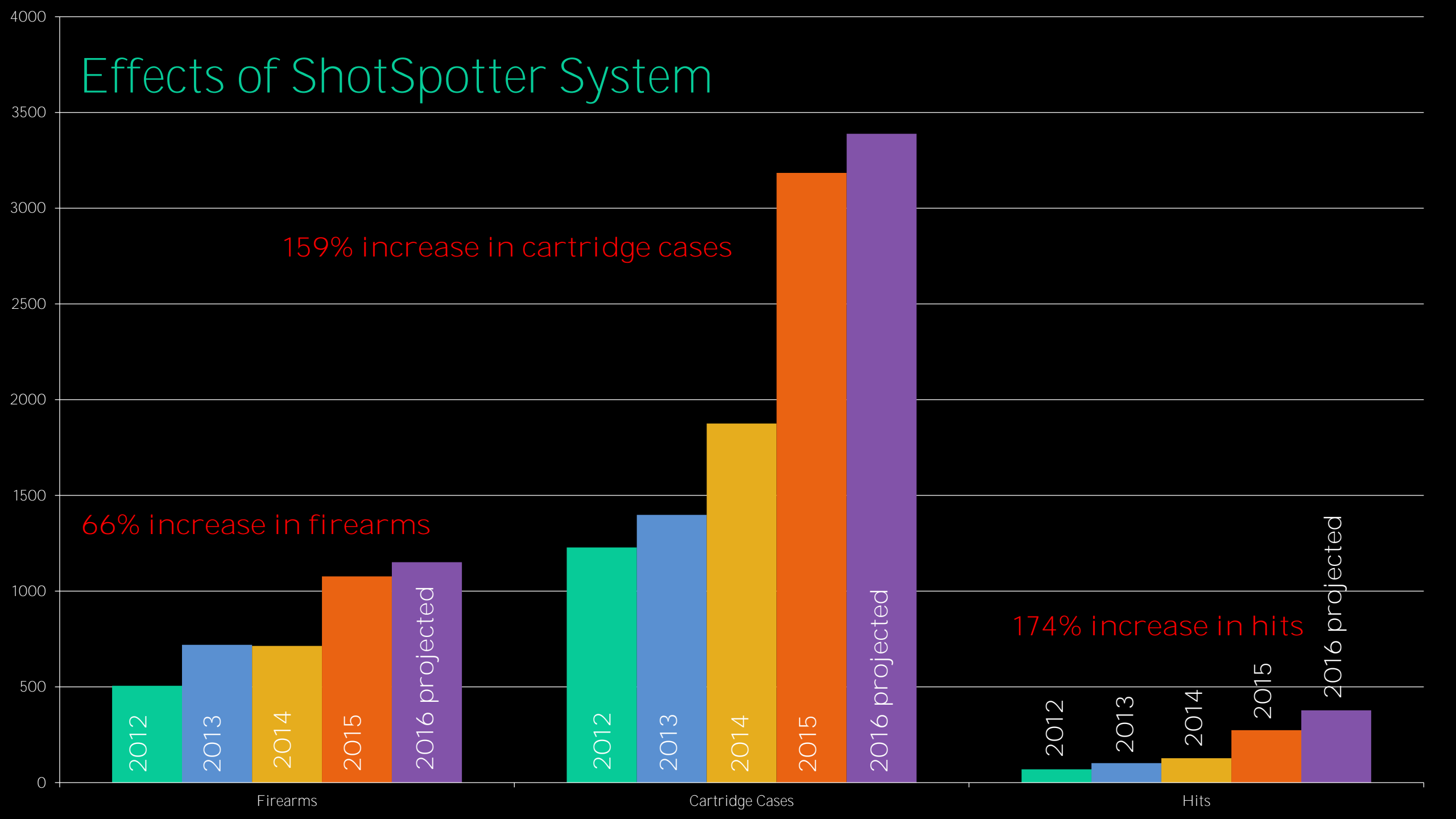
# NIBIN hit referral

- Issued by the CGIC Coordinator
  - Decide which NIBIN hits to refer to the CGIC investigators
  - Detailed synopsis of each case
    - Witness statements
    - Possible suspects
    - Commonalities between cases
  - Look for
    - Level of violence
    - Solvability

# ShotSpotter

- 2015: ATF purchased 3 square miles of coverage in Northeast Denver
  - 337 Total Alerts
  - 67% - Alerts had no corresponding 911 Call
  - 60 – ShotSpotter alerts that hit in NIBIN
  - 148 – Crimes linked to the 60 NIBIN hits
- 2016: increase 6 square miles

# Effects of ShotSpotter System







# Questions?

Greggory Laberge – Crime Laboratory Director

[greggory.laberge@denvergov.org](mailto:greggory.laberge@denvergov.org)

Zachary Kotas – Firearm Examiner

[zachary.kotas@denvergov.org](mailto:zachary.kotas@denvergov.org)

Charles Reno – Firearm Supervisor

[charles.reno@denvergov.org](mailto:charles.reno@denvergov.org)

Amy Williams – Latent Print Supervisor

[amy.willilams@denvergov.org](mailto:amy.willilams@denvergov.org)

Susan Berdine – FBIO / DNA supervisor

[susan.berdine@denvergov.org](mailto:susan.berdine@denvergov.org)