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)
Denver’s Integrated DNA Cold Case Project: Elements for Success

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?
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
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
Prosecutors

Forensic Scientists

Investigators

DENVER
THE MILE HIGH CITY
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
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
Receiving Evidence

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

Caseload increased 52% in only 2 years from 2013-2015

203% increase in LP examined during same time

101% increase in AFIS identifications during same time
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**
Hits Prior to Trax 3.0 (Before 9/30/15)

Hits Since to Trax 3.0 (After 9/30/15)
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
DENVER POLICE DEPARTMENT
CRIME LABORATORY
FIREARMS UNIT
NIBIN ENTRY REPORT

GOC/Case Number: [blank]
Laboratory Number: [blank]

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) # 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 plasticine envelope and attached to the inside of the firearm box lid(s).

☐ The firearm(s) of item(s) was/ were test-fired by Zachary Kotas 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) # was/ were not test-fired:
☐ Item did not function properly
☐ Other:

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

Remarks:

The cartridge case(s) of item(s) # 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(cases) item(s) was/ were entered into the NIBIN system.

Number of items entered:

☐ 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) # was/ were entered into the NIBIN system on .

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
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 #2016-31 DETAILS:**

<table>
<thead>
<tr>
<th>NIBIN Number:</th>
<th>DPD16-247445 (TF-795815-1C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property Bureau #:</td>
<td>793815-1</td>
</tr>
<tr>
<td>Offense:</td>
<td>Aggravated assault</td>
</tr>
<tr>
<td>Evidence Type:</td>
<td>SAR Arms 9mm Luger semiautomatic pistol, serial number T11021304595</td>
</tr>
<tr>
<td>Occurrence Date:</td>
<td>4/21/16</td>
</tr>
<tr>
<td>Location:</td>
<td>3295 S. Tamarac Dr.</td>
</tr>
<tr>
<td>Assigned Detective:</td>
<td>Det. [REDACTED] Gang</td>
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</tbody>
</table>

**GO #2016-31 DETAILS:**

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

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

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*Testing is accredited under the laboratory’s ISO/IEC 17025 accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation AT-1645.*
Effect on lab requests

NIBIN Entries

FA Lab Requests

NIBIN Hits
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

159% increase in cartridge cases

66% increase in firearms

174% increase in hits
Questions?

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