



## Burglars Go Bust: The DNA Field Experiment

**B**etween November 2005 and July 2007, the Office of Justice Programs' National Institute of Justice (NIJ) provided funding to five communities (Los Angeles, Topeka, Denver, Phoenix, and California's Orange County) to take part in a study of the effectiveness of DNA forensics in the investigation of property crimes.

Participating communities collected potential sources of biological evidence from up to 500 crime scenes between November 2005 and July 2007. Project protocol assigned half of each area's cases to a control group, while biological material from the others underwent DNA testing. The majority of crime scenes sampled were residential burglaries, with the remainder coming from commercial burglaries and automobile thefts.

A detailed report on study results, *The DNA Field Experiment: Cost-Effectiveness Analysis of the Use of DNA in the Investigation of High-Volume Crimes*, can be downloaded from [www.ojp.usdoj.gov/nij/topics/forensics/dna/property-crime/welcome.htm](http://www.ojp.usdoj.gov/nij/topics/forensics/dna/property-crime/welcome.htm). Key results are summarized below. See sidebars for highlights of study outcomes in three participating cities (Denver, Los Angeles, and Phoenix).

Key study results:

- Cases with DNA evidence yielded twice as many suspects identified and arrested, and more than twice as many cases accepted for prosecution. Departments obtained suspect identification via Combined DNA Index System (CODIS) hits at twice the rate generated by the FBI's Automated Fingerprint Identification System (AFIS).
- Additional costs incurred by departments averaged \$4,515 per suspect identification and \$14,178 per suspect arrest. Suspects identified with DNA evidence, however, had far more serious criminal histories. Thus, apprehension of these suspects seemed likely to have a disproportionately higher payoff in reducing

the number of burglaries in a community, and potentially other types of serious crime as well.

- DNA samples collected by patrol officers seemed just as likely to yield good evidence than those collected by forensic technicians.
- Blood and saliva samples yielded significantly more usable CODIS profiles compared with cell samples obtained from items potentially touched by a suspect, such as a doorknob or a computer cable.
- Crime scenes where stolen property had been left unlocked yielded fewer good samples, as did crime scenes investigated between 2 p.m. and 10 p.m. (when departments often are at their busiest).

"We'd really like to get the message out to police departments around the country that there is a lot of information, some good lessons learned, in this report," says Katherine Browning, NIJ program manager. The study used project data to complete its key goal of a cost-effectiveness analysis. Departments could find this information useful in requesting funding to expand their DNA programs to include property crimes.

"It's best understood as a project that sought to test different approaches to the use of DNA as an investigative tool, and not as a test of established best practices, although Denver most closely followed established best practices and had the best outcomes," Browning says.

Browning says NIJ is discussing the possibility of a 1-year followup project to examine convictions and outcomes.

**For more information, contact Katherine Browning, NIJ program manager, at 202-616-4786 or [Katherine.browning@usdoj.gov](mailto:Katherine.browning@usdoj.gov).**

## WHAT IS CODIS, ANYWAY?

Throughout this related group of articles are frequent references to the Combined DNA Index System, or CODIS. CODIS serves as an umbrella term describing all DNA index systems that match DNA profiles from crime scenes to a group of cataloged DNA profiles, some from individuals who have been identified by name, and others of whom, while not identified, have left DNA at the crime scene.

CODIS has three hierarchical components: national, State, and local. The national database is managed by the FBI under the authority of the DNA Act of 1994, and management of State and local databases varies by State. Each level has its own protocols and eligibility criteria; generally, criteria are stricter at the higher levels.

**For more information, visit [www.dna.gov/uses/solvingcrimes/cold\\_cases/howdatabasesaid/codis/](http://www.dna.gov/uses/solvingcrimes/cold_cases/howdatabasesaid/codis/).**

## DENVER: NOT IN OUR TOWN

*It's just another day on the job. Get up, have breakfast, grab a second cup of coffee, get in the car, drive to the job site. Make sure all the neighbors have left for work. Put on gloves, of course, and stroll to the unlocked window in the garage.*

*Another day, another break-in. Except this time, a beer can from the fridge that was left behind on the kitchen counter gets picked up by a law enforcement officer. No fingerprints, but there is saliva. Saliva that generates a CODIS hit. And suddenly, burglaries in this quiet residential neighborhood drop by an astonishing percentage.*

During the 18-month timeframe of the DNA Field Experiment, the Denver Police Department arrested 95 individuals suspected of being prolific burglars, most of whom committed approximately 200 burglaries per year.

"They're getting the message, don't do it in Denver," says Gregory LaBerge, director of the city's Crime Laboratory Bureau, adding that Denver followed up its initial training push by returning to the city's police stations and showing officers the effects of the program's success.

"We'd ask, who collected that cigarette butt, and then tell the officer, 'you got a hit, and after that, burglary in your neighborhood fell 40 percent,'" LaBerge says. "It showed them what was in it for them, and told them they did a good job. They really liked that. None of

these officers had ever set foot in a crime lab, and initially they thought this was just another program. We showed them results, and now they think about DNA."

Keys to Denver's results-oriented approach included "training every boot on the ground in the city"; focusing on blood and saliva, evidence that LaBerge and his colleagues considered most valuable; and including the district attorney's office from the beginning. Denver opted not to collect touch samples because of the potential for confounding results with DNA samples from individuals who legitimately touched objects, such as property owners and customers at businesses. The partnership with the district attorney's office was essential because DNA matches were seen as useless without later prosecution.

The approach to officer training taken by the crime lab and the Denver District Attorney's Office started with getting buy-in and participation from chiefs, commanders, sergeants, and other administrators, as well as the district attorney's office, which agreed to file John Doe warrants on unidentified DNA to hold cases open. Officers received roll call training, repeated at 3-month intervals, and the city produced a DVD on identifying and collecting biological evidence and offered other training tips.

"In projects like this, you've got to include everybody," LaBerge says. "We've used a team approach to everything in Denver for a long time. We didn't just make the assumption that we knew how to train patrol officers; we sat down with commanders and got their input. We made sure they knew that burglary evidence might generate cross hits that would impact investigation of rapes and other violent crimes."

"Some people looked at this as a project, but we looked at this as a crime reduction strategy, part of a 5-year program," he adds. "These projects can have an overall effect on crime in your city, not just on the targeted crime. Compared to other cities the same size, Denver's overall crime rate took a huge drop."

LaBerge says that using this decline as a selling point, the partners from the police department, crime lab, and prosecutor's office were able to persuade the city to fund the new DNA policy on an ongoing basis, in spite of the city's tight budget.

**For more information on the Denver portion of the project, see chapter 4 in *The DNA Field Experiment report*, or contact Gregory LaBerge at 720-913-6561, e-mail [labergeg@ci.denver.co.us/](mailto:labergeg@ci.denver.co.us/).**

## LOS ANGELES: NO DOUBTS ABOUT THE BENEFITS

*Biological evidence collection? Laboratory testing? CODIS searches? Great tools to use in investigations of violent homicides and sexual assaults, where the likelihood of a perpetrator's leaving DNA evidence behind is high and the magnitude of the crime is great. For burglary cases, maybe not so much. The processing expenses outweigh the benefits to society.*

*At least that's the way some people thought before the DNA Field Experiment took place.*

"It made a believer out of me," says Commander Harlan Ward of the Los Angeles Police Department (LAPD), one of the key players in coordinating LAPD's participation in the project.

"I was not particularly knowledgeable about the benefits of using DNA for solving property crimes," he says. "I thought it was just something very expensive. Once I saw how many crimes were being solved and the type of suspects who were being arrested, I was convinced that this is the way to go in the future."

The project coordinators in Los Angeles feel so strongly about the value of the processes developed during the DNA Field Experiment that they plan to approach the city council and the mayor to ask for funding to continue the project after the project report is published.

"Going into this, even I had certain prejudices about whether it would be worthwhile," says Director Greg Matheson of the LAPD Criminalistics Laboratory. "When I started seeing the kind of people we were taking off the street, people with a long history of violent crime, I realized that even if we only pull these people off the street for 3 years on a burglary conviction, it's a huge benefit to society. And if it's a third strike, it could be 20 years or more."

Ward cited the example of one suspect identified during the project who, at age 53, had 35 prior arrests and 23 prior convictions for a wide variety of offenses. "If you contrast the expense of using DNA with the burden he's placing on society, the benefits definitely outweigh the expense."

This belief in the value of the project came after LAPD worked its way through an initial learning curve that included training issues, getting officers to call in potential cases, lining up volunteer latent print technicians and crime scene photographers to learn to perform collection duties (LAPD elected to reserve forensic scientists for high-profile cases), and teaching these officers and technicians to have realistic expectations. Los Angeles chose to take the approach of only collecting samples that appeared likely to have been handled by the suspect and only the suspect, such as soda or beer containers or cigarette butts. This contrasted with the approach of nearby Orange County, which collected samples from items such as computer cables and doorknobs and obtained potential evidence from a higher number of cases, but registered a lower percentage of uploadable profiles and CODIS hits. LAPD's approach, although highly successful, may also have contributed to the learning curve.

"Using DNA to solve property crimes is kind of a new animal for LAPD patrol officers," says Ward. "The crime lab might take 30 days or so, and for them, that's a long time."

Because the initial training provided to those officers was too cursory in nature, LAPD went back to the participating stations in the San Fernando Valley to give additional training and to distribute copies of the National Institute of Justice brochure, *What Every Law Enforcement Officer Should Know About DNA Evidence*. Other additional training activities included a DNA awareness seminar and a department-developed DVD; these tools ensure that a training model will be in place should the program continue.

"When we did the training, we saw an improvement in notification, and after a couple of months, it would tail off, so we asked the stations to show the DVD again," Matheson says. "The reality is, the poor officer on the street has so many things to worry about, unless he regularly goes to burglary scenes, he'll forget about DNA as a tool unless we remind him."

Ward, Matheson, and their project colleagues hope they do need to do more training in the future, because that would mean that LAPD has resumed collecting biological evidence related to property crimes. Matheson added the caveat that when resources are limited, collecting DNA from homicides and sexual assaults should take priority.

"It's also great that the different locales involved in this project took different approaches," Matheson says. "It will provide a variety of options for anyone who reads this report and wants to set it up in their jurisdiction. They can see the advantages and disadvantages of the different protocols."

***For more information on the Los Angeles portion of the project, see chapter 5 in *The DNA Field Experiment report*, or contact Commander Harlan Ward, 818-644-8080, e-mail [harlan.ward@lapd.lacity.org](mailto:harlan.ward@lapd.lacity.org), or Greg Matheson, 323-415-8112, e-mail [B8927@lapd.lacity.org/](mailto:B8927@lapd.lacity.org/).***

## PHOENIX: TOOLS AND TRAINING FOR ALL

*The call comes in from dispatch: a homeowner has just arrived home from work to find his back door standing open, his computer, television, and stereo missing. Unfortunately, this represents an all-too-typical call for many law enforcement officers, so typical they have the routine down pat from the day they leave the police academy.*

*In metropolitan Phoenix, however, procedures have changed just a bit. In Phoenix, procedures now include retrieving a DNA evidence collection kit from the patrol car and using recent training to collect items for potential biological evidence testing.*

“Prior to this, we provided training only to specialists,” says Jody Wolf, assistant crime lab administrator for the Analytical Services Section of the Phoenix Police Department Crime Laboratory. “We ordered all the pieces for evidence collection kits and assembled them ourselves on a very limited basis. When we started this program, we realized that not only did we have to provide training for an entirely new audience, we also couldn’t keep up with the demand for the kits.”

Phoenix went through a bidding process, and as a result, several vendors now offer the kits on a commercial basis to any police department that wants to purchase them. This left Wolf and her colleagues with more time to provide officer training, and they needed it: some 942 officers from 2 precincts received instruction in 42 classes as part of the DNA Field Experiment. (The Phoenix crime laboratory continues to provide training on an ongoing basis, with the goal of eventually training the entire department.)

The training process also included providing patrol officers with phone numbers to the laboratory and telephone assistance during business hours. Also, if responding officers had yet to complete the training program, but thought a case had potential for DNA evidence, lab staff would respond and provide help, says the crime lab’s Heather Fairchild, forensic scientist III.

“We invested resources into training as many officers as possible, and worked with precinct management to encourage officers to start collecting evidence,” Wolf says. “Prior to the project, we typically processed violent crime cases, and we had no working relationship with the burglary detectives. We didn’t know them, they didn’t know us, they weren’t very familiar with a CODIS hit, and there was just a huge learning curve at the beginning. Now they know the value of DNA evidence. For us, it’s a win-win situation, because we’ve strengthened our relationship with another stakeholder in the criminal justice community.”

This process created a better working relationship not only between officers and the lab, but also between those two divisions and the local prosecutor’s office. Prosecutors were willing to move forward with adjudication of cases while waiting for confirmation of CODIS hits, speeding up the process by approximately 30 days. This ongoing strong relationship has resulted in a huge increase in the number of cases presented for DNA analysis, which has created some resource issues, according to Wolf, but the department continues to work on ways to maintain the use of DNA in investigating property crimes.

**For more information on the Phoenix portion of the project, see chapter 7 in *The DNA Field Experiment report*, or contact Jody Wolf at 602-534-8751, e-mail [jody.wolf@phoenix.gov/](mailto:jody.wolf@phoenix.gov/).**

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