



NATIONAL INSTITUTE OF JUSTICE
ANNUAL REPORT

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NIJ

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Strengthen Science • Advance Justice

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To the President, the Attorney General and the Congress:

It is my honor to transmit the National Institute of Justice's annual report on research, development and evaluation for fiscal year 2013, pursuant to Title 1 of the Omnibus Crime Control and Safe Streets Act of 1968 and Title II of the Homeland Security Act of 2002.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Gregory K. Ridgeway". The signature is fluid and cursive, with the first name "Gregory" and last name "Ridgeway" clearly distinguishable.

Gregory K. Ridgeway, Ph.D.
Acting Director, National Institute of Justice

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NIJ'S STRATEGIC CHALLENGES 2013

NIJ is committed to transforming the criminal justice field by meeting these challenges:

1. **FOSTERING SCIENCE-BASED CRIMINAL JUSTICE PRACTICE:** Supporting scientific research to ensure the safety of families, schools and communities.
2. **TRANSLATING KNOWLEDGE TO PRACTICE:** Disseminating scientific research to criminal justice professionals to advance what works best in crime prevention and reduction.
3. **ADVANCING TECHNOLOGY:** Building a more efficient, effective and fair criminal justice system.
4. **WORKING ACROSS DISCIPLINES:** Drawing on physical, forensic and social sciences to reduce crime and promote justice.
5. **ADOPTING A GLOBAL PERSPECTIVE:** Understanding crime rates and their social contexts at home and abroad.

CHAPTER 1:

FOSTERING SCIENCE-BASED CRIMINAL JUSTICE PRACTICE

Strengthening Scientific Inquiries

In 2013, NIJ continued to strengthen the scientific underpinnings of its research and development activities. Specifically, the Institute nearly doubled the number of active awards that use randomized controlled trials (RCTs) — from 17 in 2012 to 32 in 2013. RCTs are one of science’s most rigorous methods for determining a program’s effectiveness.

New RCTs awarded in 2013 included projects to:

- Help law enforcement agencies understand issues related to the effective use of video surveillance systems.
- Determine the impact of a training program designed to promote the use of procedural justice in Seattle.
- Examine the effectiveness of innovative, place-based, geospatial-focused policing efforts.
- Assess the effectiveness of telecommunication psychiatry as an alternative to face-to-face interactions between psychiatrists and patients.
- Evaluate re-entry programs and a variety of alternatives to traditional probation and parole supervision.

RCTs are examining issues associated with drug courts, batterer intervention programs and ways to reduce teen dating violence. A rigorous evaluation of Hawaii’s Opportunity for Probation with Enforcement (HOPE) program found that probationers assigned to HOPE committed fewer new crimes than probationers who followed the traditional probation path. One high-profile, ongoing RCT is determining whether the success of HOPE can be replicated on the mainland. NIJ-funded scientists are now conducting evaluations of HOPE Programs in four sites outside Hawaii to determine whether these sites can replicate Hawaii’s HOPE outcomes.

▶ [Learn more](#) on NIJ.gov, keyword “Hawaii HOPE.”

Strengthening Forensic Sciences

In 2013, NIJ made great strides toward improving the accuracy, reliability and validity of forensic evidence of all types and increasing the amount of information that can be extracted from forensic evidence.

NIJ accomplishes one of the major components of its forensics work by collaborating with NIJ's Department of Justice sister agencies, particularly the FBI and the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF); the National Institute of Standards and Technology (NIST) of the U.S. Department of Commerce; the National Science Foundation (NSF); and the White House Office of Science and Technology Policy. All activities focus on enhancing accuracy, reliability and measurement validity within the many forensic science disciplines.

In 2013, NIJ realized many noteworthy accomplishments, including the following:

- NIJ-funded researchers at GE Healthcare developed a platform that overcomes long-existing challenges to reliable, automated, front-end processing of biological reference samples. Instead of existing platforms, which require a laboratory technician to process one sample at a time, the new platform makes it possible for a robot to process multiple samples at a time, minimizing the need for human intervention. The NIJ-funded technology has since been incorporated into a commercially available robotic workstation that is operating in forensic laboratories today.
- NIJ-funded interlaboratory studies examined the discrimination power of elemental analysis for glass. The studies improved the scientific validity of the probative information resulting from this common trace evidence material. The tests that were part of the studies made it possible for ASTM International to issue a new standard for forensic glass analysis that enables crime laboratories to identify the types and manufacturers of glass left at crime scenes.
- NIJ and NSF continued to advance activities that were made possible by the signing of a memorandum of understanding (MOU) in September 2012. This MOU allows NIJ and NSF to leverage their resources for identifying and funding worthy research and evaluation projects.
- NIJ collaborated with its partners in producing several products, including *The Biological Evidence Preservation Handbook: Best Practices for Evidence Handlers* (with NIST); *Forensic Science Laboratories: Handbook for Facility Planning, Design, Construction, and Relocation* (with NIST); an update to *Crime Scene Investigation: A Guide for Law Enforcement*, originally published by NIJ in 2009 (with the Bureau of Justice Assistance and NIST); and a conference, "Measurement Science and Standards in Forensic Handwriting Analysis," that was webcast live and archived online (with NIST, the FBI and the American Academy of Forensic Sciences).

- NIJ has funded multiple projects addressing forensic ballistics and the validity and error rates in the examination and identification of firearm tool marks. In one NIJ-funded study published in 2013, researchers confirmed past findings showing that firearm tool mark examiners have a low error rate when they examine fired casings or bullets in consecutively manufactured slides. The study also found that examiners' years of experience do not affect the accuracy of their responses.
 - Another NIJ-funded study found that examiners had an error rate of less than 0.1 percent when they determined whether cartridge casings were fired from the same firearm or different firearms.
- ▶ **Learn more** about NIJ's forensics portfolio on NIJ.gov, keyword "forensic research and development."

Strengthening Research on Firearms

For more than 15 years, NIJ has contributed to building knowledge about ballistics and the effectiveness of gun-violence-reduction programs. In 2013, the tradition continued when President Barack Obama issued *Now Is the Time*, a plan that included 23 directives for reducing gun violence. NIJ began responding to directive 15, "to review existing and emerging gun safety technologies, and to issue a report on the availability and use of those technologies."

NIJ engineer Mark Greene, Ph.D., led NIJ's effort to respond to the directive. In June 2013, NIJ published *A Review of Gun Safety Technologies*, an assessment and market survey of existing and emerging gun-safety technologies.

- ▶ **Read the report** on NCJRS.gov, keyword: 242500.

The report noted that although personalized firearms — popularly referred to as "smart guns" — were not commercially available in the United States, several of these products had a maturity level that could at least be described as "commercializable" or "preproduction." Since June 2013, one domestically produced handgun model went on sale through the manufacturer's website. Another model, an import, was added to the Roster of Handguns Certified for Sale by the State of California Department of Justice in October 2013 and the Maryland Department of State Police Handgun Roster in November 2013.

In 2013, NIJ issued four new awards to study gun violence:

- A Tale of Four Cities: Improving Our Understanding of Gun Violence, Michigan State University, \$249,957.
- Disrupting Illegal Gun Transfers, RAND Corporation, \$399,370.
- Reducing Youth Access to Firearms Through the Health Care Setting, University of Colorado, Denver, \$1,025,560.

- Epidemiology of Crime Guns: From Legal Sale to Use in Crime, International Association of Chiefs of Police, \$250,000.

► [Learn more](#) on [NIJ.gov](#), keyword “firearm violence.”

Expanding Law Enforcement Access to Radio-Frequency Spectrum

In 2013, NIJ and NSF continued to join forces to increase the reach and impact of science. One of their 2013 collaborative projects has the potential to give law enforcement responders assured access to the radio-frequency spectrum at any time and in any place in which they need it. In early fiscal year 2013, NSF awarded a \$150,000 small-business start-up grant to Dynamic Spectrum, LLC, a new company that is commercializing cognitive radio technology from Stevens Institute of Technology. This technology arose out of an applied research and development project funded by NIJ that built on prior basic research funded by NSF. The technology allows seamless access to underused parts of the radio spectrum and has the potential to transform the global telecommunication market, leading to more efficient cellular networks, interoperable wireless public-safety communications, low-cost rural broadband connectivity, and infrastructure for robust mobile video applications. Dynamic Spectrum, LLC, is now selling the DSM 1000 Multi-Radio Dynamic Spectrum Management Route.

Strengthening NIJ’s Infrastructure

In 2010, the National Research Council of the National Academy of Sciences (NAS) released the report *Strengthening the National Institute of Justice*. The report offered multiple recommendations for strengthening NIJ’s science mission, infrastructure, and scientific integrity and transparency. NIJ took these recommendations to heart, and, in 2013, continued to follow through on actions that address the NAS evaluation results:

- NIJ improved the peer review process for the second year in a row by using standing review panels (SRPs), which are larger than NIJ’s traditional peer review panels and thus bring greater quality and breadth to the review process. After assessing the use of SRPs in 2012, NIJ made several refinements to the process so that SRPs would continue to enhance consistency, fairness and transparency in the review process and thus help ensure that precious resources are invested in only the best research proposals.
- As mentioned earlier in this report (see “Strengthening Scientific Inquiries” on page 4), NIJ increased the number of research projects it supports that use RCTs, one of science’s most rigorous methods for determining a program’s effectiveness.
- NIJ.gov underwent a comprehensive upgrade and overhaul. The site was transitioned to a new software platform that allows for increased internal and external collaboration and makes it easier for visitors to find information about awards and final reports.

- NIJ increased its outreach to bring more attention to its visiting scholars and practitioners programs. Every year, NIJ releases solicitations for fellowships and graduate and postdoctoral research assistants. One of its most prominent fellowships is the W.E.B. Du Bois Fellowship for Research in Race, Gender, Culture and Crime, whose objective is to advance knowledge regarding the confluence of crime, justice and culture in various societal contexts. In 2013, NIJ received more Du Bois Fellowship applications than ever before and, as a result, was able to make three awards, which brought the total number of Du Bois fellows to 21.

CHAPTER 2:

TRANSLATING KNOWLEDGE TO PRACTICE

NIJ Strengthens CrimeSolutions.gov

NIJ's CrimeSolutions.gov uses proven research to determine what works in criminal justice, juvenile justice and crime victim services. CrimeSolutions.gov allows users to conduct research on topics and programs related to criminal justice and obtain ratings of the evidence on these topics. The ease of searching the database is one of the most attractive features of CrimeSolutions.gov.

In September 2013, more than a dozen “practice meta-analyses,” based on the scientific method of meta-analysis, were added to CrimeSolutions.gov. This new module combines multiple evaluations of similar programs to render powerful findings on what kinds of programs and practices are effective.

- ▶ **See proven research results** that can be used to determine the best practices in criminal justice at CrimeSolutions.gov.

Research on Teen Dating Violence

Building on NIJ's robust research portfolio on violence against women, researchers are increasingly turning their attention to teen dating violence. Some of the findings reported in 2013 highlight the need to continue funding research on this topic. For example, an NIJ-funded study in 10 schools in three states found that:

- About 25 percent of youth said they experienced some form of cyber dating abuse victimization, with girls reporting more victimization (particularly sexual cyber dating abuse) than boys.
- One of 10 youths said that they had perpetrated cyber dating abuse, with girls reporting greater levels of nonsexual cyber dating abuse than boys and boys reporting more sexual cyber dating abuse.
- Victims of sexual cyber dating abuse were seven times more likely than nonvictims to have also experienced sexual coercion.
- Perpetrators of sexual cyber dating abuse were 17 times more likely than nonperpetrators to have also perpetrated sexual coercion.

Another NIJ-funded study focused on the use of orders of protection (OPs) by teenage victims of dating violence in New York City, which recently expanded its OP laws to include people younger than 18. Based on their findings, the researchers considered the use of OPs as a remedy for dating violence to be a “work in progress.” Although they found that OPs have the potential to protect teens, most teens were unfamiliar with the law that expanded OP use. The researchers noted that the promise of OPs was limited without an accompanying network of supportive adults, including parents and teachers.

In 2013, NIJ funded additional studies related to teen dating violence, including several RCTs.

► [Learn more](#) on NIJ.gov, keyword “teen dating violence.”

Elder Mistreatment Research

In 2010, 13 percent of the U.S. population was 65 or older, and this percentage is expected to grow to 19 percent by 2030. Congress addressed the growing concern about abuse and neglect of elders, including financial exploitation, in the Elder Justice Act. This act is part of the Patient Protection and Affordable Care Act and resulted in the formation of the Elder Justice Coordinating Council of the Administration on Aging.

Elder abuse has only been considered to be a criminal issue fairly recently, and most of the NIJ-supported research in this area in the last decade has focused on victims. The motivations of abusers and the relationships between abusers and victims have received little attention. As more studies contribute to the understanding of the complex, multidimensional aspects of elder abuse, researchers will begin to develop and evaluate theory-based explanations that can lead to improved detection and response approaches.

Recent research has begun to shed light on characteristics shared by different types of elder abuse. One recent NIJ-funded study, whose results were published in *The Gerontologist*, used one-to-one propensity score matching to compare the handling of financial exploitation by traditional means versus by an elder abuse forensic center. Researchers compared 237 cases of financial abuse handled by the Los Angeles County Elder Abuse Forensic Center to matched cases handled in traditional ways by the city’s Adult Protective Services. The results showed that cases that went to the Elder Abuse Forensic Center had a 10 times greater likelihood of being submitted to the district attorney for review than cases undergoing usual services. This study broke new ground by showing that an elder abuse multidisciplinary team increases rates of prosecution for financial exploitation.

► [Learn more](#) about elder abuse at NIJ.gov, keyword “elder abuse.”

Postconviction DNA Program

The strength of the U.S. criminal justice system depends on its accuracy, specifically its ability to convict the guilty and clear the innocent. Identifying and understanding the causes of wrongful convictions is critical to maintaining the integrity of the national justice system.

With the advent of DNA testing over the last two decades, biological evidence retained in cases from the “pre-DNA” era can now be tested. Furthermore, advances in DNA technology have made it possible to test for DNA that is aged, degraded, limited or otherwise compromised. Samples that previously generated inconclusive results might now be amenable to reanalysis with newer methods. Postconviction testing of DNA has made a major contribution to the increased discovery of wrongful convictions, and NIJ is playing a role in righting these wrongs.

The Justice for All Act of 2004 authorized the establishment of the Postconviction DNA Testing Assistance Program, which NIJ administers. Through this program, states can apply for funds to review cases and locate and analyze biological evidence from these cases. More than 43,000 cases have now been reviewed under this program, resulting in 20 exonerations.

► [Learn more](#) on NIJ.gov, keyword “postconviction DNA testing.”

The Sentinel Events Initiative

In 2013, NIJ continued to build the Sentinel Events Initiative, which could improve justice outcomes in this country through the use of a “learning from error” approach that aviation, medicine and other high-risk fields have used to make significant reforms. This initiative uses nonblaming, all-stakeholders, forward-looking reviews at the local jurisdiction level of negative criminal justice events (such as wrongful convictions and erroneous releases from prison).

NIJ’s ongoing sentinel events research is based on the organizational accident model, which is grounded in the view that an error generally signals an underlying weakness in the system or process and that accidents are likely to be the results of compound errors. The organizational accident model further holds that if errors are properly analyzed and addressed, they may provide important keys to strengthening the system and preventing future adverse events or outcomes.

In May 2013, NIJ convened a roundtable of some of the most forward-thinking law enforcement, judicial, prosecutor, defense, forensic, victims-rights and research thinkers to discuss the potential for using a sentinel-events approach in the criminal justice system. NIJ also partnered with the Office of Justice Programs Diagnostic Center to build a “beta site” pilot project in which several jurisdictions will test the sentinel events review process. All activities were designed to lay the groundwork for the release in fiscal year 2014 of a formal solicitation for proposals for in-depth research on the challenges and potential

efficacy of using a sentinel events review process to strengthen the criminal justice system and prevent future criminal justice errors.

► [Learn more](#) on [NIJ.gov](#), keyword “sentinel events.”

Improving the National Integrated Ballistic Information Network

In 2013, NIJ released the results of an evaluation by a team of researchers from four universities that is expected to lead to improvements in the use of the National Integrated Ballistic Information Network (NIBIN). NIBIN is the system through which firearms examiners at state and local crime laboratories compare tool marks on fired bullets or cartridges found at crime scenes to digitized images of ballistic evidence in a nationwide database.

The researchers found that implementation of NIBIN, which ATF operates, varied greatly across sites with respect to staffing, data input, and timeliness of processing evidence and identifying hits (i.e., matching forensic evidence to data in NIBIN). For example, some NIBIN sites identified hits within a few days of a crime, whereas others produced hit reports so slowly that these reports had no investigative value. The researchers’ extensive recommendations to fully realize the tactical and strategic value of NIBIN included:

- Adding “force multipliers,” such as geocodes and criminal records data, to hit reports.
- Creating standardized measures (beyond the numbers of inputs and hits) for evaluating the performance of local NIBIN sites.
- Establishing an ATF research and development program to identify innovative practices at NIBIN sites, particularly those that remove impediments to the timely identification of hits.

Each project is using rigorous methods to assess the impact of programs and compare the costs of developing and implementing Second Chance Act re-entry services to traditional programming. Results of the evaluations will be available in several years.

► [Learn more](#) about the NIBIN program on [NIJ.gov](#), keyword “NIBIN.”

CHAPTER 3:

ADVANCING TECHNOLOGY

Enhancing Latent Fingerprint Technology

In 2013, NIJ continued to invest in research on latent fingerprints and fingerprint technology. One of the highlights of the year involved a project to better understand the interoperability of automated fingerprint identification systems (AFISs) that state and local law enforcement agencies use. NIJ fielded the Latent Fingerprint Interoperability Survey (LFIOS) in January 2013 after receiving clearance from the White House's Office of Management and Budget. The survey is the only known comprehensive effort to establish the level of interoperability of AFISs maintained by state and local law enforcement agencies regarding the electronic exchange of latent fingerprint data to support criminal investigations.

Information collected in the survey will provide critical data on several aspects of AFIS interoperability:

- The types and functionalities of fielded AFISs in state and local agencies
- The current policy agreements among jurisdictions to permit the electronic sharing, exchange and searching of latent fingerprints
- Technological and regulatory factors that impact electronic sharing, exchange and searching of latent fingerprints across various jurisdictions at the national, state and local levels

The survey asks respondents in 44 state agencies and 74 local agencies to identify the vendor that manufactures their AFIS, their AFIS usage patterns and the jurisdictions that they share information with. The high response rate to date signals an interest by law enforcement practitioners to better understand issues related to the critical technology that they use every day. NIJ expects the survey data analysis results to improve the ability to quantify and understand interoperability at different levels of geographic or jurisdictional granularity as well as vertical and horizontal search patterns. The study results will enable law enforcement agencies at all levels, government administrators, legislators and researchers to understand the technological and regulatory barriers affecting automated, cross-jurisdictional AFIS interoperability.

- ▶ **Learn more** about LFIOS on NIJ.gov, keyword "latent fingerprint interoperability survey."

Testing Body Armor

NIJ's Body Armor Compliance Testing Program is designed to ensure that the body armor sold to law enforcement and corrections agencies in the United States is safe and effective. The program accomplishes its goal by comparing body armor performance to the NIJ Ballistic Resistance of Body Armor Performance-Testing Standard (NIJ Standard-0101.06) and maintaining a compliant products list (CPL), which currently comprises 814 models of body armor. Of those models, 193 are designed for female officers. In 2013, 117 models were submitted to the program. Of these models, 47 were found to be compliant, 29 were not and the results for five models were inconclusive. The remaining models are still undergoing evaluation.

In addition to agreeing to have their body armor models tested for compliance with NIJ Standard-0101.06 by independent laboratories, Body Armor Compliance Testing Program applicants agree to periodic follow-up inspection and testing (FIT) of their models in the CPL. FIT is conducted at manufacturing locations in the United States and eight other countries. In 2013, inspectors conducted FIT inspections in 38 manufacturing locations where 51 models were tested.

In recognition of the value of testing and evaluation, both the Bullet Proof Vest Partnership and Justice Assistance Grant programs require agencies that purchase vests with federal funds to purchase only items that are listed in the NIJ CPL.

► **Learn more** about body armor testing on NIJ.gov, keyword "body armor compliance testing."

Creating a Body Armor Measurement Standard

One of the reasons that officers most often cite for not wearing body armor is that the body armor is not comfortable. Ensuring that body armor fits well and is comfortable begins with appropriate and accurate measurements. In 2013, at the request of and with the support of NIJ, ASTM International published ASTM E2902-12, *Standard Practice for Measurement of Body Armor Wearers*. This was the first time that NIJ had worked with a private-sector standards-development organization to arrange for the publication of a standard to meet criminal justice agencies' equipment performance-testing needs. The collaboration with ASTM International is part of a larger NIJ effort to reduce the cost of meeting the equipment performance-testing needs of criminal justice agencies through strategic partnerships with the private sector. As a result of the work by NIJ and ASTM, ASTM International is developing three more standards of interest to criminal justice agencies:

- New Practice for Determining Body Armor Coverage
- New Terminology for Body Armor
- New Specification for Clay Backing Material Used in Ballistic-Resistance Testing

- ▶ **Learn more** about body armor standards on NIJ.gov, keyword “body armor performance standards.”

Reducing the DNA Backlog

When NIJ published the first edition of *Making Sense of DNA Backlogs, 2010 — Myths vs. Reality*, the backlog of untested DNA samples in the nation’s crime laboratories was making headlines in the national media. Today, as a result of grants from NIJ through the DNA Initiative, crime laboratories are processing more cases than ever before and reporting large increases in their capacity. Despite the expanded capacity, however, laboratories are struggling to keep up with the growing demand for their services because law enforcement agencies are collecting more evidence than ever before, so the amount of evidence submitted to laboratories is growing exponentially.

Grants from NIJ are not only helping laboratories build capacity in the short term, but they are also providing longer-term support by funding research on and development of innovative technologies and tools that can transform how laboratories do their work. Robotics, for example, is already helping laboratories process increasing numbers of samples. See the discussion in “Strengthening Forensic Sciences” on page 5.

- ▶ **Learn more** on NIJ.gov, keyword “DNA backlog.”

CHAPTER 4:

WORKING ACROSS DISCIPLINES

Broadening NIJ's Reach via Challenge.gov

To collect the best and brightest ideas from a broad range of disciplines, NIJ issued the first Challenge.gov competition of the U.S. Department of Justice. Challenge.gov uses a Web-based platform supported by the White House Office of Science and Technology. In the Challenge, NIJ asked for innovative, nondestructive approaches to determining whether in-use body armor retains its ballistic performance over time. The prize was awarded to a team from Purdue University's School of Aeronautics and Astronautics Engineering. The team received a prize of \$25,000 for proposing a concept for testing the viability of in-service body armor called the Vibration Energy Signature Test (VEST). Although very promising, this methodology will require further development to determine its ultimate viability. In addition to the winner, honorable mentions include teams from the Department of Apparel, Events and Hospitality Management at Iowa State University; Southeast Efficiency Improvement Associates in South Carolina; and the Center for Integrated Nanotechnologies and the Earth and Environmental Sciences Division at Los Alamos National Laboratory in New Mexico. This first Challenge demonstrated that the Challenge.gov approach can bring in fresh ideas from disciplines outside the traditional criminal justice research community.

NIJ subsequently issued several other Challenges in 2013 to:

- Determine the costs and benefits of sex offender notification.
- Increase access to mobile broadband services for law enforcement agencies.
- Develop ultra-high-speed applications that improve criminal justice and public safety services and operations.

▶ **Learn more** about NIJ's funding opportunities, including Challenges, on NIJ.gov/funding.

Using Social Science to Understand Wrongful Convictions

In 2013, NIJ released results from the first large-scale empirical study of wrongful convictions. This study identified 10 factors that distinguish wrongful convictions from "near misses" (cases in which an innocent defendant was acquitted or had charges dismissed before his or her trial). The factors that led to a wrongful conviction of an innocent defendant instead of a dismissal or acquittal were:

- A younger defendant
- A defendant's criminal history
- A weak prosecution case
- Evidence withheld by the prosecution
- Lying by someone other than an eyewitness
- Unintentional witness misidentification
- Misinterpretation of forensic evidence at the trial
- A weak defense
- A family witness offered by the defendant
- A "punitive" state culture

In addition to a quantitative analysis, the researchers conducted a qualitative analysis of the data. A panel of criminal justice experts analyzed 39 cases to determine how the 10 factors were connected to each other and whether "tunnel vision" played a role. Tunnel vision can occur when criminal justice professionals focus too much on building a case against a suspect while ignoring evidence pointing in a different direction.

► [Learn more](#) on NIJ.gov, keyword "wrongful convictions."

Improving Sexual Assault Kit Testing

Over the past decade, police departments have discovered thousands of sexual assault kits (SAKs) that have never been sent to a crime laboratory for testing. No one knows how many kits are in storage in police departments or how old the kits are, and little is known about why these kits were not sent for testing. In 2013, NIJ and the Bureau of Justice Statistics began exploring various scientific methods to obtain an estimate, and NIJ has been analyzing findings from several ongoing studies to understand the nature and extent of the problems.

Studies in four cities are shedding light on the problem. Here is what is known to date:

- **Los Angeles:** Nearly 11,000 SAKs from police property rooms were tested in Los Angeles. NIJ-funded researchers followed a small sample of 371 kits to find out what happened to them after they were sent to the crime laboratory for testing. The researchers found that after 18 months, police had made no new arrests based on the SAK results, had filed new charges in one case, and had obtained two convictions but these were probably not related to the testing. Why, with more than 10,000 SAKs now being tested, were there so few new judicial outcomes? One theory is that detectives and prosecutors had, at the time of these cases, already determined that DNA testing would not increase the likelihood of a successful prosecution.
- **New Orleans:** This project tested 1,008 SAKs. Of these, 256 (25 percent) produced male DNA profiles that were entered into the national DNA database; 139 (54 percent) produced matches ("hits") to a profile already in the database.

Overall, testing the backlog of kits in New Orleans helped police investigations in 13 percent of the sexual assault cases.

- **Detroit:** Of the 11,300 SAKs found in police property rooms, approximately 8,500 had never been tested. NIJ-funded researchers are examining a sample of 1,600 kits in depth. Preliminary results show that tests of kits involving a suspect who was previously unknown to police resulted in 64 matches in the national DNA database. Testing kits in which the suspect was already identified by police resulted in 57 hits. Final results from this study are expected in 2014. In addition to the analysis of outcomes from DNA testing, the Detroit project is identifying the best ways to investigate and follow up on database hits.
- **Houston:** An audit of the more than 17,000 kits in police evidence storage facilities determined that more than half had previously been tested. NIJ-funded scientists are examining 4,000 of these kits with a focus on 500 to learn how to improve the investigation and prosecution of cases. Among a number of related efforts, Houston is creating a justice advocate in the police department to increase victim engagement in the criminal justice process. Results are expected in 2014.

▶ **Learn more** on NIJ.gov, keyword “untested sexual assault.”

Collaborating With the Federal Aviation Administration to Keep Law Enforcement Agencies on the Cutting Edge

In 2013, a partnership of public-sector organizations and federal agencies, including NIJ, hosted a series of presentations focused on the Federal Aviation Administration’s (FAA’s) requirements for the use of unmanned aircraft systems (UASs) by public safety agencies. Since 2008, NIJ has worked with the FAA and law enforcement partners to identify needs and requirements regarding UAS use. The partnership with the FAA was an outgrowth of a project that NIJ initiated in 2005 to identify lower-cost alternatives to the conventional aircraft traditionally used by law enforcement aviation units. One of the conclusions from the collaboration was the need to revise the process that public safety agencies use when they ask the FAA for certification to operate a UAS. The partnering organizations executed a memorandum of understanding with each other and the FAA that allowed them to establish a public training program on the FAA’s certification process.

Sponsoring public workshops and collaborating with the FAA is an example of how NIJ accomplishes its mission to address the technology needs of law enforcement agencies, particularly at the state and local levels.

▶ **Learn more** about NIJ’s aviation portfolio on NIJ.gov, keyword “aviation.”

CHAPTER 5:

ADOPTING A GLOBAL PERSPECTIVE

Human Trafficking Research

For more than a decade, NIJ has been building a significant body of knowledge about human trafficking. Although human trafficking is a global crime with international ramifications, it remains largely a hidden problem with unknown numbers of cases and unsubstantiated estimates of these numbers. Recent NIJ advances are starting to shine a light on the shadows within which human trafficking operates.

In 2013, NIJ-funded research produced major findings about labor trafficking among North Carolina migrant farmworkers. The research had two goals: (1) document the characteristics and indicators of labor trafficking, including component crimes, collateral crimes and other community effects; and (2) provide law enforcement agencies with actionable knowledge to help identify labor trafficking. Major findings include:

- About one-quarter of farmworkers in the study said they had experienced a variety of situations that researchers would characterize as trafficking; 39 percent of the farmworkers reported other kinds of abuse.
- The most common type of exploitation that farmworkers reported was abusive labor practices (34 percent), followed by deception and lies (21 percent), restriction and deprivation (15 percent), and threats to physical integrity (12 percent).
- Workers with greater English proficiency were more likely to experience any violation and trafficking, but English proficiency was not associated with nontrafficking abuse.
- A worker's lack of legal status was the strongest and most consistent predictor of experiencing trafficking and other violations.

► **Learn more** about human trafficking research on NIJ.gov, keyword “human trafficking.”

Transnational Organized Crime Research

Transnational organized crime (TOC) is an international challenge that impacts all levels of law enforcement throughout the United States. Yet, aside from a handful of high-profile crimes (e.g., drug trafficking and trafficking in persons), there is a limited understanding of how TOC is impacting state and local jurisdictions and of how state and local law enforcement agencies are responding to TOC. The responsibility for investigating TOC

does not belong solely to the federal law enforcement community, and state and local law enforcement agencies are key players in this activity.

To better understand TOC's impact and the state and local response to TOC — with the goals of promoting federal coordination with state and local law enforcement and informing future research efforts — NIJ made two awards to obtain a better picture of how TOC impacts communities. The first award was for a study of the transnational criminal activities of MS-13, a gang that the U.S. Treasury Department recently designated as an international criminal organization. The study will provide much-needed information on how MS-13 operates across borders and the scope of its participation in TOC. The second award was for a study of convicted felons suspected of facilitating transnational criminal organizations. The study will provide detailed information on the criminal services, such as money laundering and document fraud, that allow TOC to operate smoothly.

► **Learn more** about TOC on NIJ.gov, keyword “transnational organized crime.”

Domestic Radicalization Research

In 2013, NIJ continued building its research portfolio on domestic radicalization to violent extremism by funding research to improve the understanding of radicalization to violent extremism in the United States and, in turn, bolster efforts to prevent or counter violent extremism. Violent extremists are individuals who support or commit ideologically motivated violence to further political, social or religious goals.

In 2013, NIJ made several awards to study radicalization to violent extremism. Examples of this research include:

- A project focused on the Somali-American diaspora and its involvement in two types of transnational crime (radicalization to violent extremism and trafficking in persons) that aims to build scientific knowledge of these crimes with an emphasis on transnational issues and convergence in contexts of profound community vulnerability and active criminal networks.
- A study that compares the behavioral underpinnings of three types of U.S.-based offenders since 1990 — solo terrorists, lone-actor terrorists and individuals who engage in mass-casualty violence but lack an ideological motivation — to understand whether similarities and differences are observable among these types of offender and the relevant implications for law enforcement agencies.
- A study that will collect life histories from approximately 40 “homegrown” terrorist offenders inspired by Al Qaeda and ascertain the importance of the Internet and online networking in shaping the early stages of radicalization trajectories.

► **Learn more** about radicalization to violent extremism research on NIJ.gov, keyword “terrorism.”

American Indian and Alaska Native Research

For many years, NIJ has supported a comprehensive American Indian (AI) and Alaska Native (AN) research program with multiple projects. The purpose of these projects is to examine violence against AI and AN women and identify factors that place these women at risk for victimization; evaluate the effectiveness of federal, state, tribal and local responses to violence against AI and AN women; and develop recommendations to improve the effectiveness of these responses. In 2013, NIJ collaborated with multiple federal agencies to further strengthen its already robust AI and AN research portfolio. Examples of these collaborations include:

- To complement NIJ's Violence Against Indian Women program of research, NIJ partnered with the Centers for Disease Control and Prevention (CDC) to conduct a study of self-identified AI and AN people using CDC's National Intimate Partner and Sexual Violence Survey. When completed, the study will provide the first set of estimates from a national, large-scale survey of victimization among AI and AN men and women about psychological aggression, coercive control and entrapment, physical violence, stalking, and sexual violence using detailed, behaviorally specific questions.
 - In 2008, the Attorney General launched the Federal Advisory Task Force on Violence Against Indian Women, which is composed of national tribal domestic-violence and sexual-assault nonprofit organizations, tribal governments and the national tribal organizations. The task force was created to (1) provide an accurate report on violence against AI and AN women in tribal communities, (2) provide reliable and valid estimates of the scope of the problem, and (3) identify barriers to and possible solutions for addressing these significant public safety issues. The task force met most recently in March 2013 to gather input on ways to strengthen the program and place new applications into the field.
- ▶ **Learn more** about NIJ's Violence Against American Indian and Alaska Native Women program of research on NIJ.gov, keyword "violence against American Indian and Alaska Native women."

Chapter 6:

HIGHLIGHTS OF DISSEMINATION

Research for the Real World Seminars

NIJ's in-person seminar series takes place periodically in Washington, D.C., and features research that is changing the thinking about policies and practices. The seminars are recorded before a live audience and posted on NIJ.gov. In 2013, NIJ held two Research for the Real World Seminars:

- "Wrongful Convictions: The Latest Scientific Research and Implications for Law Enforcement," Jon Gould, J.D., Ph.D., Professor of Law, Justice, and Society and Director, Washington Institute for Public and International Affairs Research, American University, and John R. Firman, Director, Research Division, International Association of Chiefs of Police.
- "Why Is the United States the Most Homicidal Nation in the Affluent World?" Randolph Roth, Ph.D., Professor of History and Sociology, The Ohio State University.

► [Learn more](#) on NIJ.gov, keyword "Research for the Real World."

Social Media

NIJ celebrated its first anniversary on Twitter and Facebook in November 2013. In that time, NIJ's Facebook "likes" more than doubled (from 700 to nearly 1,500) and NIJ ended the year with more than 1,000 Twitter followers. Some of the most popular posts featured information on LGBT teens and dating violence, on how NIJ funding is helping forensic archaeological fieldwork to identify unmarked graves and bodies buried on the grounds of the Dozier School for Boys in Marianna, Fla., and on state laws for collecting DNA from arrestees.



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The NIJ Journal

The *NIJ Journal*, published twice a year, features articles to keep criminal justice policymakers and practitioners informed about new developments. The *NIJ Journal* presents research-based information that can help inform policy decisions and improve understanding of the criminal justice system.

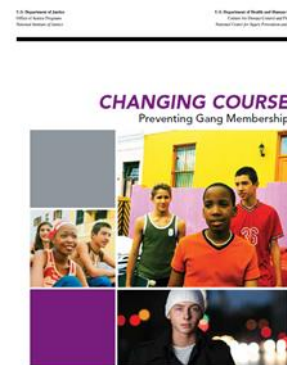
- ▶ **Read** the *NIJ Journal* on NIJ.gov, keyword “NIJ Journal.”



Changing Course

In 2013, NIJ and CDC formed a partnership to publish a book, *Changing Course: Preventing Gang Membership*. Written by some of the nation’s top criminal justice and public health researchers, this book offers evidence-based principles that can halt the cascading impact of gangs on youth, families, neighborhoods and society at large. The goal of the book (and a separate executive summary publication) is to help policymakers who make decisions about the best use of taxpayer dollars — and practitioners who work in the trenches, such as law enforcement officers, teachers and community services providers — understand what research says about keeping youth out of gangs.

- ▶ **Read** *Changing Course: Preventing Gang Membership* on NCJRS.gov, keyword: 239234.



Five Things Law Enforcement Executives Can Do to Make a Difference

NIJ created its “Five Things” products — a postcard, flyer, Web page, poster and social media campaign — to encourage law enforcement leaders to think about the benefits research brings to them. They deliver the most important, useful findings from years of NIJ research on policing to law enforcement executives in a way that made it obvious how research applies to their work and how they can use it in their everyday operations to improve public safety.

- ▶ **Learn more** on NIJ.gov/five-things.



Professional Association Publications

NIJ shares research findings in a variety of professional association publications. In 2013, NIJ staffers contributed to multiple publications, including the American Correctional Association's *Corrections Today*, the International Association of Chiefs of Police's *Police Chief Magazine*, the Civic Research Institute's *Sexual Assault Report*, the American Society of Criminology's *The Criminologist*, and the American Criminal Justice Association's *ACJA Today*. In addition, a number of professional publications reprinted articles from the *NIJ Journal* and other NIJ products.

Appendix:

FINANCIAL DATA

Exhibit 1: Funds Made Available Pursuant to P.L. 112-55, FY 2013

Type of Funds	Amount in Millions
1. Research, Evaluation and Development	
a. NIJ Base Appropriation*	\$40.0
b. Evaluation Clearinghouse/What Works Repository (CrimeSolutions.com)	\$1.0
2. State and Local Law Enforcement Assistance	
a. DNA-Related and Other Forensic Programs and Activities	
• DNA Analysis and Capacity Enhancement Program and for Other Local, State and Federal Forensic Activities	\$117.0
• Postconviction DNA Testing	\$4.0
• Sexual Assault Forensic Examination Program Grants	\$4.0
b. Paul Coverdell Forensic Science Improvement Grants	\$12.0
c. Domestic Radicalization Research	\$4.0
3. Violence Against Women Prevention and Prosecution Programs	
a. Analysis and Research on Violence Against Indian Women	\$1.0
b. Research and Evaluation of Violence Against Women and Related Issues	\$3.5
4. Reimbursements and Transfers from Other Federal Entities (including OJP Components)	\$6.6
5. Section 215 Set-Aside for Research and Statistics	\$12.9
6. Carryover From Prior Fiscal Years	\$4.9
TOTAL FUNDS	\$210.9

* P.L. 112-55 directed NIJ to transfer \$5 million to the National Institute of Standards and Technology.

Exhibit 2: Allocation of Funds, FY 2013

Type of activity	Subcategory	Percentage
Social Science	Evaluation	3.8%
	Research	13.7%
Science and Technology	Research and Development	3.6%
	Standards Development	0.5%
	Technology Assistance/Test and Evaluation	4.6%
Investigative and Forensic Science	Analysis and Capacity Enhancement*	42.8%
	Research and Development	8.5%
	Training and Technical Assistance	3.9%
	National Missing and Unidentified Persons System (NamUs)	1.1%
Dissemination/Outreach/Program Support		4.3%
Carve-Out for Section 215 Set-Aside for Research and Statistics		1.3%
OJP Management and Administration (M&A)		7.2%
Direct Transfer to the National Institute of Standards and Technology (NIST) Pursuant to P.L. 112-55		2.4%
Carryover**		2.4%
TOTAL		100.0%

* Grants to states and units of local government to improve and enhance crime laboratories (including funds for analyses/backlog reduction).

** NIJ received "no-year" funding for these programs in FY 2013 (funds that did not expire at the end of the fiscal year). "Carryover" funds are those that remained unobligated as of the end of the fiscal year. Depending on the provisions of future appropriations legislation, these funds may be subject to statutory rescission.

Exhibit 3: Allocation of Funds for DNA-Related and Other Forensics Programs and Activities, FY 2013

The National Institute of Justice received \$117 million in fiscal year 2013 appropriations for DNA-related and other forensic programs and activities, which were used as follows:

DNA Analysis, Capacity Enhancement, and Other Forensic Activities	FY 2013 Funds in Millions
Awards that Directly Benefit State and Local Government Efforts to Build Capacity and Reduce Backlogs:	
Forensic DNA Backlog Reduction Program*	\$74.5
DNA Technology to Identify the Missing	\$1.8
Research and Development:	
Research, Development and Evaluation (Applied and Basic)	\$12.3
Training and Technical Assistance:	
Training and Technical Assistance, Including \$2.25 Million for the National Missing and Unidentified Persons System (NamUs)	\$3.25
NIJ-FBI Sexual Assault Kit Project	\$4.25
Other:	
Statutory Recissions (1.877% and 0.2%)	\$2.5
Sequestration	\$5.9
Carve-out for Section 215 NIJ/BJIS Set-Aside for Research, Evaluation and Statistics	\$2.2
Office of Justice Programs Assessment for Management and Administration (M&A)	\$8.8
Dissemination/Outreach/Program Support	\$0.6
Peer Review of DNA Analysis, Capacity Enhancement and Other Forensic Activities	\$0.9
SUBTOTAL	\$117.0

Postconviction DNA Testing Program	FY 2013 Funds in Millions
Postconviction DNA Testing Assistance Program Grants	\$3.3
Statutory Recissions (1.877% and 0.2%)	\$0.1
Sequestration	\$0.2
Office of Justice Programs Assessment for Management and Administration (M&A)	\$0.3
Peer Review of Postconviction Applications	\$0.1
SUBTOTAL	\$4.0

Sexual Assault Forensic Exam Program	FY 2013 Funds in Millions
Sexual Assault Forensic Examination Program Grants	\$3.2
NIJ-FBI Sexual Assault Kit Project	\$0.1
Statutory Recissions (1.877% and 0.2%)	\$0.1
Sequestration	\$0.2
Office of Justice Programs Assessment for Management and Administration (M&A)	\$0.3
Peer Review of Sexual Assault Forensic Exam Program Applications	\$0.1
SUBTOTAL	\$4.0
TOTAL	\$125.0

* NIJ elects to administer the DNA Backlog Reduction Program through an NIJ-established formula that is detailed annually in the solicitation document. The funds are discretionary in nature (i.e., there is no statutory requirement to administer them as a formula program).

Exhibit 4: Solicitations by Title, Number of Applications and Awards, and Value, FY 2013

Solicitation Title	Applications Received	Awards Made	Value of Awards
1. Applied Research and Development in Forensic Science for Criminal Justice Purposes	135	30	\$10,018,073
2. Applied Technology Research and Development for Criminal Justice Purposes	38	6	\$2,211,691
3. Applied Technology Research and Development to Optimize Criminal Justice Use of Social Media in the "Web 3.0" Environment	15	1	\$593,715
4. Basic Scientific Research to Assess Youth With Sexual Offending Behavior	3	1	\$999,984
5. Basic Scientific Research to Support Forensic Science for Criminal Justice Purposes	77	10	\$4,569,917
6. Building and Enhancing Criminal Justice Researcher-Practitioner Partnerships	46	4	\$1,738,677
7. Data Resources Program 2013: Funding for Analysis of Existing Data	35	9	\$352,952
8. Desistance From Crime Over the Life Course	21	0	\$0
9. Establishing a National Criminal Justice Technology Research, Test, and Evaluation Center	8	1	\$2,400,000
10. Evaluating the Effectiveness of State, Local and Tribal Responses to Violence Committed Against Indian Women Living in Tribal Communities	7	1	\$294,317
11. Evaluating the Efficacy of Lighting, Markings, and Paint Schemes in Reducing the Incidence of Law Enforcement Vehicle Crashes	3	1	\$806,199
12. Evaluation Research on Police and Technology in Schools	11	0	\$0
13. Evaluation of the Office on Violence Against Women's Domestic Violence Prevention Demonstration Initiative	7	1	\$1,899,856
14. Exploratory Research on the Impact of the Growing Oil Industry in the Dakotas and Montana on Domestic Violence, Dating Violence, Sexual Assault, and Stalking	19	1	\$498,418
15. FY 2013 DNA Backlog Reduction Program	126	125	\$74,495,175
16. Hosting the National Law Enforcement and Corrections Technology Center (NLECTC) System's Small, Rural, Tribal and Border (SRTB) Regional Center	3	0	\$0
17. Identifying the Highest Priority Criminal Justice Technology Needs	6	1	\$1,699,224
18. NIJ Graduate Research Fellowship Program	73	13	\$345,562
19. Native American Crime, Victimization, and Justice Studies: Postdoctoral Fellowship	5	1	\$95,690
20. Paul Coverdell Forensic Science Improvement Grants Program	198	70	\$9,687,157
21. Postconviction DNA Testing Assistance Program	12	6	\$3,315,873
22. Research and Evaluation on Children Exposed to Violence	44	5	\$1,983,794
23. Research and Evaluation on Justice Systems: Investigator-Initiated	49	2	\$568,305

24. Research and Evaluation on Policing	36	5	\$2,756,980
25. Research and Evaluation on Radicalization to Extremism in the United States	22	5	\$1,921,135
26. Research and Evaluation on Transnational Issues: Trafficking in Persons, Organized Crime, and Violent Extremism	35	5	\$2,524,946
27. Research and Evaluation on Violence Against Women: Teen Dating Violence, Sexual Violence, and Intimate Partner Violence FY 2013	95	9	\$5,238,284
28. Research and Evaluation on White Collar Crime	18	2	\$959,940
29. Research and Evaluation on the Abuse, Neglect, and Exploitation of Elderly Individuals and Residents of Residential Care Facilities	26	5	\$1,737,411
30. Research and Evaluation on the Impact of Social Media on Policing	19	0	\$0
31. Research on Firearms and Violence	24	4	\$1,924,887
32. Research on Offender Decision-Making	30	4	\$2,103,111
33. Research on Teen Dating Violence in Understudied Populations: Postdoctoral Fellowship FY 2013	4	0	\$0
34. Research on Violent Victimization	19	1	\$161,551
35. Social Science Research on Forensic Science	23	7	\$2,521,254
36. Study of the Use of Residential Substance Abuse Treatment for State Prisoners Program Funds on Aftercare Services	2	1	\$399,836
37. Testing Geospatial Predictive Policing Strategies	9	2	\$883,012
38. The Impact of Probation/Parole Office Home Visits in Offender Outcomes	18	2	\$1,038,805
39. The Impact of Safety Equipment Modalities on Reducing Correctional Officer Injuries	3	1	\$307,774
40. Using DNA Technology to Identify the Missing	16	4	\$1,767,725
41. W.E.B. Du Bois Fellowship for Research on Race, Gender, Culture, and Crime FY 2013	16	3	\$297,635
Total	1,356	349	\$145,136,865

Continuations of Awards Made in Prior Years

Office	Awards Made	Value of Awards
Office of Investigative and Forensic Sciences Continuations	2	\$4,419,128
Office of Science and Technology Continuations	10	\$7,956,897
Office of Research and Evaluation Continuations	6	\$1,790,061
SUBTOTAL	18	\$14,166,086
GRAND TOTAL	367	\$159,302,951

Exhibit 5: Number of Awards, FY 2009-2013

