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810 Seventh St. N.W.  
Washington, DC 20531

**David B. Muhlhausen, Ph.D.**  
Director, National Institute of 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 2016, 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 that reads "David B. Muhlhausen". The signature is written in a cursive style and ends with a long horizontal flourish.

David B. Muhlhausen, Ph.D.  
Director, National Institute of Justice



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# Law Enforcement

## Developing the Next Generation of Law Enforcement Leadership

The National Institute of Justice (NIJ) and the International Association of Chiefs of Police (IACP) launched the Law Enforcement Advancing Data and Science (LEADS) program in 2014 to support the professional development of research-minded law enforcement officers. Under LEADS, NIJ awards merit-based scholarships to sworn, mid-rank officers who have either partnered on a research project or infused research into policy development within their agency.

Through LEADS, NIJ and IACP are helping to develop the next generation of law enforcement leaders. LEADS scholars attend the IACP Conference and Expo, where they network with law enforcement leaders, learn about the latest research, and see how other agencies and jurisdictions operate. They can then take the information they have gleaned from the conference back to their own agencies to strengthen policy and practice.

In 2016, NIJ created the LEADS Agencies program as a complement to the Scholars program. It is an opportunity for research-minded law enforcement officers — many of whom have obtained or are pursuing their doctorates — who are poised to contribute to research at the jurisdictional level and beyond. It will empower these policing practitioners to answer their agencies' basic research questions and generate solutions uniquely tailored to their own agencies' needs.

NIJ has traditionally advanced science-based criminal justice practice by supporting researchers who are responsive to the needs of the field. The LEADS Agencies program flips this model and seeks to develop practitioners who are capable of simultaneously advancing science and the police profession. The LEADS scholars will also help ensure that the Agencies program is practical, feasible, and responsive to the priority needs of law enforcement agencies across the country.

## Promoting Officer Safety and Wellness

Evidence shows that law enforcement officers fare worse than the general population on many health and wellness outcomes. Too often, however, relevant research on officer safety and wellness has been conducted without a theoretical model to interpret the range and overlap of risk factors needed to develop sound prevention policies and programs. Furthermore, policies and programs to address officer safety and wellness have been limited in their scope and reach, and are largely untested in effectiveness.

In 2016, NIJ supported the National Opinion Research Center's efforts to analyze the relationship between patterns of stressors and officer safety and wellness outcomes. The project seeks to provide the necessary data to help researchers, law enforcement

organizations, and policymakers adapt, design, and evaluate policies and programs to address the risk factors, stressors, and support mechanisms that influence officers' health outcomes. The analyses will produce critical information for law enforcement agencies to evaluate ongoing risks and will create a scientific foundation for the development of interventions and policies to improve outcomes.

Safety and wellness concerns also extend to correctional officers. In Massachusetts, the suicide rate among correctional officers is almost eight times higher than the overall suicide rate in the state. At Northeastern University, NIJ is supporting a study of correctional officer suicide to develop a nuanced and holistic understanding of the context within which correctional officer suicide occurs and to provide a comprehensive assessment of the effects of fatalities on the institutional environment and on the correctional staff working in these environments.

## **Assessing the Impact of DNA Testing**

With the goal of reducing sexual violence, Texas enacted legislation in 2011 mandating universal testing of sexual assault kits (SAKs). Analysis of these kits produces DNA evidence that is entered into the Combined DNA Index System (CODIS) for suspect identification. What remains to be seen is what effect this new DNA testing will have on criminal justice outcomes.

With continued funding from NIJ, the Police Foundation seeks to assess the longer term impact of the Texas SAK testing law, examining unfolding trends in criminal justice indicators as the DNA test results from backlogged SAKs are entered into CODIS for suspect identification. This project, the largest study to date of criminal justice outcomes stemming from CODIS hits, will contribute critical information on what percentage of DNA findings result in further law enforcement action, what kind of burden mandatory testing places on law enforcement, and what factors contribute to or hinder successful prosecution.

## **Applying New Technology to Crime Scene Investigation**

Gathering evidence at a crime scene is of the utmost importance in solving a crime, yet the process is often difficult and labor intensive. 3D capture technology has the potential to be a powerful tool for improving evidence-gathering practices in crime scene investigations. By combining 3D capture technology with computer reconstruction algorithms and virtual reality presentation mechanisms, law enforcement can improve the accuracy of evidence documentation, reduce time spent and costs incurred in evidence collection, reduce risks, and enable new means of investigation.

In 2016, NIJ funded the Living Environments Lab at the University of Wisconsin-Madison to test and compare different 3D capture methods for crime scenes. This project will utilize a forensic training location to create artificial crime scenes, which will be digitized with different 3D capturing methods. This controlled test environment enables a baseline comparison of different techniques. If successful, this project will not only enable crime scene investigators to analyze scenes in less time and with greater accuracy but will also pave the way for new types of computer-mediated investigations.

## Ensuring Procedural Justice

Most of the existing research on procedural justice and its implications for policing has focused on citizens' perceptions and subjective evaluations. This body of research has demonstrated the importance of procedural justice for enhancing police legitimacy and public opinions regarding police. However, additional research is needed to examine how officers perceive procedural justice and how they can be encouraged to incorporate procedural justice principles in their interactions with citizens.

In 2016, NIJ made an award to Old Dominion University to examine the impact of police training on procedurally fair behavior by the police during encounters with community residents. The university will work with the Norfolk Police Department to better understand officers' perceptions about procedural justice, officers' procedurally fair behavior during interactions, and citizens' behavioral responses and subjective evaluations of their encounters with police officers.

NIJ's support for procedural justice research also extends to evidence-based training programs for improving officer skills in social interaction and de-escalation tactics. In 2016, NIJ made an award to the University of South Carolina to improve the capacity of police officers to de-escalate situations, thereby reducing the need to use force. Participating officers will take trainings that emphasize face-to-face communication for minimizing conflict; reinforce actions that are conducive to preserving and protecting the life, safety, and overall well-being of all persons; and create and sustain features of procedural justice.

NIJ also made an award in 2016 to examine the causes of officer bias during traffic stops. Using officer-level data on vehicle stops and searches by 512 officers in Syracuse, New York, from 2006 to 2009, Syracuse University seeks to better understand the effects of officer experience and exposure to citizens of differing races on the potential for racial bias in traffic stops.

# Violence and Victimization

## Conducting Long-Term Research on Interpersonal Violence

NIJ has previously funded several studies on campus sexual assault. To date, there is limited information on interpersonal violence among college-age individuals and the consequences of such experiences. A recent report from the Bureau of Justice Statistics showed that the rates of reported rape and sexual assault were higher among young women ages 18-24 than for any other age group.

In 2016, NIJ funded the planning phase of a longitudinal study examining long-term trajectories of violence among college-age individuals. The study, conducted by Westat, will inform prevention and intervention strategies and policies targeted at the causal factors of interpersonal violence perpetration and victimization.

## Preventing Elder Abuse

NIJ seeks research to test the effectiveness of elder abuse preventive interventions. Over the past decade, NIJ has funded over 30 research projects related to the abuse, neglect, and financial exploitation of elderly individuals, but only two research projects involved intervention research. No rigorous research has been done to determine the effectiveness of a program designed to prevent elder abuse, either in the general population of elders or among particular at-risk populations of elders.

In 2016, NIJ made two initial awards for rigorous, multiyear demonstration projects to prevent abuse, neglect, and financial exploitation among community-residing elderly individuals identified to be at risk. The Urban Institute's project focuses on the Elder Mistreatment Prevention Education Program (EMPEP), a 90-day program that includes 12 weekly one-on-one, in-home visits with elders by a trained social worker or case manager. The University of Southern California is developing a novel elder mistreatment intervention called Strengths-based Training on Prevention of Elder Mistreatment (STOP EM). This program builds on lessons learned from preventing other forms of family violence, including child maltreatment and intimate partner violence. After completing their initial planning phases, both groups will propose pilot projects to begin testing the efficacy of these interventions.

## Advancing Understanding of Violence Against Women

Violence against women (VAW) research and evaluation is one of the major focuses of NIJ's Violence and Victimization Research Division. The VAW research and evaluation program seeks to improve knowledge and understanding of teen dating violence, intimate partner violence, stalking, and sexual assault issues through science.

In 2016, NIJ joined with Rutgers University to establish an interdisciplinary consortium supporting VAW research, evaluation, and programmatic activities. The consortium will extend the work of NIJ's scientific staff across critical areas in the VAW field.

The overall purpose of the consortium is to foster research and evaluation projects that fill the gaps in current knowledge on intimate partner violence, sexual violence, stalking, and teen dating violence. The consortium has the potential to significantly improve understanding of the major criminal justice problems of violence against women. Ultimately, the consortium will provide critical information on topics of violence against women to influence research, practice, and policy.

## Making Schools Safer

NIJ's Comprehensive School Safety Initiative (CSSI) is designed to produce practical knowledge based on rigorous research that improves the safety of the nation's schools and students. The initiative is carried out through partnerships between researchers, educators, and other stakeholders, including law enforcement, school districts, and mental health professionals. In 2016, the third year of the initiative, NIJ funded 25 projects, including the following:

- NIJ supported demonstration projects and evaluations of programs, practices, policies, and strategies to improve school and student safety. Projects include a first-of-its-kind, research-based framework for implementing law enforcement programs in schools; a randomized intervention to evaluate student-focused and comprehensive school safety strategies; and a comprehensive research study of two intervention strategies for students with behavioral health conditions.
- NIJ supported research to better understand the potential root causes and related factors that contribute to school violence as well as the impact and consequences of school violence. For example, a partnership between RMC Research Corporation, the Oregon Youth Authority, and the Oregon Department of Education will conduct a study of the potential long-term consequences associated with suspension and expulsion among targeted students and their subsequent involvement in the juvenile justice system.
- NIJ supported studies to understand the localized and interrelated factors that influence school safety and school violence using a longitudinal perspective. Projects include empirical research on the relationships between risk and protective factors related to youth safety and well-being, and a study examining how school safety and student outcomes are associated with school-based risk and protective factors.

# Crime

## Human Trafficking

NIJ has been funding research on human trafficking for well over a decade, and its current research portfolio comprehensively addresses focus areas such as:

- Scope, prevalence, and perpetration of the crime.
- Effective criminal justice responses and challenges to trafficking.
- Victimization experiences and how best to meet victims' needs.
- How best to reduce the demand for trafficking in persons.

Taking into account the survivor community's desire to engage the research community and provide a first-person account of victims, NIJ also seeks to promote researcher-survivor partnerships.

NIJ made four research awards addressing human trafficking in 2016. These projects were selected to address knowledge gaps related to trafficking in the following priority areas:

- Evaluations of effective investigative initiatives.
- Community and state-level prevalence estimates.
- Trafficking in Indian Country and Alaska Native communities.

The first project, awarded to the Research Triangle Institute, seeks to identify effective service strategies and develop evidence-based services for victims of trafficking. Potential beneficiaries of the research include service providers, funders, policymakers, and other researchers and evaluators.

The second project, conducted by the Urban Institute, focuses on sex trafficking of American Indian/Alaska Native (AI/AN) women and youth on and off tribal lands. AI/AN leaders have specifically requested sex trafficking needs assessments to gather information so their communities can address sex trafficking with policies and practices that truly respond to tribal priorities and concerns.

The third project, awarded to Georgia State University, will estimate the prevalence of trafficking among homeless and runaway youth in Atlanta. Working with law enforcement and trafficking survivors, the research team will assess a broad range of trafficking experiences and law enforcement contact.

The fourth project will be conducted across multiple jurisdictions by the Justice Research and Statistics Association. The study will assess the effectiveness of promising strategies, approaches, and tools being used to investigate and prosecute human trafficking cases in Honolulu, Miami-Dade County, San Diego, and elsewhere.

## Radicalization

NIJ began funding research into domestic radicalization in 2012. As both community- and government-led programs to combat terrorism arose, so too did the need to evaluate those programs and measure their effectiveness. One particular program, the World Organization for Resource Development and Education (WORDE), was recently evaluated through an NIJ grant. It showed promising results for effectively engaging the community to better understand several dynamics related to countering terrorism:

- Barriers to collaboration between the public and service providers.
- Community awareness of risk factors for radicalization to terrorism.
- Changes in behaviors, attitudes, knowledge, and relationships.
- Recruitment and retention.
- Measures/metrics to assess other programs for countering radicalization to terrorism.

Analytic Services Inc. will apply the WORDE program in a high school in Prince George's County, Maryland. The NIJ-funded project will test whether peers are the people best suited to detect signs of radicalization, and whether they could play a substantial role in prevention and intervention efforts.

## Firearms

Although violent crime rates have fluctuated in recent years and are well below the peaks reached in the early 1990s, firearm violence continues to pose a serious threat to public safety. Most homicides in the United States are committed with firearms.

NIJ has a long history of supporting research on firearms, including a number of studies that examine how firearms go from legal purchase to use in illegal activities. NIJ has also supported a variety of studies that evaluate the effectiveness of strategies to reduce firearm violence. However, there remains a great need for high-quality research to inform efforts at the national, state, and local levels to better understand and respond to firearm violence.

In 2016, NIJ made four awards to study the characteristics of firearm violence, risk and protective factors, and interventions and strategies to reduce firearm violence. The awards include:

- A team at Harvard University will study where and how often police shootings occur, how often they prove lethal, and how to categorize legal-intervention homicides.
- The Fund for the City of New York/Center for Court Innovation will conduct a study to estimate youth involvement with guns and its causes among youth living in disadvantaged urban areas. The project will provide an in-depth understanding of the motivations for gun carrying and use.

## Drugs and Crime

NIJ's drugs and crime research program promotes cost-efficient law enforcement, court, and corrections responses to illegal drug markets and criminal behavior related to illicit drug use. The program studies crime reduction through several approaches:

- Epidemiology – Patterns among drugs, violence, and crime to inform communities and service providers.
- Prevention and intervention – Policies and programs to prevent or reduce drug-related crime.
- Drug markets – Drug production and distribution information to inform law enforcement.
- Market disruption – Drug interdiction and other strategies to disrupt or deter markets.
- Forensic science – Drug recognition and detection for law enforcement and offender monitoring.

Over the past several years, the United States has experienced important developments affecting drug-related crime, including legislation that decriminalizes or legalizes marijuana and other cannabis products, a resurgence in heroin use, growth in prescription drug diversion, and a proliferation of novel psychoactive substances and chemically engineered drugs. These developments have raised several challenges for law enforcement and other criminal justice agencies concerning drug intelligence and surveillance, criminal investigations, and prosecution.

In 2016, NIJ funded two projects to examine the feasibility, impact, and cost efficiency of tools, protocols, and policies that support criminal justice agencies in addressing drug trafficking, markets and use, and the effects of drug legalization and decriminalization on law enforcement. The first study will examine how state marijuana laws impacted law enforcement activities, and how marijuana trafficking enterprises have evolved in response to legislative and enforcement changes. The second study, conducted in Washington state, will examine how law enforcement agencies in different jurisdictions have handled drug offenders and offenses, particularly involving marijuana, before and after legalization. Researchers also plan to look at what effects marijuana legalization has had on crime in urban, rural, tribal, and campus jurisdictions.



# Corrections

## Female Inmate Experiences

In 2014, the National Research Council published *The Growth of Incarceration in the United States: Exploring Causes and Consequences*. The report identified critical knowledge gaps related to incarceration in the United States, including the following:

- The absence of even basic information on modern conditions of confinement.
- The potential heterogeneity in incarceration effects across individual and institutional contexts.
- The limited understanding of any association between maternal incarceration and child well-being.

To address these gaps, NIJ has awarded funding to Pennsylvania State University to explore the prison and re-entry experiences of female inmates incarcerated in three Ohio and Pennsylvania prison units. The project will study informal organization and culture by mapping friendship networks, status hierarchy, and romantic ties; investigate the sources of prison status and the associations between inmate social position and outcomes such as prison victimization, mental health, official misconduct, and family visitation; and assess parole-eligible inmates' future expectations, social capital, and preparations for community re-entry. The project will also follow participants post-release to understand how previously imprisoned women, their children, and caregivers have adjusted to life after prison and discover whether their envisioned plans came to fruition.

## Patterns of Incarceration

Prior research on parental incarceration has documented negative effects on various forms of child well-being — ranging from conduct problems to academic deficits and, eventually, an intergenerational cycle of criminal justice involvement. Yet, existing research has not adequately assessed the range of other family circumstances and disadvantages that may co-vary with the parents' criminal justice system involvement, and knowledge about basic mechanisms underlying incarceration effects remains markedly incomplete.

NIJ has awarded funding to researchers at Bowling Green State University to examine the effect of parental incarceration on a full range of child well-being outcomes. Encompassing early health status, parenting behaviors, parents' criminal justice involvement, and patterns in parents' criminal behavior, the study will determine whether variability in crime and incarceration exposure across a child's full network (including multigenerational patterns of incarceration) explains additional variance in the child's well-being. Researchers also plan to identify mediating mechanisms — including consequences of incarceration — for changes in economic circumstances, social relationships, and perceived stress or stigma.

## Restrictive Housing

From 2011 to 2012, approximately 20 percent of state and federal inmates had spent some amount of time in segregated or restrictive housing. Restrictive housing — defined as the practice of removing inmates from the general population and imposing additional restrictions on their movement, behavior, and privileges — is a widely used although at times controversial practice in corrections. Understanding its broader use and impact is crucial to maintaining a safe environment while preserving the physical safety and mental well-being of inmates and staff.

In 2016, NIJ made four awards to examine the use of restrictive housing in corrections. NIJ sought research to examine the extent of restrictive housing and its effects on inmates and the correctional environment. The projects are as follows:

- A team at Arizona State University and the Arizona Department of Corrections will study whether inmates in restrictive housing experience a change in mental health outcomes as compared to inmates not placed in restrictive housing. The study will also look at whether correctional officers working in restrictive housing suffer any impacts to their mental and physical health.
- A team at the University of Cincinnati will examine how restrictive housing is used by state prisons and the impact of restrictive housing on inmates, staff, and prison systems. Researchers will estimate prevalence and trends in the use of restrictive housing, identify individual- and facility-level factors that predict inmate placement in restrictive housing, examine inmate-level impacts of restrictive housing during and after incarceration, and estimate facility-level impacts of the practice on overall prison safety and order.
- A team led by the Vera Institute of Justice will assess the use of step-down programs and the impact of working in restrictive housing on the mental, emotional, and physical well-being of correctional officers. As part of this project, the researchers will create a catalog of types of restrictive housing and step-down programs to establish more precise terms.
- A team at Florida State University will examine whether restrictive housing harms prisoners, staff, and institutions by studying data from the Florida Department of Corrections, supplemented by focus groups with and surveys of prison administrators and personnel.

# Forensic Science, Technology, and Evidence

## Protecting the Privacy of Victims and Witnesses

There are many instances in which information obtained from the mobile device of a victim or witness may help law enforcement further the investigation of a crime or determine that a crime was committed. Bystander video capture of an incident is one of the most common forms of evidence from mobile devices. Other potential evidence could include text messages, photographs, and audio recordings.

Existing law enforcement tools that collect evidence from mobile devices are likely to capture all data held on the device, including data that are not germane to the incident in question. Knowing this, victims and potential witnesses may be unwilling to surrender their devices to law enforcement. Law enforcement needs the capability to collect digital evidence from devices selectively in order to protect the privacy of the devices' owners.

In 2016, NIJ made two awards to develop software solutions to this challenge:

- Georgia Tech Research Institute, in collaboration with the DeKalb County Department of Police, will develop mobile apps that victims and witnesses can use to personally select potential evidence and distribute content directly to law enforcement. These apps will provide digital signatures of transaction and support the chain of custody through the entire process.
- Florida State University will develop a software tool, in part using machine-learning techniques, that can discretely extract relevant data from mobile devices surrendered to police by victims and witnesses.

## Research and Development in Forensic Science for Criminal Justice Purposes

NIJ supports both basic and applied research and development projects to increase the body of knowledge guiding and informing forensic science policy and practice and to advance the production of useful materials, devices, systems, and methods with potential forensic applications. The intent of this program is to direct the findings of scientific research toward the development of highly discriminating, accurate, reliable, cost-effective, and rapid methods for the identification, analysis, and interpretation of physical evidence for criminal justice purposes.

In 2016, NIJ made 53 awards for forensic science research and development.

## Research and Evaluation for the Testing and Interpretation of Physical Evidence in Publicly Funded Forensic Laboratories

NIJ's Research and Evaluation for the Testing and Interpretation of Physical Evidence in Publicly Funded Forensic Laboratories program supports identification of the most efficient, accurate, reliable, and cost-effective methods for identifying, analyzing, and interpreting physical evidence for criminal justice purposes. Under this program, NIJ supports projects that:

- Identify and inform the forensic community of best practices through the evaluation of existing laboratory protocols.
- Have a direct and immediate impact on laboratory efficiency and assist in making laboratory policy decisions.

Program goals include the assessment of existing laboratory protocols to improve understanding of their scientific rationale, and the evaluation of emerging methods to assess their value in comparison with methods currently in use.

In 2016, NIJ made six awards under this program:

- The University of New Mexico Health Sciences Center will study the use of X-ray computed tomography (CT) scans for investigating deaths post-mortem. The use of CT scans in medical examiners' offices has the potential to improve case management, workflow, and cost-effectiveness.
- The Georgia Bureau of Investigation will study whether conducting technical and administrative reviews of all case reports is the most effective way to minimize errors in forensic conclusions. By tracking which cases require corrections at the review stage, the researchers hope to identify the kinds of cases for which the probability of an error is higher and make the review process more efficient by focusing on those cases.
- The Maryland Department of State Police will evaluate the potential advantages of the Vision X comparison microscope over a traditional comparison microscope for firearm and tool mark analysis. The technology has the potential to effect significant improvements in the sharing of class characteristics and other data associated with shell casings and bullets from specific firearms.
- The Forensic Anthropology Division of the Harris County Institute of Forensic Sciences will conduct internal studies to identify and mitigate potential areas of cognitive bias and will develop validation and performance measures for osteometric equipment and analytical software. This quality assurance research will help shape institutional policies and produce best practice recommendations for the field.
- The Virginia Department of Forensic Science will test the accuracy and reliability of LatentSleuth technology for algorithmic analysis of latent prints and will determine whether integrating LatentSleuth into the current workflow for complex latent print comparisons improves efficiency and reproducibility.

- The University of North Texas Health Science Center will begin implementing high-throughput, second-generation DNA sequencing of mitochondrial DNA while assessing the process's cost, efficiency, completeness, quality, and accuracy.

## Speeding the Detection of Child Pornography

Much of law enforcement seizure of media potentially containing child pornography involves video. The primary challenges to automation of the detection of child pornography in video are poor image quality, image size, and the orientation of the individual in the image. Determining if an unidentified individual in an explicit video is an adult or a child often relies on medical testimony dealing with anthropomorphic indicators of age, which do not always correspond to true age. Current solutions for detecting child pornography in video rely upon representative key-frame image captures that the analyst must review manually. Although this method is an improvement over having to view an entire video, it is still time consuming and does not significantly reduce the workload of computer forensic analysts.

In 2016, NIJ made two awards to develop software solutions for the detection of prepubescent children in videos of varying quality. New York University, in collaboration with the Child Exploitation Investigations Unit of the Department of Homeland Security and Griffeye, will apply advanced machine-learning and 3D reconstruction techniques to develop an algorithm for the detection of children in pornographic videos. The University of Rhode Island, with the support of the Rhode Island State Police and Rhode Island Internet Crimes Against Children Task Force, will apply advanced machine-learning and computer-vision techniques toward the same goal.

## Graduate Research Fellowship in Science, Technology, Engineering, and Mathematics

The Graduate Research Fellowship in Science, Technology, Engineering, and Mathematics (GRF-STEM) provides awards to accredited academic institutions to support graduate research leading to doctoral degrees in areas that are relevant to ensuring public safety, preventing and controlling crime, and ensuring the fair and impartial administration of criminal justice in the United States. Through the GRF-STEM program, NIJ supports STEM graduate education by investing in academic institutions that support outstanding and promising doctoral students. The ultimate goal of this program is to increase the pool of researchers who are involved in providing STEM-based solutions to problems that affect criminal justice policy and practice in the United States.

In 2016, NIJ awarded 22 new and 16 continuation GRF-STEM fellowships in support of advanced graduate education related to criminal justice.

# Capacity Building and Technical Assistance

## Coverdell Forensic Science Improvement Grants

The Paul Coverdell Forensic Science Improvement Grants program awards grants to states and units of local government to improve the quality and timeliness of forensic science, medical examiner, and coroner's office services. Funds may be used to eliminate backlogs in the analysis of general forensic evidence or to train and employ forensic laboratory personnel to eliminate such backlogs.

In 2016, NIJ made 74 Coverdell awards.

## National Missing and Unidentified Persons System

Currently in the United States, thousands of people are searching for those who are missing. The National Missing and Unidentified Persons System (NamUs) was developed to provide national assistance in this search, for those living and deceased, in the hope of resolving these cases. Many of the nation's unidentified persons were victims of foul play, and identifying a victim is the first step in a criminal investigation. NamUs assists law enforcement agencies, as well as medical examiners and coroners, in their mission of supporting public health and public safety.

In 2016, NIJ partnered with the University of North Texas Health Science Center to manage the day-to-day operations of NamUs, support ongoing NamUs programs, continue national outreach efforts, provide and manage free forensic services, provide national technical assistance, and collaborate with NIJ scientists to evaluate the impact of NamUs on medicolegal investigative efforts.

## DNA Capacity Enhancement and Backlog Reduction Program

The goal of NIJ's DNA Capacity Enhancement and Backlog Reduction (CEBR) program is to help eligible states and units of local government process, record, screen, and analyze forensic DNA and DNA database samples and to increase the processing capacity of public forensic DNA and DNA database laboratories. Increased laboratory capacity and decreased sample turnaround time will aid laboratories in reducing the number of forensic DNA and DNA database samples awaiting analysis. Furthermore, all eligible DNA profiles obtained with funding from this program are entered into the Combined DNA Index System (CODIS).

In 2016, NIJ made 132 CEBR awards.

## Sexual Assault Forensic Evidence — Inventory, Tracking, and Reporting

According to the NIJ special report, *The Road Ahead: Unanalyzed Evidence in Sexual Assault Cases*, the number of unanalyzed sexual assault kits (SAKs) nationwide is unknown. SAKs contain biological and trace evidence along with other physical evidence collected from a victim. The SAKs may be stored in a number of places, such as crime laboratories, police department evidence storage units, hospitals, and clinics.

Many law enforcement agencies do not have computerized systems to track the processing of a SAK. The Sexual Assault Forensic Evidence — Inventory, Tracking, and Reporting (SAFE-ITR) program helps eligible states, units of local government, and tribal governments inventory, track, and report all untested and unsubmitted SAKs, and also helps these jurisdictions ensure accountability and transparency for the collection, processing, and testing of SAKs.

In 2016, NIJ made four awards through the SAFE-ITR program:

- Georgia’s Criminal Justice Coordinating Council will inventory all unsubmitted SAKs in the state and all untested SAKs currently in storage at the Georgia Bureau of Investigation’s Crime Lab, implement a statewide barcode system to track SAKs from distribution through case disposition, and report SAK data on a website that is accessible to the public to ensure accountability and transparency.
- The Nevada Office of the Attorney General will partner with the state’s two forensic laboratories and two largest law enforcement agencies to introduce a comprehensive, statewide SAK evidence tracking system. The data gathered by such a system will allow easy reporting to granting agencies, the public, and other organizations that need this information.
- The Montana Department of Justice will develop a statewide computerized system to inventory and track sexual assault evidence through all phases of the criminal justice process — from collection through final disposition of the case.
- The Oregon State Police will develop a secured, automated system for tracking SAKs from the time the distributor sends the kits to the medical facility through to the disposition of the case. The tracking system will be available to law enforcement agencies, medical facilities, and prosecuting attorneys’ offices at no charge.

## Forensic Technology Center of Excellence

NIJ’s Forensic Technology Center of Excellence (FTCoE) provides testing, evaluation, technology assistance, and other services with regard to technologies intended for use by crime laboratories, forensic service providers, law enforcement, and other criminal justice agencies to combat crime. The FTCoE improves the safety and effectiveness of criminal justice technology and provides better access to this technology for law enforcement and

other criminal justice agencies. In 2016, the FTCoE was awarded to the Research Triangle Institute. The FTCoE and its partners:

- Provide scientific and technical support to NIJ's research and development efforts.
- Facilitate demonstration, transfer, and adoption of technology into practice by crime laboratories, forensic science providers, law enforcement, and other criminal justice agencies.
- Provide technology assistance, information, and support to law enforcement and other criminal justice agencies.
- Develop and provide access to resources for research, education, and best practices in the forensic science and criminal justice community.
- Work with NIJ social scientists to assess and communicate the impact of forensic science on the criminal justice system.

## Postconviction DNA Testing

Since the advent of forensic DNA analysis, a growing number of Americans convicted of violent crimes have been exonerated through DNA analysis of evidence that was untested at the time of trial. New technologies have increased the likelihood of successful DNA analysis of aged, degraded, limited, or otherwise compromised biological evidence. As a result, crime scene samples once thought to be unsuitable for testing may now yield viable DNA profiles. Moreover, samples that had previously generated inconclusive DNA results may be amenable to reanalysis using newer methods.

NIJ provides funding to help defray the costs (e.g., additional personnel, overtime, testing supplies, services) associated with postconviction DNA testing for violent felony offenses in which actual innocence might be demonstrated.

In 2016, NIJ's Postconviction DNA Testing program supported the exoneration of seven wrongfully convicted individuals who had collectively served over 100 years in prison for crimes they did not commit.



# Highlights of Dissemination

## Violence Against American Indian and Alaska Native Women and Men: 2010 Findings From the National Intimate Partner and Sexual Violence Survey

This report examines the prevalence of violence against American Indian and Alaska Native women and men, using data from a large, nationally representative sample from the 2010 National Intimate Partner and Sexual Violence Survey (NISVS), with a focus on sexual violence, physical violence by intimate partners, stalking, and psychological aggression by intimate partners.

The report estimates that more than four out of every five American Indian and Alaska Native women (84.3 percent) have experienced violence in their lifetime, and 56.1 percent have been victims of sexual violence. More than four out of five American Indian and Alaska Native men (81.6 percent) also have experienced violence in their lifetime, and 27.5 percent have been victims of sexual violence. Relative to non-Hispanic white-only women, American Indian and Alaska Native women are 1.2 times more likely to have experienced violence in their lifetime and are 1.7 times more likely to have experienced violence in the past year. Relative to non-Hispanic white-only men, American Indian and Alaska Native men are 1.3 times more likely to have experienced violence in their lifetime.

## ***NIJ Journal* Issue No. 276**

The *NIJ Journal* features articles to help criminal justice policymakers and practitioners stay 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.

In 2016, NIJ published issue 276 of the *Journal* with a focus on the impact of criminal justice research and development. Highlights from the seven articles in this issue include:

- Describing how isotopic analysis of hair samples can reveal the history of a person's location and help put a name and story to unidentified remains.
- Showing that multidisciplinary teams can effectively combat elder abuse by collaborating across disciplines.
- Understanding how sentinel event reviews can be used to move forward constructively after negative outcomes in criminal justice.
- Explaining how research translates into evidence-based practices at the local level in one North Carolina police department.

By placing the results of recent and ongoing NIJ research in the hands of policymakers and practitioners, the *Journal* ensures that NIJ will have the widest possible impact in advancing criminal justice nationwide through science.

## **Documenting and Explaining the 2015 Homicide Rise: Research Directions**

The debate over the size, scope, and causes of the homicide increase in 2015 has been largely free of systematic evidence. This white paper documents the scale of the homicide increase for a sample of 56 large U.S. cities and examines three plausible explanations of the homicide rise: an expansion of urban drug markets fueled by the heroin epidemic, reductions in incarceration resulting in a growing number of released prisoners in the nation's cities, and a "Ferguson effect" resulting from widely publicized incidents of police use of deadly force against minority citizens. The paper concludes with a call for the more frequent and timely release of crime information to address crime problems as they arise.

## **Notifying Sexual Assault Victims After Testing Evidence**

This report presents two sample protocols for notifying sexual assault victims of the results of delayed testing of evidence in their SAKs. These protocols are based on the work of two multidisciplinary teams funded by NIJ to develop plans for managing previously untested SAK evidence and may assist other jurisdictions in how best to notify sexual assault victims of their SAK test results. Using a victim-centered approach when notifying sexual assault victims may help to minimize the trauma they experience when receiving this type of information, particularly in older cases with delayed SAK testing.

The protocols also involve educating victims, service providers, and the general public about the impact of sexual assault trauma on the health and well-being of the victim. Based on the lessons learned from the development of the protocols, recommendations are outlined to guide other jurisdictions in the development of similar protocols.

## **Forming an Action-Research Team to Address Sexual Assault Cases**

This instructional report reviews eight lessons learned about forming a team to conduct action research on how to address a backlog of untested SAKs. It is based on the experiences of a team formed to address this issue in Detroit, Michigan.

First, addressing a SAK backlog requires "champions." Respected leaders must be committed to the cause, keeping key organizations and systems engaged in solving the problem. Second, forming a multidisciplinary team is important, but "building" a team is even more important; allocating time to learn about the roles of each team member and the work of their organizations is critical. Third, a project coordinator is essential to the success of the project. Fourth, group facilitation has its challenges. Fifth, specify who has decision-making authority. The team should clarify what decisions individual members can make and which of the team's decisions are binding or are merely advisory. Sixth, balance the workload, recognizing that new SAKs continue into the backlog. Seventh, prepare for change, since change is a constant factor faced by the team. Eighth, the action-research model can be unclear to practitioners, who may not have participated in action-research projects.

## **Performing an Audit of Sexual Assault Evidence in Police Custody**

Based on the lessons learned from an NIJ-funded project in Detroit, Michigan, this report presents recommendations for performing an audit of the processing status of sexual assault evidence in police custody, particularly evidence contained in SAKs.

First, bring everyone to the table. Developing a multidisciplinary team will ensure that diverse perspectives are considered at every stage of the audit process. Second, formulate goals. Narrowly defined goals might include determining the number of SAKs not yet submitted for forensic testing; broader goals might involve a review of each SAK to obtain information on the statute of limitations, the potential for prosecution, and other issues related to addressing delayed SAK testing. Third, clarify language and agree on terms to be used. This prevents miscommunication and misunderstandings among team members. Other recommendations for auditing sexual assault evidence in police custody pertain to the storage locations for SAKs, the computerized status of information on sexual assault evidence, the inclusion of information technology staff, a pilot project with a small number of SAKs, development of an efficient workflow, creation of a central database, assessment of available resources and staffing plan development, and the expected disagreements on audit findings and conclusions. Other recommendations for the audit procedure include reviewing local policies and state statutes on evidence retention, preparing for media inquiries and public scrutiny, and being aware that initial audit data may require revisions if more information becomes available.

## **Creating a Plan to Test a Large Number of Sexual Assault Kits**

Based on lessons learned from an NIJ-funded project in Detroit, Michigan, this report offers recommendations to guide the development of a plan for testing a large number of previously untested SAKs.

First, form a multidisciplinary team to plan and implement an audit of all previously untested SAKs. The team should include representatives from the police, prosecution, forensic sciences, medicine, and systems- and community-based victim advocacy organizations. Second, explore each team member's perspective on the purpose and value of SAK testing. Third, discuss whether to test all or only some of the previously untested SAKs, which will be determined by the resources available. Other recommendations for testing a large number of SAKs pertain to the selection of terms used to describe the process to be undertaken, the development of a process for selecting which SAKs will be tested, use of the state statute of limitations as a criterion for selecting the SAKs to be tested, and budgeting sufficient time and resources for selecting the SAKs to be tested. Recommendations also concern budgeting extra time for older SAKs, tracking and sharing testing results, a plan for what happens after testing is completed, the review of local policies and state statutes regarding evidence retention, and determining whether legislative changes are needed to resolve backlogs of untested SAKs. Resources with additional information on this issue are listed.

# How Many People Connected with NIJ on Social Media?



## How Many People Saw NIJ's Social Media Posts?

### FACEBOOK

**476** Total Posts  
**604.3K** Total People Reached

**1,270** Average People Reached Per Post in FY 16  
**544** Average People Reached Per Post in FY 15  
**133%** Reach Changed Compared with FY 15

### TWITTER

**1,173** Total Posts  
**1.5M** Total People Reached

**1,277** Average People Reached Per Post in FY 16  
**1,021** Average People Reached Per Post in FY 15  
**25%** Reach Changed Compared with FY 15

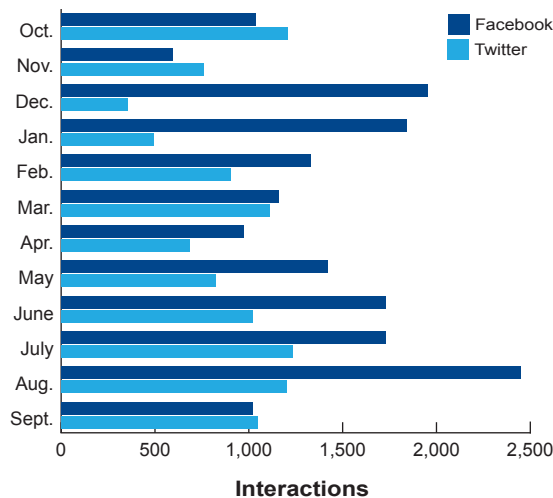
## How Did People Engage with NIJ on Social Media?

### FACEBOOK

**18,083** Total Interactions in FY 16

**15,596** Total Interactions in FY 15

**16%** Change in Interactions



### TWITTER

**10,837** Total Interactions in FY 16

**12,335** Total Interactions in FY 15

**-12%** Change in Interactions

# Appendix: Financial Data

**Exhibit 1: Funds Made Available Pursuant to P.L. 113-235**

Type of Funds	Amount (in millions)
<b>1. Research, Evaluation, and Development</b>	
a. NIJ "Base" Appropriation	\$36
b. Evaluation Clearinghouse/What Works Repository (CrimeSolutions.gov)	\$0
c. National Commission on Forensic Science	\$1
d. National Institute of Standards and Technology*	\$3
<b>2. State and Local Law Enforcement Assistance</b>	
a. DNA-Related and Other Forensic Programs and Activities	
i. DNA Analysis and Capacity Enhancement Program and Other Local, State, and Federal Forensic Activities	\$117
ii. Postconviction DNA Testing	\$4
iii. Sexual Assault Forensic Exam Program	\$4
b. Paul Coverdell Forensic Science Improvement Grants	\$13
c. National Missing and Unidentified Persons System (NamUs) (new program) (carve-out of JAG Formula)	\$2
d. Domestic Radicalization Research	\$4
e. Comprehensive School Safety Initiative	\$75
<b>3. Violence Against Women Prevention and Prosecution Programs</b>	
a. Analysis and Research on Violence Against Indian Women	\$1
b. Research and Evaluation on Violence Against Women and Related Issues	\$5
<b>4. Reimbursements and Transfers From Other Federal Entities (including OJP Components)</b>	\$17
<b>5. Section 215 Set-Aside for Research and Statistics</b>	\$15
<b>6. Carry-Forward Funds From Prior Fiscal Years (including reimbursements)</b>	\$3
<b>Total Funds</b>	<b>\$300</b>

\* P.L. 113-235 directed NIJ to transfer \$3 million to the National Institute of Standards and Technology.

**Exhibit 2: Allocation of Funds**

Type of Activity	Subcategory	Amount (in millions)	Percent
<b>Social Science</b>	Research and Development*	\$113	37.7%
	Training and Technical Assistance	\$0	0.0%
<b>Science and Technology</b>	Research and Development*	\$7	2.3%
	Technology Assistance/Test and Evaluation	\$4	1.3%
<b>Investigative and Forensic Science</b>	Analysis and Capacity Enhancement**	\$82	27.3%
	Research and Development*	\$33	11.0%
	Training and Technical Assistance	\$12	4.0%
<b>Dissemination/Outreach/Program Support</b>		\$19	6.3%
<b>Carve-Out for Section 215 Set-Aside for Research and Statistics</b>		\$3	1.0%
<b>OJP Management and Administration (M&amp;A)</b>		\$20	6.7%
<b>Direct Transfer to the National Institute of Standards and Technology (NIST)</b>		\$3	1.0%
<b>Carryover (including reimbursements)***</b>		\$4	1.3%
<b>Total</b>		<b>\$300</b>	

\* Per Section 200.87 of the new OMB Uniform Guidance: Cost Principles, Audit, and Administrative Requirements for Federal Awards (Omni-Circular): "Research and development" means all research activities, both basic and applied, and all development activities that are performed by nonfederal entities. The term research also includes activities involving the training of individuals in research techniques where such activities utilize the same facilities as other research and development activities and where such activities are not included in the instruction function. "Research" is defined as a systematic study directed toward fuller scientific knowledge or understanding of the subject studied. "Development" is the systematic use of knowledge and understanding gained from research toward the production of useful materials, devices, systems, or methods, including design and development of prototypes and processes.

\*\* 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 2016 (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. Also included are funds received via Reimbursable Agreement from another federal agency (including an OJP component) that remained unobligated at the end of the fiscal year.

**Exhibit 3: Solicitations by Title, Number of Applications and Awards, and Value****Exhibit 3a: Competitive Awards**

Solicitation Title	Awards Made	Value of Awards
Community Corrections: Technology Research, Development, and Evaluation to Improve Supervision and Outcomes	0	\$0
Comprehensive School Safety Initiative, Fiscal Year 2016	25	\$67,298,763
Continuation Awards, Fiscal Year 2016	42	\$20,292,190
Developing Improved Means to Collect Digital Evidence	6	\$2,697,744
Elder Abuse Prevention Demonstration Project: Planning Phase	2	\$799,370
Evaluation of the Bureau of Justice Assistance Sexual Assault Kit Initiative	1	\$1,999,995
Forensic Technology Center of Excellence	1	\$4,999,804
Graduate Research Fellowship in Science, Technology, Engineering, and Mathematics	22	\$1,064,968
Investigator-Initiated Research and Evaluation on Firearms Violence	4	\$2,274,910
Longitudinal Cohort Study of Interpersonal Violence Among College-Aged Women and Men: Planning Phase	1	\$999,698
NIJ Evaluation of the Byrne Criminal Justice Innovation (BCJI) Program FY 2016	1	\$789,552
NIJ FY16 Data Resources Program: Funding for Analysis of Existing Data	4	\$159,779
NIJ Graduate Research Fellowship Program in the Social and Behavioral Sciences	7	\$222,415
NIJ Visiting Fellows Program	1	\$236,958
National Missing and Unidentified Persons System	1	\$4,700,000
New Investigator/Early Career Program in the Social and Behavioral Sciences	7	\$992,462
Paul Coverdell Forensic Science Improvement Grants (Competitive)	21	\$2,910,140
Postconviction Testing of DNA Evidence to Exonerate the Innocent	7	\$3,596,910
Real-Time Crime Forecasting Challenge	32	\$1,199,999
Research and Development in Forensic Science for Criminal Justice Purposes	53	\$24,858,633
Research and Evaluation for the Testing and Interpretation of Physical Evidence in Publicly Funded Forensic Laboratories	6	\$2,075,248
Research and Evaluation in Support of the Recommendations of the President's Task Force on 21st Century Policing	5	\$2,664,132
Research and Evaluation on Domestic Radicalization to Violent Extremism: Prevention and Intervention Demonstration Programs	3	\$2,199,993
Research and Evaluation on Drugs and Crime	2	\$1,995,718
Research and Evaluation on Identity Theft and Services to Victims of Identity Theft	1	\$749,827
Research and Evaluation on Institutional Corrections	7	\$4,910,579
Research and Evaluation on Trafficking in Persons	4	\$1,700,000
Research and Evaluation on Victims of Crime	7	\$3,023,313
Research on Bias Crimes	3	\$1,540,626
Research on Measurement of Teen Dating Violence	2	\$785,656
Research on "Sentinel Events" and Criminal Justice System Errors	1	\$642,348
Sexual Assault Forensic Evidence — Inventory, Tracking, and Reporting Program (SAFE-ITR)	4	\$3,335,612
The W.E.B. Du Bois Program Solicitation	7	\$1,157,061
Violence Against Women Research Consortium	1	\$4,999,982
<b>Total</b>	<b>291</b>	<b>\$173,874,385</b>

**Exhibit 3b: Noncompetitive Awards**

Solicitation Title	Awards Made	Value of Awards
FY 2016 DNA Capacity Enhancement and Backlog Reduction (CEBR) Program	132	\$63,399,849
Paul Coverdell Forensic Science Improvement Grants Program (Noncompete)	53	\$9,049,208
Non-Solicited Awards, Fiscal Year 2016	12	\$6,934,509
<b>Total</b>	<b>197</b>	<b>\$79,383,566</b>





