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David B. Muhlhausen, Ph.D.

Director, National Institute of Justice

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DIRECTOR'S MESSAGE



Fifty years ago, 911, hot spots policing, and license plate reader technology didn't exist. We didn't collect substantive data on many aspects of crime and criminal justice, let alone conduct rigorous evaluations to understand the impact of interventions. At NIJ, our golden anniversary has been an opportunity to reflect on our roots and how far we have come since our inception in 1968. With this special edition of our *NIJ Journal*, I'm excited to share NIJ's contributions to the evolution and progress of criminal justice issues over the past half-century.

In the 1960s, President Lyndon Johnson tasked a commission to examine the condition of law enforcement in America and put forward recommendations to reform our criminal justice system and tackle crime. The commission published its final report in 1967, which called for the U.S. Department of Justice to increase its grant support to state and local law enforcement agencies.

The following year, Congress passed the Omnibus Crime Control and Safe Streets Act. This act established the Law Enforcement Assistance Administration (LEAA), which allocated federal funding for criminal justice research as part of its activities. It also established the National Institute of Law Enforcement and Criminal Justice, which was renamed the National Institute of Justice in 1979.

The first year NIJ awarded grants was in 1968. Back then, NIJ was still a component of LEAA. In fiscal year (FY) 1968, LEAA awarded \$2.9 million — or \$21.4 million in today's dollars — split over 184 grants. Four of these grants were less than \$100, and the smallest was just \$45. To put this into perspective, NIJ awarded over \$209 million in grants in FY 2019, spread across 400 awards. We've come a long way.

Beyond an opportunity to revisit stories and remember, this anniversary has also been a time to reflect on where we're going over the next 50 years and beyond. NIJ has accomplished a lot in its first 50 years, and we have a bright future ahead.

Looking forward, I see research playing an ever more important role in how the criminal justice field operates. As our ability to collect and analyze data continues to improve, we will see an increase in the number of research studies and evaluations conducted as randomized controlled trials. This increased rigor will lead to a more informed understanding of criminal justice issues and the impact of our efforts to build community trust and reduce crime. The evidence-based movement has begun to take hold in criminal justice, particularly in the past decade. Over the next 50 years, I see data, evidence, and research becoming not just a tool for criminal justice practitioners, but an integral and indispensable part of all criminal justice operations.

In July 2018, NIJ hosted a Research for the Real World seminar to celebrate our 50th anniversary and discuss the shifting criminal justice landscape and role of research within it. Our speakers included two police chiefs and two former NIJ directors; one of them was James "CHIPS" Stewart, NIJ director from 1982 to 1990. All of the speakers emphasized the great influence that research can have in informing criminal justice system initiatives. As CHIPS said about NIJ, "Too often we neglect the fact that the research that's done here has real impacts in changing people's lives, saving people's lives, and restoring a sense of justice in living in America."

The articles in this *Journal* highlight the impact of NIJ research across the full spectrum of criminal justice issues. Many of these issues — such as violence against women, violent crime, and officer stress and trauma — have remained problems over time. DNA analysis, artificial intelligence, machine learning, digital forensics, less-lethal weapons, and other technological

developments have emerged as new fields, bringing with them important ethical and legal questions. We have seen many approaches to combating crime, including proactive policing and problem-solving courts. The articles in this issue cover all of these topics and more.

I hope you enjoy reading about NIJ's history, evolution, and impact in informing criminal justice policy and practice over the past half-century, and learning where we are headed in the years to come.

A handwritten signature in cursive script that reads "David B. Muhlhausen". The signature is written in black ink and includes a long horizontal flourish extending to the right.

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

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A BRIEF HISTORY OF NIJ

In the 1960s, rising crime was a national concern. At the beginning of the decade, the violent crime rate hovered at about 160 offenses per 100,000 population. It reached 200 by 1965.¹

President Lyndon Johnson responded in 1965 by establishing the President's Commission on Law Enforcement and the Administration of Justice. He charged the commission to "inquire into the causes of crime and delinquency" and to recommend actions "to prevent, reduce, and control crime."² The commission's report, *The Challenge of Crime in a Free Society* (1967), marked a turning point in the U.S. justice system. The genesis of the National Institute of Justice can be traced back to a chapter of the report titled "Research — Instrument for Reform," which asserted that among all the needs of law enforcement and criminal justice practitioners, "the greatest need is the need to know."³

President Johnson created a new federal agency, the Law Enforcement Assistance Administration (LEAA), to fund programs and initiatives aligned with his commission's recommendations.⁴ Before this, resources for addressing crime, justice, and public safety existed almost exclusively at the state and local levels. For the first time, it was possible to sustain a national conversation and assemble a broad picture of crime and justice across the United States — which highlighted, in turn, the wide array of practices and institutions in place. Research was central for making sense of this complexity. Understanding what works in criminal justice became the mandate of the National Institute of Law Enforcement and Criminal Justice (NILECJ), the LEAA bureau tasked with ensuring that the agency's grants and programs were research-based.⁵

NILECJ began and ended the 1970s with two major accounts of criminal justice research. In 1971, NILECJ released a report summarizing findings from the hundreds of projects funded by the federal government since the mid-1960s. The majority of these projects had supported law enforcement, particularly police; corrections, courts, and prosecution projects had each



received smaller portions of funding.⁶ In 1979, NILECJ published *How Well Does it Work?*, which compiled results across five programmatic areas: corrections, community crime prevention, courts, police, and juvenile delinquency.⁷ This report outlined the difficult task ahead for the young field of criminal justice research and evaluation, offering the frank assessment that the high-quality data necessary for thorough evaluation were lacking across the board.⁸

Also in 1979, NILECJ became the National Institute of Justice (NIJ).⁹ By the 1980s, the new Office of Justice Programs (OJP) replaced the LEAA, and NIJ remains part of OJP to this day.¹⁰ Throughout the 1980s, NIJ continued the work of building a robust evidence base in criminal justice. NIJ was an early and vocal proponent of using randomized trials and other experimental interventions to produce the kind of strong evidence that observation alone could not supply.¹¹ Two participants at a conference on randomized experiments sponsored by NIJ in 1987 wrote, “One reason that experimentation has been rare in the past is that, more than any other technique, it requires close cooperation between social science researchers and those who operate criminal justice organizations.”¹² NIJ was uniquely positioned to support and promote this type of research — NIJ had always been a bridge between justice practitioners and the academic community.



NIJ's work in the 1990s was spurred by the Violent Crime Control and Law Enforcement Act of 1994. The Crime Act's funding allowed OJP to create new programs addressing areas such as corrections, substance abuse, violence against women, and court innovations. The Crime Act also expanded NIJ's research activities, as NIJ was responsible for evaluating the new OJP programs.¹³ Two years after the Crime Act passed, Congress asked the Department of Justice to evaluate the effectiveness of its crime prevention funding. The result was NIJ's landmark 1997 report *Preventing Crime: What Works, What Doesn't, and What's Promising*.¹⁴ The authors of the report compiled existing research on more than 500 crime prevention practices to determine their impact. Practices backed by the evidence were labeled effective or promising. Equally important, the report detailed many practices that had proven ineffective at reducing crime, offering valuable lessons learned to future practitioners and policymakers. By assigning each program evaluation a score for scientific rigor, the report also launched a movement for common standards of evidence in criminal justice that continues to the present.¹⁵

The next generation of NIJ evaluation incorporated the *Preventing Crime* report's use of evidence standards as well as its commitment to including ineffective as well as effective programs. CrimeSolutions.gov was launched in 2010 as a public database of criminal justice programs, all rated according to the strength of available evidence for or against their effectiveness. The site also now compiles meta-analyses to rate general practices in addition to specific programs. As NIJ looks ahead to the next 50 years of research into what works, efforts like CrimeSolutions.gov represent NIJ's continuing commitment to improving criminal justice in the United States by translating evidence into real-world change for the better.

Notes

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2. Lyndon Johnson, *Executive Order 11236 — Establishing the President's Commission on Law Enforcement and Administration of Justice*, July 23, 1965.
3. President's Commission on Law Enforcement and Administration of Justice, *The Challenge of Crime in a Free Society*, Washington, DC: President's Commission on Law Enforcement and Administration of Justice, 1967, 273, <https://www.ncjrs.gov/pdffiles1/nij/42.pdf>.

4. LEAA was authorized by the 1968 Omnibus Crime Control and Safe Streets Act.
5. Here and elsewhere, this introduction is indebted to Thomas Feucht, former senior science advisor at NIJ, who generously provided background information on the history of NIJ.
6. National Institute of Law Enforcement and Criminal Justice, *Study and Evaluation of Projects and Programs Funded Under the Law Enforcement Assistance Act of 1965*, Washington, DC: Law Enforcement Assistance Administration, National Institute of Law Enforcement and Criminal Justice, 1971, NCJ 064601, <https://www.ncjrs.gov/pdffiles1/Digitization/64601NCJRS.pdf>.
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8. *Ibid.*, 15.
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50 Years of NIJ

Want to know more about NIJ's role in the history of criminal justice? A detailed look at the milestones of our first five decades is available at [NIJ.ojp.gov/timeline](https://www.nij.gov/timeline).



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BUILDING A CULTURE OF INTERAGENCY COOPERATION: NIJ AS CATALYST

BY PAUL A. HASKINS

A modestly scaled federal office among agency giants, NIJ has leveraged scientific knowledge and technical support acumen to transform the American law enforcement landscape. Tools that have revolutionized crime fighting and protected crime fighters are directly traceable to NIJ's innovation, research, and reputation within the criminal justice community.

Beyond empowering law enforcement and prosecutors across the nation with exceptional technology, NIJ has helped alter American law enforcement culture in significant ways — those familiar with its history point out — working to break down jurisdictional walls that long kept local departments from sharing information that could identify killers and spare prospective victims.

Historically, police departments operated in relative isolation from each other and from federal law enforcement agencies, observed James K. “CHIPS” Stewart, a former NIJ director (1982-1990). Then, in the 1970s and 1980s, a heightened need for interagency cooperation became evident as frightening new types and patterns of violent crime emerged.

In particular, by the late 1970s a string of brutal and seemingly inexplicable sexual serial killings had seized public attention and often left local law enforcement at a loss. That prompted NIJ to provide foundational support for a pioneering FBI initiative focused on elusive, and sometimes highly mobile, sexual serial killers. With an infusion of NIJ grant awards, the Bureau developed science-based methods to advance and professionalize criminal profiling of sexual murderers. The result — a new data set of serial killer characteristics associated with specific crime scene evidence — helped local law enforcement make sense of what often initially presented as baffling, “motiveless” crimes.

The NIJ-supported work by the FBI and its academic collaborators on serial killer profiling in that period inspired the current Netflix series “Mindhunter.” In key respects, the business side of the docudrama is faithful to historical fact, according to John E. Douglas, a retired FBI special agent and profiling program manager who directed the groundbreaking work with his colleague, the late Robert K. Ressler, another instructor with the Behavioral Science Unit of the FBI Training Division. The lead character in the “Mindhunter” cable drama, though fictional, is largely

derived from Douglas’s work with the FBI, which Douglas acknowledged in a recent interview.

Douglas and his FBI profiler colleagues built a special expertise in crime scene analysis, but a similarly confounding problem for law enforcement in that era was the nationwide spike in missing persons, Stewart said. Fate unknown — no body, no known crime scene. At the same time, the national “clearance rate” for solving murders was plunging, from close to 90% in 1960 to below 80% in 1970 (with a further drop to about 64% as of 2017), Stewart noted.

It had become evident in those years, Stewart said, that some groupings of missing persons cases were homicides likely committed by a single killer in different places. But individual law enforcement agencies lacked the means and pathways to mine critical, connecting evidence beyond jurisdictional borders. Stewart, who was a criminal investigations commander with the Oakland (CA) police before being named a White House fellow and then NIJ director, realized that to solve complex murders involving sexual assault, departments needed better connectivity on forensic evidence and other investigative data. “It became apparent to me that the police needed more tools,” he said. “The jurisdictions literally were islands that were separated from everybody else. They had different file systems, and they really didn’t talk very often.”

NIJ’s commitment to forging a more coordinated and resourceful response to complex, multistate crimes, Stewart said, led to the selection of the FBI as the most logical place to house and manage a new, computer-based violent crime data repository and investigative center where local law enforcement agencies could access shared violent crime data and expert advice and analysis. Stewart pointed out that NIJ also subsidized the appointment of police fellows to the FBI program — experienced investigators who could assist local departments on difficult homicide cases. The computer-based data repository and the beefed-up FBI investigative support unit would form key elements of the NIJ-supported National Center for the Analysis of Violent Crime (NCAVC).¹

Looking back over more than three decades, Stewart and Douglas regard NIJ’s working partnership with the FBI in the 1980s — for the higher cause of helping law enforcement manage difficult homicides — as a historic step in a new direction for both the research agency and the Bureau.

Douglas said, “There wouldn’t be a National Center for the Analysis of Violent Crime today — there wouldn’t be several dozen agents today — without NIJ, who rooted us and gave us the foundation to build upon.”

The remainder of this article discusses (1) the science-based development and professionalization of criminal profiling expertise by the FBI in the “Mindhunter” era, made possible by NIJ grant support; and (2) NIJ’s proactive role, starting in the early 1980s, in opening pathways for investigative cooperation among state and federal agencies in solving violent crimes.

Minding the “Mindhunters”

In their free time, travelers on business often opt for lighter fare such as sightseeing or relaxing with colleagues. Starting in the late 1970s, Douglas and Ressler went down a decidedly darker path in their off-hours on the road. They began frequenting nearby high-security prisons for long, exceedingly frank talks with some of the most notorious killers of the 20th century. The agents’ tell-all interviews became a cornerstone of a unique, evidence-based FBI knowledge set on murderers’ methods, motives, and relationships — based on the likes of California’s “Co-ed Killer” Edmund Kemper; Charles Manson, master manipulator of the homicidal West Coast commune “The Manson Family”; New York’s “Son of Sam” serial murderer David Berkowitz; and Richard Speck, the unrepentant psychopath who slayed eight student nurses in their Chicago townhouse.

In time, with support from NIJ, the FBI team narrowed its focus to sexual serial killers — individuals who assault and murder one victim at a time (some engaging in gross mutilation) over an extended period. The agents’ finely honed criminal profiling acumen,² coupled with an instructive FBI data set of serial

killer traits and techniques amassed from dozens of prisoner interviews, would equip police to unmask more repeat murderers hiding in plain sight.

Douglas recalled that when he joined Ressler in the FBI Academy's Behavioral Science Unit, he thought a more practical approach to the unit's criminal psychology pedagogy would be beneficial. He advocated for less instructional emphasis on the formal medical terms for various abnormal psychological states — he viewed them as not especially helpful for police trying to solve crimes — and more emphasis on the facts of specific known cases. Eventually, the FBI profiling team would develop its own, more-relatable terminology on serial killer traits and patterns (see sidebar, "A New Language").

Douglas and Ressler staffed the FBI Academy's "Road Show" — two- to three-week trips to train police in their own backyards. Douglas taught criminal psychology, but by then the course covered mainly criminal profiling, he said. When on Road Show detail, Douglas and Ressler often had extensive free time between classes. "I'm telling my partner Ressler, 'Listen, we have all this downtime. We're here in California, let's go to San Quentin — let's interview Manson. We're here in Vacaville [site of a California state prison hospital] — let's interview Edmund Kemper.'"

It was survival instinct that motivated Douglas to seek out the company of serial killers behind bars. "I wanted to learn," he recalled, "and, really, it was survival. I said, 'To be good as an instructor, I need to learn the facts of the cases.'"

With Ressler on board but no FBI support for the agents' off-the-grid enterprise, they were on their own organizationally and literally as they ventured off to prisons in the Road Show's vicinity.

"We had to get a good selection of killers. The Bureau was still skeptical — I'm talking in late '79, '80. They'd say, 'What are you doing, going out there interviewing Kemper — what the hell's the purpose?'"

But to Douglas, understanding the thinking of serial killers required getting close to those already in

custody and engaging them on their terms. Recycling a metaphor used in the Netflix "Mindhunter" program, he said, "It's like truffles. You got to get down in the mud with them to understand. To me, it was just so basic. You go out and conduct the interviews from an investigative perspective."

Douglas is convinced, from the data he has seen, that at any given time between 35 and 50 serial killers may be operating nationwide, perhaps more.

A critical step in the evolution of the FBI profiling team's prison interviews was the team's introduction to researcher Ann Burgess, a psychiatric nurse then on the faculty of Boston College. She had heard of the early prison interviews and was intrigued. She persuaded Douglas and Ressler that structuring the interviews in a research framework and publishing the results would have a greater impact, Douglas recalled. Working with Burgess, Douglas's and Ressler's interviews moved from relatively informal, unstructured exchanges with inmates to scientifically solid research interactions that would support scholarly papers and yield a trove of high-value profiling data on serial killers.

"Ann Burgess came in and said, 'You guys have to professionalize what you're doing,'" Douglas recalled. "It's fascinating — what you're doing is reverse engineering. You're using victimology and forensic sciences to come up with a course for the investigation. But you have to professionalize it — you have to publish, you have to go outside the police magazines and publish professionally. To do that, you guys are going to have to come up with an instrument, a protocol where you conduct these interviews that we can computerize. And then you'll have to interview at least 36 serial killers.'"

Douglas and Ressler were persuaded that a scholarly framework might attract the program dollars they lacked. The plan worked — an initial grant award supporting the structured interviews followed.

The FBI's interview-driven research project on serial killers was a natural fit for NIJ, given the science agency's support of earlier research using inmate interviews to gain insights into criminal conduct.

A New Language

FBI criminal profiling pioneer John E. Douglas recalled that Ann Burgess, a psychiatric nurse on the Boston College faculty, played a pivotal role in convincing the FBI “Mindhunter” profiling team to shift to a more structured approach in their interviews of sexual murderers in prison, facilitating a scholarly research framework that would attract essential grant dollars from NIJ.

“Ann was pushing us for the professional journals,” Douglas, a retired FBI special agent who is now a consultant and author, said in a recent interview. “We’re getting all this research data that now we begin publishing in professional journals — psychological journals, criminology journals.”

NIJ first funded the FBI Mindhunter profiling work near the end of the 1970s.¹ In ensuing years, various combinations of the FBI profiling team members and academic collaborators — led by Douglas, his FBI behavioral sciences colleague Robert K. Ressler, and Ann Burgess — would publish more than a dozen science-based works establishing psychological and behavioral traits of sexual murderers associated with a variety of crime scene evidence.

NIJ grant support became a constant in that scholarship. “We had no trouble,” Douglas said. “They were part of everything we published. We needed the funding.”

To build an adequate data sample, Burgess told Douglas and his partner Ressler that they would need to complete no fewer than 36 structured interviews of sexual murderers, most of whom were serial killers. Collaborating with Burgess, Douglas and Ressler developed a 57-page prisoner interview protocol, a form with questions about the overall crime, the victim, and the offender. Ressler and Douglas directed the profiling unit’s laboratory, and Ressler and Burgess managed the NIJ grants that funded the expanded prison interviews, data collection and analysis, and related scholarship.

The initial NIJ grant, Douglas said, financed the team’s expanded field agenda — covering interviews of three dozen killers incarcerated across the country — and supported its prolific scholarship.

As the FBI team built its profiling arsenal in the 1980s, a portrait of the serial killer in particular cases could emerge more readily. One theory that proved to have high utility was that certain crime scene evidence was associated with a powerful, but hidden, sexual motive anchored in an active fantasy life.²

Among the many influential research discoveries by Douglas, Ressler, and Burgess, together or in various combinations with other agency and academic collaborators, were the following:

1. *Isolation of “organized” and “disorganized” murder types.* A study based on the 36 sexual murderers who were interviewed (25 of whom were serial murderers) established the validity of an investigative theory dividing those individuals into two groups, “organized” and “disorganized.” Organized offenders tended to have a high birth order, average or better intelligence, inconsistent parental discipline, and poor work performance, although they were socially adept. Their crime scene typically had a semblance of order, and the offender was calm after the crime. The victim was often a stranger. The disorganized offender, in contrast, was typically of low intelligence or low birth order. He was in a confused or distressed state of mind at the time of the crime. He was usually sexually incompetent

and socially inadequate, living alone or with a parental figure. The disorganized murderer was impulsive under stress, locating a victim in his own geographic area.³

2. *Correlation between abuse in childhood and mutilation in sexual crimes.* Ressler and a research team reported, in a study of sexual murders, a relationship “approaching significance” between early sexual abuse and later sexual deviations, including sexual sadism, with the ultimate expression of the murderer’s perversion being mutilation of the victim. Sexually abused murderers were more likely to mutilate victims, after the victim’s death, than were murderers who were not sexually abused.⁴
3. *Fantasy underlying four major phases of sexual murder.* Ressler and Burgess reported that the sexual fantasies of sexual serial killers can be so vivid that they provide the impetus for sexual violence against victims of opportunity, driving the murderer’s actions through at least four phases: planning and thinking about the murder, the murder itself, disposal of the body, and post-crime behavior. “Discovery of the body is very important to the overall fantasy, and the murderer may even telephone or write to police.”⁵

Summarizing the impact of NIJ on the FBI’s sexual killer profiling work in that era, Douglas said, “It just professionalized us, and we came up with a whole new language for law enforcement.”

Notes

1. The FBI profiling team’s receipt of news of an NIJ grant is the culmination of episode 4, season 1, of the Netflix “Mindhunter” series.
2. Ann W. Burgess, Carol Hartman, Robert K. Ressler, John E. Douglas, and Arlene McCormack, “Sexual Homicide: A Motivational Model,” *Journal of Interpersonal Violence* 1 no. 3 (September 1986): 252.
3. Robert K. Ressler and Ann W. Burgess, “Crime Scene and Profile Characteristics of Organized and Disorganized Murders,” *FBI Law Enforcement Bulletin* 54 (August 1985): 18-25.
4. Robert K. Ressler, Ann W. Burgess, Carol R. Hartman, John E. Douglas, and Arlene McCormack, “Murderers Who Rape and Mutilate,” *Journal of Interpersonal Violence* 1 no. 3 (September 1986): 273.
5. Robert K. Ressler and Ann W. Burgess, “Split Reality of Murder,” *FBI Law Enforcement Bulletin* 54 (August 1985): 7-11.

For example, in 1975, as NIJ focused on career criminals, the RAND Corporation received a grant to interview 49 male armed robbers from a California prison, all of whom had served at least one prison term.³ In fact, behavior-related research had been a core element of NIJ’s founding statutory mission under the Omnibus Crime Control and Safe Streets Act of 1968.⁴ That seminal legislation codified the 1967 recommendations of the President’s Commission on Law Enforcement and Administration of Justice, and the federal government went into the business of basic criminal justice research for the first time.

Besides enabling a full slate of interviews with serial killers for the profiling project, NIJ helped pay for the expansion of the FBI’s Behavioral Science Investigative Support Unit, and many more agents were hired, Douglas noted. The unit, with Douglas as its chief, grew to a staff of 43.

Once FBI leaders were persuaded that the profiling team’s work created a valuable crime-solving tool, Douglas said, “the directors were very supportive.” By August 1985, in the Director’s Message section of a special issue of the *FBI Law Enforcement Bulletin*

about the profiling team's scholarship,⁵ then-FBI Director William Webster acknowledged that one of the first tasks of the FBI's new National Center for the Analysis of Violent Crime was "to collect a data base on serial murders. We believe this is one area where a nationwide approach would best serve the needs of local authorities because many of these murderers are highly mobile in their violent criminal activities. The assistance rendered by the Behavioral Science Unit of our Training Division in developing profiles in unsolved homicide cases has been recognized by local authorities across the country. It is now an integral part of the Center."

Douglas stressed that criminal profiling is one technique that augments conventional investigative methods, but it will never replace them. "It became a viable investigative tool — something to consider," he said. "It is not a substitute for a thorough and well-planned investigation. It may reinforce your investigation or you may have to refocus the investigation." At times, Douglas said, the profiler needed to advise the investigators, "You're really taking this investigation in the wrong direction."

Forging a Culture of Cooperation

Stewart recalled that by the early 1980s, the nationwide proliferation of unsolved homicides and disappearances — in the sole jurisdiction of local police — presented a new opportunity for NIJ to facilitate centralized sharing of evidence and crime analysis among law enforcement agencies.

Over the ensuing decades, a new culture of cooperation among law enforcement agencies at all levels emerged, Stewart said, allowing better equipped, informed, and coordinated agencies to rely less on guesswork to fight crime. "Local law enforcement is becoming better because they have more objective, rigorous tools to assist them, so it is no longer the seasoned hunch and the grueling interrogation that may identify these predators," Stewart said.

Stewart said he was mindful of the FBI Academy staff's profiling prowess when, after he was named NIJ director in 1982, members of an NIJ advisory

board urged the Institute to create a central repository of unsolved homicides, where local police could get expert guidance on their cases and study corresponding crimes from other jurisdictions.

Stewart recalled, "We had this gigantic need. There was an aspect here that the police didn't know about — that the FBI didn't know about — where a rigorous, analytical look at this would really bring some discipline to something that was highly atomized, basically. It was spread out all over the United States. We didn't know anything that was going on."

Stewart continued, "Nobody had been coding murders in ways that say, 'What are the key discriminators that might separate a serial murderer, or a victim of a serial murderer, from an opportunity crime?' We were so desperate that investigators would go to the adjacent jurisdiction's library and look at old newspapers from the surrounding community — to look at old crimes and see if they had any kind of pattern." At the time, Stewart said, most local homicide investigators had no idea that the FBI was already trying to assemble behavior patterns derived from crime scenes into a research-based system to better identify related serial murders.

When he approached the FBI about housing the new violent crime repository program, FBI Academy leadership agreed, Stewart recalled, but with one condition: that the centerpiece would be a new NIJ-funded supercomputer that could receive and analyze huge volumes of violent crime data. Terms of the eventual "grand compromise" between NIJ and the FBI, Stewart said, were that "we'd pony up for the supercomputer, they would come up with the square footage and three people plus an analyst, and we'd have approval over all data collected." As part of the compromise, NIJ and the FBI agreed that local homicide investigators would serve as "fellows" to enhance the database's utility and educate police about the benefits of the research, Stewart said.

The computer would be the heart of a program known as ViCAP — the Violent Criminal Apprehension Program, with Ressler serving as its initial program manager. ViCAP today "maintains the largest investigative repository of major violent crime cases

in the U.S.,” according to the FBI’s ViCAP webpage.⁶ As acknowledged by both Stewart and FBI profiling manager Douglas as well as an analysis featured on the Office of Justice Programs website,⁷ critics have noted that more than 30 years after its inception, ViCAP could be a more robust investigative tool. Coding of crime input by local jurisdictions is complex, and participation is voluntary. The number of local and state agencies using ViCAP remains limited.

At the same time, Stewart pointed out, the ViCAP initiative represented a historic NIJ-FBI partnership — “unprecedented,” Stewart termed it — helping pave the way for a stronger culture of cooperation and vital data-sharing throughout the law enforcement world. That critical connectivity further solidified with NIJ-led advances in forensic DNA matching technology, again with NIJ at the forefront, Stewart noted. A more recent, high-profile example of NIJ and the FBI working synergistically to improve law enforcement and victim support is the NIJ-FBI Sexual Assault Kit Partnership, a joint effort to improve the collection and processing of quality DNA in sexual assault cases.⁸

As to the sustained impact of NIJ, Stewart said, “NIJ changed the world in an amazing way. It became a game-changer — in the way that [NIJ] leveraged new and developing technology and analysis.”

About the Author

Paul A. Haskins is a social science writer and contractor with Leidos.

Notes

1. NCAVC also received material support from two other U.S. Department of Justice entities, the Office of Justice Programs and the Office of Juvenile Justice and Delinquency Prevention, as then-FBI Director William Webster acknowledged in 1985. “Director’s Message,” *FBI Law Enforcement Bulletin* 54 no. 8 (August 1985).
2. Criminal profiling paints a picture of an unknown offender using probable traits derived from a close analysis of the crime itself and the crime scene. In a 1986 article in the *FBI Law Enforcement Bulletin*, Douglas and his co-author shared the FBI definition:

The profiling process is defined by the FBI as an investigative technique by which to identify the major personality and behavioral characteristics of the offender based upon an analysis of the crime(s) he or she has committed. The process generally involves seven steps. (1) Evaluation of the criminal act itself, (2) comprehensive evaluation of the specifics of the crime scene(s), (3) comprehensive analysis of the victim, (4) evaluation of preliminary police reports, (5) evaluation of the medical examiner’s autopsy protocol, (6) development of profile with critical offender characteristics, and (7) investigative suggestions predicated on construction of the profile.

John E. Douglas and Alan E. Burgess, “Criminal Profiling – A Viable Investigative Tool Against Violent Crime,” *FBI Law Enforcement Bulletin* 55 no. 12 (December 1986): 9.

3. National Institute of Justice, *25 Years of Criminal Justice Research*, Washington, DC: U.S. Department of Justice, National Institute of Justice, December 1994, 26, NCJ 151287, <https://www.ncjrs.gov/pdffiles1/nij/151287.pdf>.
4. 42 U.S.C. § 402(b)1-3.
5. Webster, “Director’s Message.”
6. Federal Bureau of Investigation, “ViCAP Missing Persons,” webpage, <https://www.fbi.gov/wanted/vicap/missing-persons>.
7. “[T]he ViCAP experience provides lessons that can inform regional data management and sharing. First, it is important to build bridges between various information systems to reduce duplication of effort. Investigators and analysts prefer to enter all case information at one time. Local and state agencies are reticent to participate in shared databases when additional reporting is involved. Next, personnel should be available to maintain the information system. . . . Only a handful of states have legislation requiring mandatory reporting to national databases within 30 days.” Bureau of Justice Assistance, “Regional Information Management and Sharing for Crime Analysis,” *Crime Analysis Toolkit*, Washington, DC: U.S. Department of Justice, Bureau of Justice Assistance, 2017, <https://it.ojp.gov/CAT/Documents/RegionallInformationManagementandSharingforCrimeAnalysis.pdf>.
8. National Institute of Justice and Federal Bureau of Investigation, “The NIJ-FBI Sexual Assault Kit Partnership – A Research Initiative for Unsubmitted Sexual Assault Kits,” webpage (last modified January 11, 2016), https://nij.gov/topics/law-enforcement/investigations/sexual-assault/Pages/nij-fbi-sak-initiative.aspx?utm_source=eblast-govdelivery&utm_medium=eblast&utm_campaign=nij-fbi-sak.

NCJ 252728



IDENTIFYING NEW ILLICIT DRUGS AND SOUNDING THE ALARM IN REAL TIME

BY JIM DAWSON

In October 2017, chemist and forensic toxicologist Barry Logan stood behind the podium at the National Institute of Standards and Technology's (NIST) Symposium on Synthetic Opioids and the Overdose Epidemic¹ and described a scenario that many in the audience were familiar with: Federal officers intercept a package containing an unknown white powder at a U.S. port of entry, and tests are conducted to determine if the powder is, as suspected, an illicit drug.

Is it the powerful drug fentanyl, or one of the several known fentanyl analogues being manufactured in overseas drug labs? Or is it heroin laced with fentanyl? Or could it be U-47700, an opioid developed by the Upjohn Company in the 1970s and now produced in foreign labs?

U.S. Customs and Border Protection (CBP) officers work with chemists to test for an array of known illicit drugs, yet the powder does not react to drug screening tests. It appears to be nothing more than white powder.

The agents know, however, that this may be an analogue of a known drug — a new substance created by making a slight change in a molecule of the original drug. It is still a powerful drug, but it does not react to the screening. And, because it is new, it is not on the list of illegal drugs.

But it will kill people, adding to the estimated toll of 72,000 people who die each year from drug overdoses in the United States, of which nearly 30,000 are due to overdoses of fentanyl or a fentanyl analogue.² Because of this seemingly minor alteration, a medical examiner may not be able to detect the drug in a post-mortem examination of an overdose victim and may rule the cause of death as undetermined.

Enter Logan, supported by an NIJ grant and a partnership project funded by the Centers for Disease Control and Prevention (CDC) in cooperation with the U.S. Department of Justice's Organized Crime Drug Enforcement Task Forces (OCDETF) and CBP. The project is trying to identify these novel psychoactive

The current opioid crisis is fueled, in large part, by the enormous supply of illicit drugs that flow into this country on a daily basis.

substances (NPS) as they arrive in the United States and quickly alert drug enforcement agencies, crime laboratories, medical examiners, and health officials — not only in the United States but also worldwide. When officers at a port of entry find a suspicious substance that does not react to basic drug screens and testing protocols, they can now send it to Logan, who uses sophisticated liquid chromatography-high resolution mass spectrometry (LC-HRMS) and nuclear magnetic resonance (NMR) spectroscopy to determine exactly what the substance is and what known drug it is related to.

Logan is also supported by another NIJ grant, awarded through a fiscal year 2017 NIJ Drugs and Crime program solicitation (see sidebar, “Studying the Relationship Between Drugs and Crime”). He is using that award to data mine raw electronic data acquired from liquid chromatography time-of-flight mass spectrometry (LC-TOF-MS) analysis of more than 93,000 suspected drug deaths in which the drugs were not identified, as well as 30,000 suspected cases of drug-impaired driving. By reexamining the data from medical examiners and law enforcement, Logan can engage in “toxicological time travel” in which he uses knowledge developed today about emerging drugs to examine records dating back two years. This allows him to better track drugs as they appear and disappear from the illicit drug supply, he said.

Logan is the chief scientist at NMS Labs and executive director of the Center for Forensic Science Research and Education at the Fredric Rieders Family Foundation, both located in Willow Grove, Pennsylvania. He has a long history of identifying parent drugs and their metabolites (byproducts

produced when a drug is broken down in the body), and has conducted NIJ-supported research to identify designer drugs used by attendees at electronic dance music festivals in Miami and elsewhere. At the Miami festivals, Logan offered \$20 Dunkin’ Donuts cards to those who would provide urine, saliva, and blood samples. In those studies, he found that a wide variety of NPS drugs were being used, that the mix of drugs changed each year, and that many of the attendees misidentified the drug they thought they had taken.³

“In terms of our ultimate objective,” Logan told the experts at the NIST gathering, “we’re really all working on the same thing — improvement in the quality of life and civil society — and both are certainly impacted by the opioid crisis.” Logan noted the difficulty of “rapidly responding to changes in the drug market to help educate first responders, drug use communities, and people at risk of harm.” There is a critical need to educate medical professionals so they can recognize and properly treat a person suffering from a drug overdose — be it fentanyl, an analogue substance, heroin, another new drug, or a combination of drugs, he said.

By analyzing and identifying the seized drugs and biological samples as part of the NIJ grant and his project partnerships, Logan said, he is creating an early warning system — an NPS Data Hub — that enables CDC personnel and federal and state public health and safety entities “to distribute and make that information available and actionable early in the life cycle of a substance.”⁴

The Opioid Crisis

Identifying a new drug and getting the word out quickly is becoming increasingly important, given the overwhelming scale of the problem and the speed with which new drugs are created and shipped into the United States. The CDC estimated that 72,000 drug overdose deaths occurred in 2017 (about 197 people per day); nearly 16,000 of the deaths involved heroin, and more than 29,000 involved synthetic opioids such as fentanyl and fentanyl analogues.⁵

Studying the Relationship Between Drugs and Crime

In 1976, Congress directed NIJ to collaborate with the National Institute on Drug Abuse to explore the relationship between drug use and crime. By 1980, a team of four NIJ-sponsored researchers had compiled and published *Drugs and Crime: A Survey and Analysis of the Literature*.¹ This report summarized existing research on patterns of drug use and criminal behavior and the effects of drug treatment strategies on criminality, setting the stage for NIJ to launch its Drug Use Forecasting (DUF) program in 1987. DUF measured and tracked drug use among arrestees to generate reliable and current information on drug use in relation to the criminal justice system. After a decade of collecting data, NIJ refined and expanded DUF to form the Arrestee Drug Abuse Monitoring (ADAM) program, improving the quality of its annual estimates of drug use prevalence. ADAM was in operation until 2003.² The data from these two NIJ efforts proved foundational for understanding the changing landscape of drug use across regions and over time.

In addition to tracking drug use trends, NIJ has also invested significant resources in original research on how to decrease drug use. NIJ-funded studies in the 1990s showed that drug treatment could be integrated into the criminal justice system to effectively reduce criminality. Building on these findings, NIJ began to evaluate an array of drug treatment modalities for offenders, including drug courts, residential drug treatment corrections programs, intensive probation supervision, and systemwide approaches. NIJ's drugs and crime portfolio over the past decade has focused on crime reduction by studying prevention and intervention strategies for drug-related crimes, tactics for disrupting and dismantling drug markets, and technologies for improved drug detection and recognition.

More recently, NIJ research has focused on the policies, practices, and resources available to law enforcement to deter, investigate, and prosecute opioid use. As part of the U.S. Department of Justice's overall response to the opioid epidemic, NIJ's current priority is to address drug trafficking, markets, and use related to heroin and other opioids such as fentanyl and its analogues.

Notes

1. Robert P. Gandossy, Jay R. Williams, Jo Cohen, and Henrick J. Harwood, *Drugs and Crime: A Survey and Analysis of the Literature*, Washington, DC: U.S. Department of Justice, National Institute of Justice, May 1980, NCJ 159074, <https://www.ncjrs.gov/App/Publications/abstract.aspx?ID=159074>.

2. Although NIJ ended ADAM in 2003, the Office of National Drug Control Policy operated ADAM II from 2007 to 2013. Ten of the original ADAM sites were selected for geographic diversity to address questions regarding methamphetamine trends beyond the Southwest, and instrumentation was modified to add items specific to methamphetamine.

Logan noted that most heroin currently sold on U.S. streets contains some amount of fentanyl or an analogue, and there is no way for a user to know how much is present. Fentanyl has a chemical structure that allows it to pass more easily through the blood-brain barrier; this accounts, in part, for the increasing number of opioid overdoses and deaths.

The current opioid crisis is fueled, in large part, by the enormous supply of illicit drugs that flow into this country on a daily basis. The primary source is laboratories in China where, according to a recent Government Accountability Office (GAO) report, "thousands of pharmaceutical and chemical companies operate, both legally and illegally."⁶ Federal

drug enforcement officials believe the number of Chinese labs producing illicit drugs destined for the United States to be more than 100,000.

The GAO report goes on to note, “Certain Chinese chemical exporters utilize various covert methods to ship drugs to the United States, including sending illicit materials through a chain of forwarding systems, mislabeling narcotic shipments, and modifying chemicals so they are not controlled [listed as illegal] in the United States.”⁷

The drug shipments arrive by both traditional international mail and through express package companies such as FedEx, UPS, and DHL.⁸ In his presentation at the NIST Symposium, Logan noted that about 155,000 packages arrive per night from China at the John F. Kennedy International Airport in New York, with similar numbers inundating mail facilities at other major airports, including O’Hare International Airport in Chicago and Los Angeles International Airport. Only a fraction of the packages contain illicit drugs, but the sheer volume makes it impossible for authorities to completely screen the river of packages.

Beyond shipping fentanyl and its analogues directly into the United States, the GAO report said, Chinese traffickers also send significant amounts of fentanyl products to Mexico and Canada, where the drugs are repackaged and then smuggled into this country. The report did not put numbers on the levels of drugs coming across the northern and southern U.S. borders, saying their illicit nature makes them difficult to quantify.⁹

The financial incentive for drug dealers is clear, according to a 2017 Drug Enforcement Agency assessment: “Traffickers could purchase a kilogram of illicit fentanyl for a few thousand dollars from a Chinese supplier, create counterfeit prescription pills using illicit pill presses, and collect up to \$20 million in revenue.”¹⁰

Early Designer Drugs

The current wave of illicit drugs driving the opioid crisis is the latest and, considering the annual death count, perhaps the most severe drug crisis faced in the United States. But it is not the first illicit drug wave.

“I would characterize the rise of the opioids as another wave in the overall novel psychoactive substances arena that started with synthetic cannabinoids back in 2008, which led to the development of other [drug] analogues in the stimulant class,” Logan said. “That is when the so-called bath salts started to take off.”

Much of the early “designer drug” phase was fueled by chemists in Chinese labs, he said, and those same chemists turned to making fentanyl analogues in response to the growing opioid crisis in the United States. “We generated our opioid crisis in this country through over-prescribing of pain pills, and once we created a demand for potent opioids then the illicit market stepped in and started to fill that demand,” Logan said. “That started in late 2013, early 2014, and then we started to see things other than heroin and fentanyl itself in our post-mortem casework.”

From 1999 to 2011, consumption of hydrocodone (one of the early prescription opioids) nearly doubled, and consumption of oxycodone (a more powerful prescription opioid) increased by nearly 500%, according to researchers writing in the journal *Annual Review of Public Health*.¹¹ The CDC added opioid overdose prevention to its list of the top five public health challenges in 2014 and, in 2015, said that the dramatic increase in opioid use led to “the worst drug overdose epidemic in [U.S.] history.”¹²

Many researchers in the field, including Logan, cite a one-paragraph letter in a 1980 issue of the *New England Journal of Medicine* as triggering what became the opioid crisis. The letter, by a doctor and colleague at the Boston University Medical Center, said that of 11,882 patients who had received at

least one narcotic, there were only four instances of “reasonably well documented addiction” and the addiction was considered major in only one case.¹³

That letter, according to an article in the *2015 Annual Review of Public Health*, was embraced by pharmaceutical companies; by 1995, the American Pain Society had introduced a campaign titled “Pain as the Fifth Vital Sign,” and doctors were urged to use opioids more aggressively to treat chronic pain.¹⁴

“What that did was create the demand for opiates,” Logan said, “and once you’ve got a large population of people who are hooked or habituated or dependent on opioids, and you take away the legal substances because they were being overprescribed, then people turned to the illicit substances as a replacement. That’s what fueled the market and created the opportunity for some enterprising person to start making synthetic opioids, the fentanyl analogues.”

Another notable influence in the creation of the NPS movement was a 1991 book by American chemist Alexander Shulgin titled *PIHKAL: A Chemical Love Story*. Although the book was not about opioids, it was “both a recipe book in terms of how to make psychoactive substances, as well as detailing what doses to take and what kind of effects to expect,” Logan said. “So when that book was published, it opened people’s eyes to the possibility of making psychoactive substances beyond what was routinely available at the time: cocaine, methamphetamine, and heroin.”

A Real-Time Warning System

As the use of fentanyl and its analogues increased, the primary tool being used in forensic toxicological casework — the gas chromatography mass spectrometer — was inadequate for identifying the new drugs. “When you have to take a brand-new substance that you’ve never seen before and pull it apart into its chemical components and identify both its chemical composition and structure . . . well, most forensic toxicology laboratories didn’t have the tools because they’d never had to do that before,” Logan said.

As Logan was developing the skills and resources at his private lab to identify the emerging drugs, Assistant U.S. Attorney M.J. Menendez was assigned to work with the OCDETF. In 2014, she was the “heroin coordinator” for the office, but the drug world changed so quickly that she now describes herself as the “fentanyl, heroin, and opioid coordinator.” Early in her work with the OCDETF, she realized that border agents and homeland security investigators were seeing more and more white powder that did not react to drug screening tests.

“With much of the arriving novel psychoactive substances, law enforcement officials just weren’t able to identify what it was,” she said. “The challenges [of] resourcing and conducting the complex testing to identify the novel substances was resulting in delays. We were taking anywhere from three months to a year or longer to analyze a substance, and that was proving to be a law enforcement impediment.”

Menendez realized that the lack of identification was a significant public health impediment as well as a law enforcement issue. “If the medical examiners don’t know that it’s a drug they are looking for, they can’t find it,” she said. “So we started working with the labs for Customs and Border Protection, and they faced the same problem as most forensic labs in that they were not able to quickly identify the rapidly emerging NPS drugs, including the fentanyl analogues.”

As she traveled to meetings with medical examiners and others on the front line of the drug wars, Menendez met Logan and saw his presentation on toxicological time travel. As he described retroactive data mining and talked about looking back to identify patterns of drug emergence and distribution, she realized that drug agencies needed to look forward in the fight against novel fentanyl analogues.

As Menendez met with medical examiners, coroners, and other experts, she repeatedly heard that Logan’s research was creating a road map for understanding the opioid and other NPS epidemics in both toxicology and analyses of seized drugs. So Menendez called Logan and said, “You know, I know we’ve talked about toxicology, but I’ve got this issue”

Spreading the Word on Novel Drugs

When forensic toxicologist Barry Logan identifies a new illicit drug at his laboratory in Willow Grove, Pennsylvania, he alerts virtually everyone involved in the battle against the wave of opioids flooding the United States. The information is posted on his NPS Discovery website and through a comprehensive email tree. Logan, executive director of the Center for Forensic Science Research and Education and chief scientist at NMS labs, set up the website about a year ago and has already posted detailed descriptions of more than 45 previously unidentified illicit drugs known collectively as novel psychoactive substances (NPS).

The system is optimized to effectively transmit the drug information to public health officials, emergency room doctors, toxicologists, state health offices, and local treatment communities, as well as federal, state, and local law enforcement agencies. “The goal of this was to put our arms around it and give it a name,” Logan said of the website, which is, in part, supported by NIJ.¹

The new drugs are discovered using three methods: testing of unidentified substances seized by law enforcement; toxicological data mining of electronic data from tens of thousands of suspected drug deaths in which drugs were not initially identified; and sample mining of biological fluids for traces of illicit drugs.

Logan said the website is being upgraded to make it more comprehensive; the upgraded version will include monographs for new substances and more “trend reports” on drug distribution and use patterns in the United States. The site will also be made more interactive in the near future, he said.

Note

1. NIJ provided critical funding in support of the NPS Discovery website through three of its fiscal year 2017 award programs: Research and Evaluation on Drugs and Crime; Research and Development in Forensic Science for Criminal Justice Purposes; and the Graduate Research Fellowship Program in Science, Technology, Engineering and Mathematics. For more information on the individual grant awards, go to NIJ.ojp.gov, keywords: 2017-DN-BX-0169, 2017-R2-CX-0021, and 2017-R2-CX-0002.

Her issue was the overwhelming volume of seized drugs flowing into the United States through ports of entry, particularly drugs that could not be identified. And, beyond just identifying the new drugs, information about them had to be disseminated as quickly as possible to emergency room doctors, medical examiners and coroners, and law enforcement.

Menendez and Logan began working together on the OCDETF's ports-of-entry project to rapidly identify as

many of the seized, but unknown, drugs as possible. Critical to the project is disseminating the information about a new drug as soon as Logan identifies it.

Once Logan identifies a new fentanyl analogue or other new drug, he posts the identified drug, along with all of the relevant technical analytical data, on his Novel Psychoactive Substances Discovery website (see sidebar, “Spreading the Word on Novel Drugs”).¹⁵ He also disseminates the information to thousands of authorities worldwide, he said. Speed is critical.

“In the typical research cycle, if you’re funded to do a project, you set it up, you get your data, and at the end of a year or two years, you write up a report and it gets published,” he said. “By that time in the cycle of these novel psychoactive substances drugs, that is ancient history.”

Because the market changes and turns over so fast, he said, notification of a new drug has to happen very quickly. “We do that by working with the Department of Justice, and every time we get a new substance, that notification goes out to literally tens of thousands of people around the world.”

Information about the new drug “goes out in real time to people who can actually use it in the investigations of their case work,” he said. “When you think about putting research into action and being able to do that in real time — within a matter of a few weeks of the discovery of a new compound — that’s the value of this project.”

Logan said he is very aware that only a fraction of the illicit drugs being sent into the United States are being seized, “but you do anything that can be done to disrupt that supply chain.” A kilo of fentanyl that gets seized at a port of entry is 250,000 doses that never make it onto the street, he said. He concluded, “Everything that does get taken out of the supply makes a difference.”

About the Author

Jim Dawson is a forensic science writer and contractor with Leidos.

Notes

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3. A.L.A. Mohr, J.K. Yeakel, M. Friscia, and B.K. Logan, “Recreational Drug Use Trends and Emerging Analytes Identified in Blood, Urine, and/or Oral Fluid from Attendees at an Electronic Dance Music Festival,” poster presentation at the American Association of Forensic Sciences annual conference, 2015.
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6. U.S. Government Accountability Office, *Illicit Opioids: While Greater Attention Given to Combating Synthetic Opioids, Agencies Need to Better Assess their Efforts*, GAO-18-205, March 2018, 10, <https://www.gao.gov/assets/700/690972.pdf>.
7. *Ibid.*, 10-11.
8. *Ibid.*, 11.
9. *Ibid.*, 11-12.
10. *Ibid.*, 12.
11. Andrew Kolodny et al., “The Prescription Opioid and Heroin Crisis: A Public Health Approach to an Epidemic of Addiction,” *Annual Review of Public Health* 36 (2015): 560, doi:10.1146/annurev-publhealth-031914-122957.
12. *Ibid.*
13. Jane Porter and Hershel Jick, “Addiction Rare in Patients Treated with Narcotics,” *New England Journal of Medicine* 302 (1980): 123, doi:10.1056/NEJM198001103020221 (cited in Kolodny et al., “The Prescription Opioid and Heroin Crisis,” reference 62).
14. Kolodny et al., “The Prescription Opioid and Heroin Crisis,” 562.
15. The Center for Forensic Science Research and Education, “Novel Psychoactive Substances,” NPS Discovery web page, “Novel Psychoactive Substances Discovery” page, <https://www.forensicscienceeducation.org/resources/nps-discovery>.

NCJ 252731



EMPLOYING RESEARCH TO UNDERSTAND VIOLENCE AGAINST WOMEN

BY **RIANNA P. STARHEIM**

Fifty years ago, violence against women, and domestic violence in particular, was not considered a criminal justice concern in this country. It was largely viewed as a personal matter, best dealt with privately within families.

With a sweeping reinvestment in criminal justice reform in the 1960s, the women's movement of the 1960s and 1970s, and efforts in the late 1980s and 1990s that led to passage of the Violence Against Women Act in 1994, violence against women entered the public consciousness in the United States. It began to be recognized as a serious public health and public safety problem that warranted criminal justice system intervention.

Over the past 50 years, NIJ has established and expanded a strong program that addresses violence against women. Its portfolio has funded more than \$130 million in research on intimate partner violence, sexual violence, stalking, teen dating violence, and other related topics. NIJ-funded initiatives have also helped finance the testing of previously unsubmitted sexual assault kits and establish best practices in testing these kits.

Kristina Rose, a former NIJ acting director who worked on violence against women issues throughout her 19 years with the U.S. Department of Justice, summed up NIJ's influence: "When it comes to violence against women, NIJ has been brave and pioneering across the spectrum of issues to help people understand what we know about violence against women, including what the criminal justice response should look like."

Minneapolis Domestic Violence Experiment

In the wake of national attention surrounding violence against women in the 1970s and early 1980s, NIJ funded a randomized controlled trial experiment in Minneapolis that examined various law enforcement responses to domestic violence.¹ In 1984, the results of the Minneapolis Domestic Violence Experiment indicated that spending a night in jail significantly reduced the risk that a perpetrator would commit a future act of domestic violence. As a result, many police departments across the country implemented pro-arrest or mandatory arrest policies in domestic violence situations.

“When it comes to violence against women, NIJ has been brave and pioneering across the spectrum of issues to help people understand what we know about violence against women, including what the criminal justice response should look like.”

Given the findings and the implications for law enforcement, NIJ funded six replication studies, beginning in 1986. These studies showed contradictory results, which underscored the importance of replicating research studies. Replication ensures that results are valid, reliable, and generalizable.

Although replications found mixed results, the Minneapolis Domestic Violence Experiment marked a significant change in how law enforcement approached intimate partner violence.

“This was the first time there was a shift in how the criminal justice system thought about and responded to domestic violence,” says Angela Moore, senior science advisor and social scientist at NIJ.

Nearly 40 years later, the Minneapolis Domestic Violence Experiment is still frequently cited as a pivotal study.

The Violence Against Women Act

The Violence Against Women Act (VAWA) of 1994 was landmark legislation that created legal protections for victims of domestic and sexual violence and established funding streams for responding to these crimes. Filling critical resource gaps in every state, VAWA grant programs support law enforcement agencies, prosecutors’ offices, courts, domestic

violence shelters, and rape crisis centers in serving victims and holding offenders accountable. VAWA also expanded the scope and scale of U.S. research on violence against women and led to a significant expansion of NIJ’s major research and evaluation efforts in the field.

“VAWA was an impetus,” says Moore. “We did some work on violence against women before the Act, but the funding NIJ received as a result of VAWA helped us spring forward and gave rise to the program we have today.”

VAWA was reauthorized in 2000, 2005, and 2013, and separate legislation in 2002 established the Office on Violence Against Women (OVW), a Department of Justice agency responsible for leading the implementation of VAWA grant programs.

“Thanks to funding administered by OVW, communities have developed coordinated responses to crimes of violence against women,” says Katharine Sullivan, former acting director of OVW and current principal deputy assistant attorney general of the Office of Justice Programs. “Justice system professionals, victim services providers, and other community partners have used these grants to work together to ensure that victims get the help they need and that dangerous perpetrators are stopped from committing more crimes. These coordinated community responses have transformed how domestic violence is treated in the criminal and civil justice systems and sparked innovative prevention efforts like Maryland’s Lethality Assessment Program to reduce domestic violence homicides.”

In 1998, NIJ began receiving designated VAWA funds for research on violence against women. Funding allocations varied by year — ranging from \$7 million in 1998 to \$1.88 million in 2008 and 2009 — with a current allocation of \$3 million to \$5 million each fiscal year. This steady stream of funds from OVW has helped NIJ study the nature and scope of violence against women and the effectiveness of strategies for combating these crimes. Knowledge generated through NIJ’s Violence Against Women program informs efforts within the Department of Justice and

in communities across the nation to protect victims and bring offenders to justice.

Collecting Representative Data

Despite the considerable number of studies on violence against women that were conducted in the 1980s and 1990s, there remained a critical need to understand the magnitude and nature of intimate partner violence, sexual violence, and stalking in a way that would provide accurate and reliable data. Surveys that frame questions within the context of crime do not necessarily provide representative data on respondents' experiences with violence against women, in part because people do not always self-identify as victims of crime.

To address this research gap, in 2000 NIJ partnered with the Centers for Disease Control and Prevention (CDC) on the National Violence Against Women Survey (NVAWS).² The survey revealed that more than half of the surveyed women reported being physically assaulted at some point in their lives, and nearly two-thirds of women who reported being raped, physically assaulted, or stalked were victimized by intimate partners.

For two reasons, this survey has been consistently cited as a more reliable representation of rates of violence against women than surveys that frame victimization within the context of crime. First, NVAWS did not rely solely on reported offenses because the vast majority of crimes go unreported. Second, the survey was designed to ask detailed, behavior-specific questions about respondents' victimization experiences. By asking questions that avoid legal terms (for example, "rape") and instead asking about a perpetrator's specific behaviors (for example, "slapped," "pushed," and "shoved"), the survey avoided attributing blame or labeling respondents as victims.

NVAWS was one of many NIJ-CDC collaborations to address violence against women. As a result, NIJ was able to bring a public health perspective to its work, alongside its inherent focus on public safety. NIJ again collaborated with the CDC, as well as the U.S.

Department of Defense Family Advocacy Program, to develop the National Intimate Partner and Sexual Violence Survey (NISVS); the first survey report was produced in 2011.³ The CDC continues to administer NISVS to capture data about violence against women and men, and the survey has become one of the most frequently cited data sets in the National Archive of Criminal Justice Data.

Research After VAWA

VAWA mandated that the Department of Justice work in partnership with the National Academy of Sciences (NAS) to develop a research agenda for violence against women. The 1996 NAS report *Understanding Violence Against Women* was instrumental in shaping the direction of NIJ's violence against women research portfolio. Subsequent NAS reports, along with strategic planning workshops and other input, have also informed program goals and direction.

Intimate Partner Violence

Through grants, cooperative agreements, and contracts supported by VAWA funding, NIJ has supported more than 200 studies on intimate partner violence — accounting for nearly half of the agency's total funding allocations for violence against women research since 1993. Over this period, rates of intimate partner homicides have dropped nearly 30% as public awareness of intimate partner violence and policy responses have grown.⁴ In 2016, NIJ hosted a meeting with prominent researchers and criminal justice practitioners to inform the Institute's research agenda moving forward.

NIJ-funded studies on intimate partner violence have focused on definition and measurement, victims and perpetrators, impacts on children, contexts and consequences, civil and criminal justice interventions, and processes used to respond to these crimes. This research has found links between intimate partner violence and early parenthood, severe poverty, and unemployment and has shown that understanding the demographic differences among victims and abusers helps predict which interventions will be successful in specific groups.

Violence Against Women in Special Populations

Violence against women is a multifaceted issue that affects populations on many levels. NIJ's broad name for its violence against women program — the Violence Against Women and Family Violence Research and Evaluation Program⁵ — helped make it possible for NIJ to fund research on a wide range of topics related to violence against women, including trauma and the impact on children exposed to violence. This work also gave rise to a focus on teen dating violence and the maltreatment of elderly adults.

“There’s a lot of research that talks about the intergenerational aspects of violence against women,” says Moore. “It’s important to study these other facets of violence because they can have a tremendous impact within families, communities, and society as a whole.”

Building on a long history of research in the area of intimate partner violence, NIJ's teen dating violence research portfolio grew out of a recognition that the field needed to explore how to prevent dating violence in populations younger than adults. NIJ has funded nearly three dozen studies on teen dating violence since the portfolio was established in 2005. NIJ also sponsored an interagency working group on teen dating violence in 2006.⁶

VAWA reauthorizations in 2005 and 2013 called for NIJ, in consultation with OVC, to conduct analyses and research on violence against American Indian and Alaska Native women in Indian Country. NIJ focused subsequent research on dating violence, domestic violence, sexual assault, sex trafficking, stalking, and murder in these communities. NIJ-funded research also evaluated the effectiveness of federal, state, tribal, and local responses to violence against American Indian and Alaska Native women. As part of the NIJ-CDC partnership, NIJ funded an oversampling of American Indian and Alaska Native women and men in 2010. The data revealed that four out of five American Indian and Alaska Native women in the United States have experienced violence in their lifetimes, and that these women find it much more difficult than other populations to access victim services.⁷

NIJ has funded dozens of additional studies to examine violence against women in specific populations, including disabled, elderly, and homeless persons; recipients of welfare; immigrants; incarcerated individuals; and various racial, cultural, and ethnic groups.

Sexual Violence

NIJ supported its first sexual violence research project in 1973, but the agency's research on sexual violence dramatically expanded in the 1990s after the passage of VAWA. The first solicitation that focused exclusively on sexual violence was issued in 2002, when NIJ-funded research provided the first comprehensive national look at rape and sexual assault on college campuses.

NIJ has also done groundbreaking work to assist in the processing of sexual assault evidence nationally. In 2011, NIJ funded action-research projects in Houston, Texas, and Wayne County, Michigan, to help understand the nature and scope of untested sexual assault kits and to identify effective, sustainable, victim-centric responses to sexual assault. Additionally, through an NIJ-FBI partnership, the FBI laboratory in Quantico, Virginia, tested thousands of previously untested sexual assault kits from across the country, and NIJ convened the NIJ Sexual Assault Forensic Evidence Reporting (SAFER) working group. Information gleaned from these efforts contributed to the creation of the publication *National Best Practices for Sexual Assault Kits: A Multidisciplinary Approach*, which NIJ released in 2017.⁸

NIJ is also evaluating the Bureau of Justice Assistance's Sexual Assault Kit Initiative (SAKI). The action-research projects in Houston, Wayne County, and other jurisdictions helped inform and establish the multidisciplinary nature of SAKI and underscored the need for collaboration between multiple components of the criminal justice system on sexual assault kit testing.

Stalking

NIJ's preliminary research in this area examined the stalking of members of Congress and celebrities in

the 1980s. In 1993, NIJ was directed to develop a model anti-stalking code. NIJ has funded five projects on stalking, but this remains the least funded research topic in NIJ's violence against women program, in part because of the difficulty of measuring and capturing reliable data on the subject.

Disseminating Results

NIJ-funded researchers have published scholarly articles related to violence against women in more than 50 different journals. The *NIJ Journal* has been an additional platform to disseminate research results, and a special issue of the *Violence Against Women* journal in 2013 highlighted NIJ's programs.⁹ NIJ's *Compendium of Research on Violence Against Women* spans nearly 300 pages and includes summary information on all research related to violence against women from 1993 to the present, with links to study reports and manuscripts.¹⁰

NIJ releases an annual solicitation and has more than 50 active research projects on violence against women.

"All of NIJ's work aims to respond to the needs and questions of the criminal justice field," says Moore. "NIJ has funded work that has transformed the evidence base around what we know in regard to violence against women. We have come a long way since the Minneapolis Domestic Violence Experiment and the early days of our violence against women work. What hasn't changed over the past 50 years is our commitment to funding research to better understand violence against women and how best to combat it moving forward."

About the Author

Rianna P. Starheim is a writer and former contractor with Leidos.

Notes

1. In this article, the terms "domestic violence" and "intimate partner violence" can be considered synonyms. NIJ now uses the more inclusive term "intimate partner violence," which does not imply that this violence occurs exclusively within a domestic setting.
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3. "The National Intimate Partner and Sexual Violence Survey (NISVS)," Centers for Disease Control and Prevention, updated September 19, 2018, <https://www.cdc.gov/violenceprevention/nisvs/index.html>.
4. See nij.ojp.gov, keyword: intimate partner violence interventions.
5. See nij.ojp.gov, keyword: violence against women and family violence program.
6. For more information on the NIJ teen dating violence research portfolio, see nij.ojp.gov, keyword: teen dating violence.
7. André B. Rosay, *Violence Against American Indian and Alaska Native Women and Men: 2010 Findings From the National Intimate Partner and Sexual Violence Survey*, Washington, DC: U.S. Department of Justice, National Institute of Justice, May 2016, NCJ 249736, <https://www.ncjrs.gov/pdffiles1/nij/249736.pdf>.
8. National Institute of Justice, *National Best Practices for Sexual Assault Kits: A Multidisciplinary Approach*, Washington, DC: U.S. Department of Justice, National Institute of Justice, 2017, NCJ 250384, <https://www.ncjrs.gov/pdffiles1/nij/250384.pdf>.
9. Bernard Auchter, ed., "The Violence Against Women Research and Evaluation Program at the National Institute of Justice," special issue, *Violence Against Women* 19 no. 6 (2013).
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NCJ 252730



MAKING SCHOOLS SAFE FOR STUDENTS

BY BLAIR AMES

High-profile school shootings, like the one at Marjory Stoneman Douglas High School in Parkland, Florida, have raised concerns that schools can be dangerous places for students. Yet, the data suggest that school crime rates have dropped nationwide since the early 1990s and that the student victimization rate declined by 70% from 1992 to 2013 (see exhibit 1).¹

To the general public, though, thoughts on school safety are often shaped by high-profile school shootings and other tragic incidents that dominate a news cycle. For educators, however, issues such as bullying, harassment, and school discipline policies are at the forefront of their thoughts and can affect school safety on a daily basis.

“It is very important that we continue working to understand and prevent mass shooter events,” said Phelan Wyrick, director of the Research and Evaluation Division within NIJ’s Office of Research, Evaluation, and Technology. “However, we cannot allow the saliency of mass shooter events to overshadow the importance of a wide range of more common safety issues that schools face.”

Shootings are just one of many traumatic events that children may face at school. They may also be threatened or injured by a weapon, be bullied, be physically assaulted, or be affected by natural disasters.

In support of stakeholder efforts to ensure that students are safe in school, NIJ has funded numerous initiatives over the years that evaluate school safety practices. These efforts range from how to prevent tragic incidents like school shootings to how to promote a positive school environment where day-to-day challenges, like bullying and harassment, can be reduced.

Historical School Safety Efforts

Although federal programs and policies related to school safety can be traced to the early 1970s, the United States did not begin collecting national data on school violence until 1989,² when the School Crime Supplement was added to the National Crime Victimization Survey. The School Crime Supplement was conducted for a second time in 1995 and then became a biannual survey starting in 1999.

Over the next few years, NIJ's Comprehensive School Safety Initiative will bring a wealth of knowledge on the effectiveness of school safety practices.

A series of school shootings in the late 1990s, including the one that occurred at Columbine High School, led to new programs that examined the thinking, planning, and other pre-attack behaviors of school shooters (see sidebar, "Mass Shooting Research"). One such program was the Safe School Initiative led by the U.S. Department of Education and U.S. Secret Service.

As part of this initiative, NIJ supported a 2002 study that explored the behavior of student-attackers in an effort to identify information that could help communities prevent future attacks.³ The study evaluated 37 incidents of targeted school violence in the United States between December 1974 and May 2000. It found that these 37 attacks were rarely sudden or impulsive. In 95% of the cases, the attacker had developed the idea to harm before the attack.

Perhaps most importantly, the study found that 93% of the evaluated attackers behaved in a way that caused others to be concerned or that indicated a need for help. In fact, in more than 75% of the cases examined, the attacker had told a friend, schoolmate, or sibling about the idea before taking action. But the person who was told about the attack rarely brought the information to an adult's attention.

"That's the critical element if we're going to prevent, reduce, or head off these types of incidents from occurring," Wyrick said. "We need to have mechanisms in place, school cultures amenable to folks reporting that information."

The study also showed that there was no accurate profile of a school shooter. The shooters came from a variety of racial and ethnic backgrounds and ranged in age from 11 to 21 years old. Some came from intact families with ties to the community and others came from foster homes with histories of neglect. The academic performance of attackers ranged from excellent to failing.

Evaluating School Safety Technology

School security measures have increased since the Columbine shooting. Today, nearly 100% of schools serving 12- to 18-year-olds use at least one safety or security measure.⁴ This includes locked doors, security cameras, hallway supervision, controlled building access, metal detectors, and locker checks. However, use of these measures varies by factors such as the school's population and location.

NIJ has long supported studies on school safety technology, including one by Sandia National Laboratories. Released in 1999, *The Appropriate and Effective Use of Security Technologies in U.S. Schools* covered the effectiveness of a variety of school safety technologies. The report also provided basic guidelines for law enforcement agencies and school administrators as they decide which security technologies should be considered when developing safe school strategies. It helped schools and law enforcement partners analyze their vulnerability to violence, theft, and vandalism and suggested possible technologies to address these problems effectively.

Overall, the report stated that security technologies are not the answer to all school security problems. No two schools will have identical and successful security programs, meaning that a security solution for one school cannot just be replicated at other schools with complete success. However, many pieces of technology can be excellent tools if applied appropriately.

More recently, NIJ has supported other school safety technology evaluations through the Comprehensive

Mass Shooting Research

Mass murder and shooting sprees are tragic and traumatizing events. When they occur in school settings with child victims, they are particularly shocking.

NIJ-supported research seeks to improve our understanding of mass shooters and mass shooting incidents to inform efforts to prevent and deter future attacks. Ongoing projects supported by NIJ include the creation of a mass shooter database with events dating back to 1966, a study on the pathways and trajectories of school shooting perpetrators, and an examination of the short- and long-term impact that school shootings have on communities.

School Safety Initiative (CSSI). This initiative includes a report from the Library of Congress outlining federal school safety efforts between 1990 and 2016, and two complementary projects by the RAND Corporation and Johns Hopkins University that assess current school technology and outline school needs.

These CSSI reviews of school safety technology shared a major conclusion: No one technology, school climate intervention, or other school safety strategy can guarantee school security or eliminate the underlying cause of school violence. An integrated approach that includes emergency response plans, drills, a positive school climate, and situational awareness is called for, and school security plans must be tailored to the needs of each individual school.

Comprehensive School Safety Initiative

Safety and security technology is just one tool in a comprehensive program that each school should develop to create a safe learning environment for students and staff. NIJ's CSSI aims to make clear that there is no one solution to ensuring that students are safe in school.

Developed following the tragedy at Sandy Hook Elementary School in 2012, CSSI is one of NIJ's latest and largest investments in school safety research. Projects funded through CSSI examine different factors at the individual, school, community, and family levels that affect school safety.

A unique program of research for NIJ, CSSI provided funding for both implementation and evaluation as well as research projects that examine root causes. Under a directive from Congress, NIJ allocated approximately \$75 million per year between fiscal years 2014 and 2017. Two-thirds of that funding went toward implementing school safety projects, and one-third went toward studying the impact of each program and the causes and consequences of school-related violence. Some CSSI projects have concluded and some are ongoing. They have covered or aim to address a wide range of school safety subjects, including school resource officer training, assessments of social media threats, bullying prevention, and positive behavioral interventions, among other topics.

This initiative will compile a large amount of information over a very short period of time, but the next few years will bring a wealth of knowledge on the effectiveness of school safety practices.

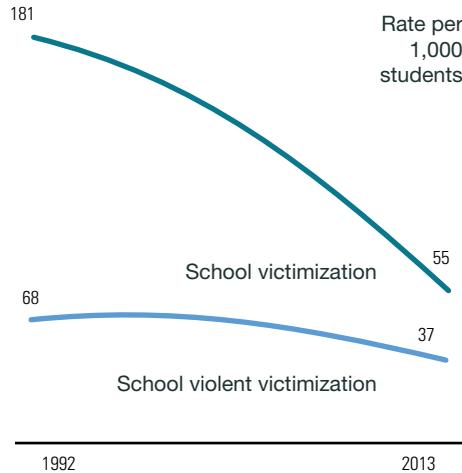
"We're trying to move the field further and more quickly with so much information in such a short period of time," said Mary Poulin Carlton, an NIJ social science analyst.

Through CSSI, NIJ has funded 96 studies with a focus on K-12 schools. These grant-funded projects are taking place in more than 30 states and more than 2,700 schools. The initial projects are still in the final stage, so it is too soon to assess the impact of the initiative. It may take six to seven years, if not longer,

Exhibit 1. School Safety: By the Numbers

School crime rates are decreasing.

Nationally, school crime rates have decreased since the early 1990s. Though violent crime against students increased from 2010 to 2013, the student victimization rate declined 70% between 1992 and 2013.



School shootings are rare.

Today's students are less likely to be threatened or injured with a weapon at school, including a gun, than they were 10 years ago. Since 1992, the percentage of youth homicides occurring at school has remained at less than 3% of the total number of youth homicides.



2003 9% **2013 7%**

Students ages 12-18 threatened or injured with a weapon on school property



41
(31 students, 10 other)

School-associated homicides (July 1, 2012-June 30, 2013)

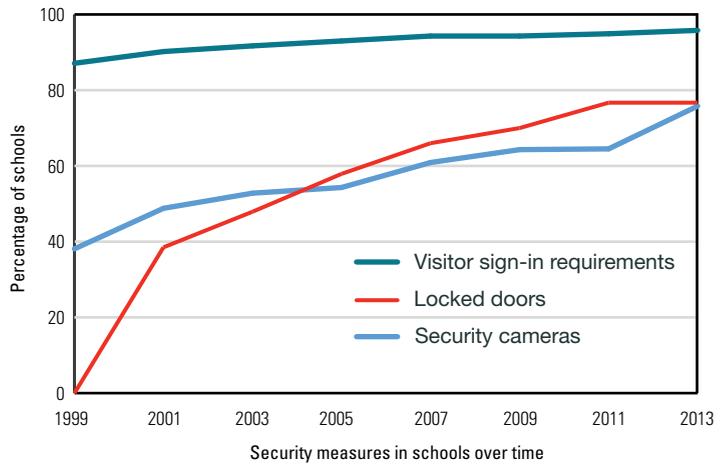


1992 <3% **PRESENT <3%**

Youth homicides occurring at school

Officials are more concerned about shootings today.

Nearly 100% of schools serving 12- to 18-year-olds use at least one safety or security measure.



Source: Anlan Zhang, Lauren Musu-Gillette, and Barbara A. Oudekerk, *Indicators of School Crime and Safety: 2015*, Washington, DC: U.S. Department of Education, National Center for Education Statistics, and U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics, May 2016, NCES 2016-079/NCJ 249758, <https://nces.ed.gov/pubs2016/2016079.pdf>.

Read more of "School Safety: By the Numbers" at NIJ.ojp.gov, keyword: school crime.

for the projects to reach their conclusions and for the results to be disseminated. Even after the last set of findings is published, taking that body of work and synthesizing it for the field may require another year or so of work, said Nadine Frederique, an NIJ senior social science analyst.

Moving Forward

School shootings are frightening and make headlines. However, today's students are less likely to be threatened or injured with a weapon at school, including a gun, than they were 10 years ago.

But educators and public safety officials continue to grapple with the challenge of creating and maintaining a safe and healthy learning environment for students. Threats to schools and student safety continue from both inside and outside the school and from adults and other individuals, including students.

NIJ has sponsored numerous studies on the issues of school safety and school climate over the past 25 years and continues to support efforts to improve the safety of students in school. The outcomes of CSSI-funded research will provide valuable context for school officials in the coming years. The 96 projects funded through this effort examine a variety of school safety issues and offer an opportunity for educators, the community, and law enforcement to better understand the factors that most affect school safety.

About the Author

Blair Ames is a digital journalist and contractor with Leidos.

Notes

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 2. Mary Poulin Carlton, *Summary of School Safety Statistics*, Comprehensive School Safety Initiative Report, Washington, DC: U.S. Department of Justice, National Institute of Justice, July 2017, NCJ 250610, <https://www.ncjrs.gov/pdffiles1/nij/250610.pdf>.
 3. Robert Fein et al., *Threat Assessment in Schools: A Guide to Managing Threatening Situations and to Creating Safe School Climates*, Washington, DC: U.S. Department of Education, Office of Elementary and Secondary Education, Safe and Drug-Free Schools Program, and U.S. Secret Service, National Threat Assessment Center, July 2004, <https://www2.ed.gov/admins/lead/safety/threatassessmentguide.pdf>.
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NCJ 252729



SEARCHING FOR THE MISSING IN A CITY OF MILLIONS

BY **JIM DAWSON**

U.S. Department of Justice efforts to improve the investigation of missing and unidentified persons began with a push by NIJ in 2003 to maximize the use of DNA technology in analyzing such cases. NIJ expanded its efforts in 2005 with the Identifying Missing Persons Summit, and in 2007 it launched the “unidentified persons” database. In 2008, the “missing persons” database was created. Those databases were connected in 2009, creating the National Missing and Unidentified Persons System, or NamUs. NamUs has resolved more than 17,000 missing persons incidents and nearly 3,706 unidentified persons cases.

In 1972 a young man from New York, just 20 years old, left home and vanished. For 42 years his sister, haunted by his disappearance, searched for clues and followed leads as she tried to find out what had happened to her brother — all to no avail.

Then, in 2014 she saw a Facebook posting for the First Annual New York City Missing Persons Day, sponsored by the New York City Office of Chief Medical Examiner (OCME). Organized by OCME's missing persons unit, the event was being held in response to the overwhelming and ongoing problem of missing persons in New York City, where the resident population of 8.5 million swells to 10 million during the workday. There were more than 13,500 missing persons reports in the city in 2014 — typical of most years — and although most were resolved quickly, about 100 remained open. People who were suddenly gone, often with frantic and despairing relatives left behind.

On the hope that she might finally find her brother, the woman arrived at a modern glass building near the East River in Manhattan that houses OCME's sophisticated DNA laboratory. She joined 80 other people in the building's lobby — people from around the world — who were sitting under a large sign that read “Science Serving Justice,” waiting to be interviewed by staff members of the medical examiner's office. They were foreign, domestic, from all social strata, all with one thing in common — a missing loved one.

Most important, they waited to provide DNA samples that could be analyzed and entered into NamUs, the National Missing and Unidentified Persons System established by NIJ to help find the more than 600,000 people who go missing in the United States every year. Although most of those cases are resolved quickly without involving NamUs, hundreds of new unresolved cases are entered into the system annually. In addition

The problem of missing persons in New York City is significant. There were more than 13,500 missing persons reports in the city in 2014 — typical of most years — and although most were resolved quickly, about 100 remained open.

to NamUs, the DNA samples taken at the OCME event were entered into the FBI's CODIS software — the Combined DNA Index System — to determine if any of those samples could be linked to one of the tens of thousands of missing persons' profiles in the FBI's National DNA Index System (NDIS).

The inside of the woman's cheek was swabbed, her DNA was processed, and the results were uploaded to NDIS. Several weeks later there was a "hit" and, in the understated language of the medical examiner's office, she was told that "a strong kinship match" was found with unidentified male remains. Tragic as it was, her long search was over. Her brother had been dead since 1973, his body discovered that year in nearby New Jersey. Fortunately, his DNA had been uploaded into CODIS in 2010, thanks to an NIJ grant that allowed New Jersey authorities to try to put names to some of the unidentified bodies they held.

Despite the grim nature of the case, the medical examiner officials who created Missing Persons Day considered it a success. The woman's decades-long quest to find her brother was over.

Two other cases were also resolved that day. First, a brother and sister submitted DNA that led to the identification of the skeletal remains of their father, whose body had been discovered on Long Island in 2003. Second, two sisters provided DNA samples that were matched to an unidentified individual who had

also been found on Long Island — the body of their missing brother.

Despite the success of the 2014 event, OCME did not have the funds to conduct another Missing Persons Day in 2015. An NIJ grant allowed the event to resume in 2016, and further grants have allowed it to continue. And more people have been identified.

Although Missing Persons Day is perhaps the most visible community activity that NIJ supports at OCME, the sheer size and sophistication of the New York office makes it one of the largest recipients of a wide range of NIJ funding, with nearly 50 grants going to the medical examiner's office since 2006. Although some funds are designated for training, education, fellowships, and reducing sexual assault kit backlogs, some funding supports science-related research, especially in the area of DNA (see sidebar, "Helping Labs Increase Capacity and Reduce Backlogs").

Identifying the Missing

The missing persons unit in New York City, one of only a handful of such units nationally that is located within a medical examiner's office, is perhaps the most scientifically advanced in the United States. This is largely because of the experience its staff gained from the September 11 attacks on the World Trade Center (WTC) that killed 2,753 people. OCME scientists perfected the process of generating DNA profiles from the more than 22,000 human remains that came from the WTC, most of them just "bits of bones," said Mark Desire, OCME's assistant director who oversees the missing persons work. "We applied the lessons learned from that to our everyday missing persons cases." Of the thousands of WTC human remains recovered, about 35% remain unidentified.

Chief medical examiner Dr. Barbara Sampson, a cardiovascular pathologist who also holds a doctorate in molecular biology, credits the progressive science of the entire OCME to Dr. Charles Hirsch, her predecessor, who set the standards high as he pushed the office to become a leading forensic research center. Hirsch recognized early on that "DNA was going to be the future of forensics and we had

Helping Labs Increase Capacity and Reduce Backlogs

Throughout the 1980s and 1990s, DNA analysis gained widespread acceptance among forensic and legal practitioners. Since then, the criminal justice system has come to rely on DNA analysis as a critical tool for generating new leads, closing cases, and correcting errors. As more and more DNA samples are sent to the nation's crime laboratories each year, however, the backlog of unprocessed samples continues to grow. Laboratories continually improve their processing speed and efficiency, with help from NIJ research and development funding. Despite increased capacity, backlogs nevertheless remain a persistent issue because demand for DNA analysis is growing too quickly for capacity to keep pace.

NIJ leads the federal government's efforts to address the needs of the forensic science community. Since 2004, the cornerstone of NIJ's response to the DNA evidence backlog has been the DNA Capacity Enhancement and Backlog Reduction (CEBR) program. The CEBR program has awarded more than 2,000 grants totaling almost \$1 billion to support forensic DNA processing and analysis in the nation's crime laboratories. CEBR grantees have used NIJ's support to complete more than 860,000 cases, upload more than 376,000 forensic profiles to the FBI's Combined DNA Index System (CODIS), and produce more than 192,000 CODIS hits.

to be at the forefront of that," Sampson said. Under Hirsch, she continued, "We weren't satisfied with just doing the job. We always wanted to do the job better and faster, using the most cutting-edge technology." (See sidebar, "Faces in Clay.")

Sampson said the problem of missing persons in New York City is significantly worse than in smaller jurisdictions. "People come here from all over the world and their families don't even know they're here," she said. Although the number of identifications resulting from Missing Persons Day is small, "it is so heartwarming to see these families. We give them a lot of services. The Red Cross is here, along with other organizations that help them through this."

Sampson said the DNA work, which often involves degraded or fragmentary samples, is "very slow and tedious." Despite the nature of the work, she said, the skill and technology at the lab are so advanced that "we can get DNA out of a stone."

The broader work involving missing persons started in earnest in 2008. It was supported by the first NIJ grant to OCME's forensic biology division (see sidebar, "Using DNA Technology To Identify the Missing").

OCME used procedures that came, in part, from that grant to attack the backlog of cases from the 1980s and 1990s, including the 1,200 unidentified bodies buried in the city cemetery on Hart Island, known as Potter's Field.

DNA Kits

In 2009, funded by another NIJ grant, Desire's office developed a missing persons kit that is similar to the commercial ancestry DNA kits popular today. "We developed the kit, which is something that we can mail out to a family that's missing a loved one," he said. The kits include two swabs, sterile gloves, and packaging for returning the swabs to OCME in a postage-paid envelope.

In addition to sending the kits to people in and around New York City, they have been sent to law enforcement agencies in New York state and overseas, particularly to Mexico. Desire said, "We'll have a family in Mexico whose son came here to New York City and they haven't heard from him. We've got [unidentified] bodies in the morgue, and in Potter's Field, and one of them might be him, so we can collect DNA from the family by sending out the kit."

Faces in Clay

Bradley Adams stands in a room where human skeletal remains are laid out on tables, sculpted clay heads of crime victims line shelves high on the walls, and a few odd skulls and bones are scattered on sideboards. As macabre as this room appears, it is the office Adams works in every day as the director of forensic anthropology at the New York City Office of Chief Medical Examiner.

The cases in the room — be they the heads looking down on Adams or the worn bones on the tables — are all unidentified people. Many of them died violently, as evidenced by injuries to their skulls, and some just turned up dead, the cause unclear.

What they all have in common is that neither the medical examiner's office nor the police know who they are. Crime scene investigations have been completed, DNA has been taken and submitted to the FBI database, missing persons reports have been studied, but nothing to identify the individuals has been found.

So it falls to Adams and Joe Mullins, a private forensic sculptor, to give faces, and perhaps identities, back to the dead. Adams scans the skulls with a laser and then creates replicas using a sophisticated 3D printer purchased with an NIJ grant. Mullins, who for years has created age progression drawings of missing children for the National Center for Missing & Exploited Children, takes the replica skulls to the New York Academy of Art in lower Manhattan. There, students enrolled in the forensic sculpting workshop spend a week laboring over the skulls in an effort to give them back their faces.

Mullins comes to New York once a year to conduct the workshop at the art academy with the 3D-scanned skulls provided by Adams. As the five-day workshop begins, Mullins admonishes the students with a fundamental rule: No artistic license.

The class begins with Mullins giving each student the replica skull of an unidentified person. There is a system to constructing a face from a skull that requires an understanding of the relationships between bone structure, muscles, and soft tissue. The shape of the nasal opening is also important, as are the orbits around the eyes.

Usually it is Wednesday afternoon, the third day of the workshop, when the eyes are in place and enough clay has been sculpted that the faces begin to emerge. The class gets very quiet. "It's hard to articulate," Mullins says, "but by Wednesday afternoon the students understand the scope of what they are working on, and they've gotten a face. It's no longer just some abstract sculpture. They see that face staring back at them, and it's dead quiet."

A connection inevitably forms as the skull turns into a person and the students realize that what started out as an interesting facial reconstruction project has become personal. The faces stare back at you, Mullins says, and you understand that you are, in a sense, resurrecting a person, revealing a lost identity.

The results of four years of the forensic sculpting workshop are the heads that line the walls in Adams' office. Images of the heads are uploaded into NamUs, the National Missing and Unidentified Persons System, with the hope that one of the faces will look familiar to someone and trigger a phone call.

“We want the face to be in the ballpark,” Mullins says. “That’s where you want to be with these sculptures because there is ambiguity in there. You can’t stray far off the path of what the skull is telling you about the features, but things like hairstyle and facial hair get lost.”

Although the goal is to get the face right, he says, given the ambiguity, “almost is good enough.”

What is critical to remember, both Adams and Mullins note, is that these were real people, mostly the victims of violent crimes, who have lost not only their lives but also their identities. Ultimately, this isn’t about the art of sculpture, it’s about respecting the deceased, finding identities, solving cases, and reuniting loved ones with their families.

As many of the clay faces sculpted in past classes look down at him, Adams turns to the skeletal remains on the tables and explains the graphic stories of the bones. “She was found in a park and had been buried under some leaves and garbage,” he says of what is left of a smaller skeleton of a woman. On an adjacent table is another set of bones. “This case right here was found in a wooded area and had been wrapped up in a carpet,” he says.

He nods toward a third skeleton. “This guy had been shot in the head and had been out there for years.” Next to the shooting victim was a dismemberment case, a skeleton that had been found in pieces. Investigators found the head in a trash bag in a community garden in Brooklyn, while the torso was found at a recycling plant.

“We were able to take the lower-most vertebra that was associated with the head and the upper-most vertebra associated with the torso and fit them together,” he says. “You can see those cut marks — where the head was cut off — you can see those cut marks on both vertebrae.”

He does not know who this person was, but he knows he was male and, based on the “growth zones” in the bones, he can get a good estimate of age. “See how that is bumpy right there,” he says, pointing to the end of a collarbone. “The cap on the collarbone doesn’t happen until your mid-20s, and here it is totally missing, so he’s probably under 25.” He points to a small gap in another bone. “That’s where part of this bone hasn’t fully fused, so that’s more looking like late teenage years. Based on all of his indicators, I bet he’s 18 or 19 years old.”

Other violence was done to the man, all to prevent identification, Adams says. Even if DNA is recovered from the remains, if it doesn’t get a “hit” in the FBI CODIS database — the Combined DNA Index System — the remains, like dozens of others that come through Adams’ office each year, will be unidentified. And the investigation into the murder will go nowhere because the police do not know who the victim is.

Mullins says he and his students have completed the reconstructions of the unidentified skeletal remains in Adams’ office and now the forensic workshop is looking for replica skulls from other jurisdictions. “I want to spread the word [to other medical examiners’ offices] that if you have the skulls of unidentified people, we can get them scanned and work with them,” he says. “Don’t let them just sit there collecting dust. I mean, that’s somebody’s mom, cousin, uncle, aunt, and their family is frozen in uncertainty.”

Using DNA Technology To Identify the Missing

From 2008 to 2015, NIJ made 32 awards through the program “Using DNA Technology To Identify the Missing,” for a total of more than \$23 million. The program was, in part, a response to findings from the Bureau of Justice Statistics, which reported in 2004 that approximately 1,000 cases of unidentified human decedents go unsolved every year.¹ In January 2007, the *NIJ Journal* called attention to the magnitude of this crisis in the United States with an article titled “Missing Persons and Unidentified Remains: The Nation’s Silent Mass Disaster.”² Among NIJ’s efforts to address the increasing number of unidentified persons cases, the use of DNA technology stands out because advances in the past decade have allowed investigators to successfully extract DNA profiles from evidence that had yielded inconclusive results under earlier methods of analysis.

Notes

1. Matthew J. Hickman, Kristen A. Hughes, Kevin J. Strom, and Jeri D. Roper-Miller, *Medical Examiners and Coroners’ Offices, 2004*, Special Report, Washington, DC: U.S. Department of Justice, Bureau of Justice Statistics, June 2007, NCJ 216756, <https://www.bjs.gov/content/pub/pdf/meco04.pdf>.

2. Nancy Ritter, “Missing Persons and Unidentified Remains: The Nation’s Silent Mass Disaster,” *NIJ Journal* 256, January 2007, <https://nij.gov/journals/256/pages/missing-persons.aspx>.

The kits containing DNA samples are returned in the mail, he said, “and we get them every week.” The office follows up on the kits sent in by the families with phone calls and has a system to keep track of all of the kits. “It’s been a wonderful help,” Desire said.

One of the issues encountered when trying to obtain DNA samples from families who have a missing relative is that some families do not trust law enforcement and are afraid to come forward. The realization that many people in New York City were afraid to report a missing relative was part of the reason Missing Persons Day was created, Desire said. When OCME announced the first event in 2014, the office was overwhelmed with requests for interviews from the media. “It was amazing because New York City is the media capital and everybody wanted to come and talk to us. I think there were probably 50 television interviews.”

The objective of those interviews, he said, was that “we could say we’d be having this event every year

where families could go to the medical examiner at the Department of Health.”

Desire feared that families would come in expecting his staff to identify their missing loved one on the spot. As DNA analysis typically takes weeks or months, “I didn’t want them leaving disappointed,” he said. “So we brought in all of the relevant nonprofits, the spiritual care people, and the emotional and mental health specialists. They were all in the building, gave out plenty of information, and made contacts with the families.”

The event allowed families of the missing to meet with other families in the same situation. For the first time, they were talking to each other and to OCME staff, Desire said. “So now we get calls on a weekly basis from other families asking, ‘When is your next Missing Persons Day? I want to come in and give a DNA sample.’”¹

Although NIJ funding allowed the event to resume in 2016, because of the DNA kits the families do not have to wait for the next event, Desire said. If someone calls in, “we’ll mail them out a kit that day,” he said. “And we’ve made identifications based on that.”

Because of the success of Missing Persons Day, members of his unit are regularly invited to events held throughout New York. Some of those events are designed to help families obtain medical services, enroll their children in public schools, or find jobs. The event organizers have realized that some of the families may have missing relatives, “so we are invited and we have tables set up,” Desire said.

At some of the events, the participants spoke only Spanish or other languages that Desire’s science staff could not speak. So he turned to NIJ for another grant that allowed him to hire bilingual DNA scientists. “We now have two,” he said. “One from Mexico and one from the Dominican Republic. I studied Spanish in school for four years, but a Spanish-speaking family is going to trust me a lot more if I have my scientist from Mexico with me. Just immediately, the warmth and the trust that those scientists have [with the Spanish-speaking community] is exactly what I envisioned and they are who we send out to these events,” he said.

Although OCME runs Missing Persons Day independent from law enforcement, the New York Police Department (NYPD) and other law enforcement agencies work closely with the medical examiner’s office. “On Missing Persons Day, we have the NYPD with us because if, God forbid, we have a case where a woman comes in and says, ‘My husband has been missing for a year and I think he was murdered,’ we can do something about it,” Desire said. “We can say ‘law enforcement is here for you’ and get them involved.”

Most of the cases, like the woman whose brother disappeared in 1972, are straightforward missing persons cases. Regardless of the circumstances, Desire said, “our job is to identify your loved one.”



The missing persons DNA collection kit is typically sent to families to determine if they are linked to any unidentified individuals in the medical examiner’s database.

About the Author

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Note

1. NamUs participates in Missing Persons Days held around the country, including in Alabama, Arizona, Arkansas, California, Colorado, Florida, Illinois, Kentucky, Maryland, Michigan, Missouri, Nevada, New Jersey, New York, Ohio, Oklahoma, Pennsylvania, Texas, Virginia, and Washington. In 2018, NIJ staff attended 20 separate Missing Persons Day events in 15 states.

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POLICE



CONDUCTED ENERGY DEVICES: POLICIES ON USE EVOLVE TO REFLECT RESEARCH AND FIELD DEPLOYMENT EXPERIENCE

BY PAUL A. HASKINS

Better knowledge of the use and effects of conducted energy devices (CEDs) and developments in constitutional law have prompted law enforcement in the past decade to revisit policies on the widely used “less-lethal weapon” that stuns and usually immobilizes subjects to make it easier for law enforcement officers to subdue them.

Evolving jurisprudence regarding excessive force as well as research insights on CED impacts, especially when improperly deployed, have steered many agencies away from reliance on the “stun gun” to control fleeing or resisting subjects — once commonplace authorized uses. Increasingly, law enforcement rules are proscribing CED use absent an immediate threat of physical harm to an officer or others.

Even with more circumscribed permissible use, however, law enforcement has embraced CEDs as a uniquely effective tool for handling certain problematic subjects without resorting to other use-of-force options. Over the past two decades, more than 15,000 agencies have adopted the use of CEDs.¹

Still, since their introduction, CEDs have been a magnet for controversy, given the extreme if momentary pain and loss of muscle control they impart, the sometimes indistinct line between justified and improper uses of the device, and the rare but real possibility of death after CED exposure. As noted in a 2010 NIJ research report on police use of force with an emphasis on CED use outcomes, “The use of force is among the most controversial of all police activities.”²

Notwithstanding close scrutiny from medical researchers and defendants’ rights groups, science has yet to yield conclusive evidence that CEDs — when used properly — cause any lasting cognitive, physiological, or physical damage to individuals in nonvulnerable categories. Further, the same in-depth 2010 NIJ-sponsored research found that, compared with the use-of-force alternatives available to law enforcement in similar scenarios, CEDs resulted in fewer instances of injury and lethality for both the subjects and the officers.³

Although proponents of CEDs have emphasized a reduced incidence of injury and death, critics have

A common refrain in NIJ-sponsored research on CED effects has been that more research is needed to fully grasp the elusive and complex impact of a CED's electrical insult.

spotlighted serious harm or fatalities from CEDs in certain cases. Research has revealed that improper use of a CED — for instance, too many activations of the device, prolonged exposure, or use on the chest, thus risking heart abnormalities — can cause significant injury or be a factor in those statistically rare occasions when death follows CED exposure.⁴

Deployment and Misuse Concerns

As the popularity of CEDs among law enforcement grew, so did concern about how the electrical weapons were being deployed. In 2006, a report from the Police Executive Research Forum (PERF) and the U.S. Department of Justice (DOJ) noted widespread uncertainty among law enforcement leaders on the appropriate role of CEDs, due largely to inadequate knowledge of the nature of CED technology and its effects on targeted subjects, resulting in uneven standards and parameters for use across departments.⁵

“As more and more conducted energy devices ... were deployed across the United States, their use sparked considerable confusion,” the report’s authors observed. The research team also found, “Policy issues emerged on a plethora of concerns ranging from placement [of CEDs] on the force continuum to activation parameters on at-risk populations such as children, the elderly, persons under the influence of drugs, and pregnant women.”

The PERF-DOJ study pointed to an acute absence of data for guiding CED use: “The dearth of available information on how CEDs worked and how they were

used in daily police work had hampered the ability of police executives to make informed policy decisions about the devices.” The PERF-DOJ initiative produced the first set of standardized CED guidelines for law enforcement agencies to consider.

By 2010, when the use of CEDs as a physical control tactic was still widely accepted, the problem of misuse was manifest. In the police use-of-force study sponsored by NIJ, researchers said that although CED use to establish physical control “may be beneficial in many cases, their ease of use and popularity among officers ... raise the specter of overuse.” A leading authority on police use of force who contributed to that study, Geoffrey P. Alpert, later elaborated on observed CED misuse in a 2012 NIJ.ojp.gov interview, referencing the study findings:⁶

I think, again, that it's a great tool. How do you use it properly? Well, you use it when nothing else is going to work. You use it obviously as an alternative to deadly force, but even to fend off a threat of active aggression, and I think that becomes a very important tool ... but officers have to understand that when you use this tool, people will fall down, people will injure themselves, and it's got to be used against a limited number of people in a limited number of circumstances And our research showed that it was used too often. And I think that's a training and a supervision and, again, an accountability issue.

Alpert also said that the 2010 NIJ-supported research had shown there were “officers out there who go to their Taser⁷ far too early in an encounter and far too often.”

Federal Courts Weigh In

As the 2000s progressed, a number of federal courts sounded warnings on the intense nature of the blow CEDs deliver, declaring that CEDs are built to cause “excruciating pain”; the CED is a “per se dangerous weapon at common law”; it inflicts “a painful and frightening blow”; it causes “severe pain”; and “the

physiological effects, the high levels of pain, and foreseeable risk of physical injury lead us to conclude that the [Taser model] X26 and similar devices are a greater intrusion than other non-lethal methods of force we have confronted.”⁸

Consistent with emerging awareness of the danger of CED misuse, federal courts began moving toward a stricter constitutional standard for CED use, clarifying that a subject’s mere physical resistance or failure to comply physically with police commands did not warrant being shocked by a CED. For example, in 2010 the U.S. Court of Appeals for the Seventh Circuit ruled that a plaintiff’s refusal to release his arms for handcuffing did not justify police use of a CED, where the subject was unarmed and there was little risk that he could access a weapon.⁹ Similarly, a 2011 decision by the Ninth Circuit held that police used excessive force in deploying a CED against a pregnant woman who actively resisted arrest but posed no immediate threat to the officers.¹⁰

This trend culminated in the Fourth Circuit’s 2016 decision in *Armstrong v. Pinehurst*,¹¹ which drew a line in the sand against police use of a CED for “pain control,” that is, using CED-induced pain to physically control a subject, as opposed to CED use to protect an officer or third party from an immediate threat of harm. *Armstrong* effectively banned CED use by law enforcement absent immediate danger to officers or others.

The Fourth Circuit, whose appellate decisions are binding federal law in North Carolina, South Carolina, Maryland, Virginia, and West Virginia, held in *Armstrong* that “Taser use is unreasonable force in response to resistance that does not raise a risk of immediate danger.”¹² Even when the subject was unrestrained and physically resisting law enforcement, the Fourth Circuit held that use of a CED would be excessive absent a safety threat to police or others: “A rule limiting Taser use to situations involving a proportional safety threat does not countenance use in situations where an unrestrained arrestee, though resistant, presents no serious safety threat.”¹³

The Fourth Circuit also raised the bar among federal courts at the time with its sharp assessment of the CED’s inherent danger, declaring that CEDs impart not only pain but also injury. The court deemed a CED’s impact “severe and injurious regardless of the mode to which the Taser is set.”¹⁴

The 2016 *Armstrong* decision also proscribed CED use on a fleeing subject, again absent an immediate danger posed to others. In contrast, an NIJ-supported pre-2010 survey of more than 500 law enforcement agencies found that almost three-fourths of the agencies using CEDs allowed their use against fleeing subjects.¹⁵

The U.S. Supreme Court declined to hear an appeal of the *Armstrong* decision.

Policy and Use After *Armstrong*

The *Armstrong* decision’s restrictive impact on CED-use policy countered preexisting guidance from researchers urging that both CEDs and “pepper spray” (oleoresin capsicum, or OC; see sidebar, “Pepper Spray: Research Insights on Effects and Effectiveness Have Curbed Its Appeal”) “should be authorized as possible response alternatives to defensive forms of suspect resistance such as muscle tensing, struggling to escape physical control, and fleeing on foot.”¹⁶ (It should be noted that 2011 CED-use guidelines issued jointly by the Department of Justice’s Office of Community Oriented Policing Services and PERF called for limits on the use of CEDs against fleeing subjects.)¹⁷

For law enforcement agencies within the Fourth Circuit’s five-state jurisdictional reach, the *Armstrong* opinion mandated immediate revision of existing CED policies that allowed police to use stun guns on subjects who were fleeing or even physically resisting police but posed no immediate danger to officers or others.

The decision had an immediate and dramatic impact on CED use. As part of its series chronicling the toll of excessive CED use nationally, the news agency

Pepper Spray: Research Insights on Effects and Effectiveness Have Curbed Its Appeal

Conducted energy devices (CEDs) were the second technology to expand law enforcement's "less-lethal weapon" repertoire over the past quarter century. The first technology was pepper spray, or oleoresin capsicum (OC), an organic extract of the cayenne pepper plant that can stop most subjects cold — by temporarily blinding them, creating a burning sensation in the eyes and skin, and often affecting breathing.

By the early 1990s, OC was spreading quickly as a preferred use-of-force option for many agencies and officers.¹ As of 2013, an estimated 94% of all police departments had authorized the use of pepper spray, including 100% of all forces in jurisdictions with populations of 500,000 or more.² Yet its actual use by law enforcement would wane over time with the surge in popularity of CEDs among officers. As noted in a 2008 NIJ report, by then the CED had already "become the less lethal weapon of choice for a growing number of law enforcement agencies."³

Several factors help account for the more constrained deployment of pepper spray as a standard policing tool today, including:

- A more advanced understanding of pepper spray's effects on subjects and officers.
- A belief that pepper spray is less reliable than a CED activation, with a real risk that the spray will contact the officer, other officers, or bystanders, exposing them to the same symptoms as the subject. Research also has shown that OC is generally less effective than CEDs in subduing subjects.
- Court decisions since 2000 making it clear that overuse or improper use of pepper spray can constitute excessive force in violation of the subject's constitutional rights.

Development of Science on OC Safety and Effectiveness

A March 1994 report of NIJ's Technology Assessment program observed that at the time, OC was "gaining acceptance and popularity among law enforcement officers and police agencies as a safe and effective method of incapacitating violent or threatening subjects." The report emphasized, however, that there was "a lack of objective data on OC, its risks, and its benefits."⁴

With NIJ's support in ensuing years, data on OC inhalation by experimental subjects were gathered and analyzed. Sponsored by NIJ and the Office of Community Oriented Policing Services, a research team at the University of California–San Diego found no evidence that, when inhaled by volunteer subjects, OC "resulted in any additional change in respiratory function in the restraint position."⁵ The resulting 2001 report, however, had two important caveats: (1) Because the study was motivated in part by concern over reports that a number of arrestees exposed to OC in custody had experienced breathing-related deaths, the research focused on the effects of inhaled OC on respiration, and not on its ocular or vision effects when sprayed in a subject's eyes — subjects wore goggles. (2) The study measured only the effects of OC sprayed for one second, as recommended by the manufacturer.

The "safe and effective" guidance was reinforced two years later. A 2003 NIJ Research for Practice report, *Effectiveness and Safety of Pepper Spray*, discussed outcomes of two NIJ-supported research studies that examined (1) both officer and subject injuries in three North Carolina jurisdictions and

(2) 63 incidents nationwide in which suspects were sprayed with OC while being arrested and later died in custody. The report noted that the North Carolina research found that injuries to officers and suspects declined after pepper spray was introduced, and the second study determined that pepper spray contributed to only two of the 63 deaths and that both of those deaths were asthma-related. The report concluded, “The results of all studies in this Research for Practice seem to confirm that pepper spray is a reasonably safe and effective tool for law enforcement officers when confronting uncooperative or combative subjects.”⁶

Over time, however, concerns over pepper spray’s negative effects would emerge. The comprehensive 2010 multimethod evaluation of use of force, prepared for NIJ, examined law enforcement’s experience with OC spray in multiple jurisdictions and noted the following anomaly: Although OC application was associated with a decrease in subject injuries compared with injuries from other use-of-force options, OC was found to significantly increase officers’ injury risk: “For officers, the use of OC spray increased the probability of injury by 21 to 39 percent (depending on the model). This finding was unexpected and suggests that cases involving the use of OC spray differ from those involving CEDs in ways that were not accounted for in the models.”⁷

Separate research on 10 years of pepper spray injuries, as reported to the national poison control system, also noted disproportionate injuries among officers. Research by a University of California–San Francisco team, published in 2014, concluded that although there was a “low 1 in 15 potential risk for more severe adverse health effects in persons exposed to pepper spray that warranted a medical evaluation . . . the risk was highest when used for training law enforcement personnel and involved severe ocular symptoms.”⁸

The ascendancy of CEDs over OC was bolstered by evidence that CEDs were significantly more effective than pepper spray in subduing subjects. A 2017 report of research on the effectiveness of CEDs relative to OC observed, “The overall effectiveness of Tasers in this study is striking. In the overwhelming proportion of incidents where a Taser was used, once a Taser was used that incident came to an end. The same cannot be said with OC spray.”⁹ The research, a single-site study of a large police department — more than 2,000 sworn officers — examined supervisor reports of use-of-force incidents and assessed the use and effectiveness of OC spray and CEDs.

Limited OC effectiveness and concerns over its safety for officers help account for the decline in popularity of pepper spray as a standard policing tool, culminating in a decision by some departments to no longer issue OC. As the *Tampa Bay Times* reported in October 2016, by that time four sheriffs’ offices in Florida had stopped issuing OC.¹⁰ Pinellas County Sheriff Bob Gualtieri, explaining his decision to drop OC, told the newspaper that his 1,500 sworn deputies rarely used it and many no longer carried it — pepper spray was deployed only 15 times in the county in 2015. “The feedback from the bottom up was that it was no problem to get rid of it,” Gualtieri reportedly said. “It’s probably a tool . . . that has had its day.”

Courts Have Restricted Permissible Use of OC

Courts have stepped in when pepper spray use is deemed objectively unreasonable. An often-cited representative case is the Ninth Circuit Court of Appeals’ 2002 decision in *Headwaters Forest Defense*

(continued on next page)

v. County of Humboldt,¹¹ in which environmental protestors used a “black bear” metal device to lock themselves together but offered no physical resistance when law enforcement attempted to remove them. It was alleged that the officers repeatedly used pepper spray against the protestors, spraying full bursts from inches away and applying OC directly to the eyes of some protestors with Q-tips, while refusing for a long period to provide water for the protestors to wash off the OC to relieve their pain.

The court noted the following facts: (1) the use of pepper spray was unnecessary to subdue, remove, or arrest the protestors; (2) the officers could safely and quickly remove the protestors, while in “black bears,” from protest sites; and (3) the officers could safely remove the “black bears” in a matter of minutes with electric grinders. The court held that “it would be clear to a reasonable officer that it was excessive to use pepper spray against the non-violent protestors under these circumstances.” Upon finding that excessive force was used, the court held that the officers were not entitled to partial immunity from liability as public officials.

Notes

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10. Tony Marrero, “Pepper Spray Falls From Favor as Law Enforcement Turns to Taser,” *Tampa Bay Times*, October 2, 2016.
11. 276 F.3d 1125 (9th Cir. 2002).

Reuters reported that after the *Armstrong* decision, CED use dropped precipitously in 2016 in major cities within the Fourth Circuit, as follows:¹⁸

Norfolk, VA: 95% decline
 Virginia Beach, VA: 65% decline
 Greensboro, NC: 60% decline
 Charleston, SC: 55% decline
 Huntington, WV: 52% decline
 Baltimore, MD: 47% decline

Other courts have since adopted the bright-line rule that only a need to protect police or others from a present threat — and not mere desire to control the subject — can justify CED use. For example, in 2017, the Ninth Circuit, holding that an individual subjected to multiple CED applications when already subdued by police could go forward with an excessive-force civil action, explained that “any reasonable officer should have known that such use can only be justified by an immediate or significant risk of serious injury or death to the officers or public.”¹⁹

The Use-of-Force Continuum

The *Armstrong* decision and related CED jurisprudence stand as a firm reminder that every agency should regularly reassess its use-of-force continuum. The continuum is a guidance tool depicting the authorized escalation of force techniques by law enforcement officers as warranted by circumstances. A typical progression, adopted as department policy, would be police presence, verbal instruction, verbal command, “soft hand” physical force, “hard hand” physical force (such as pushing), chemical weapon (such as pepper spray), impact weapons (such as batons), and lethal weapons.

Like law enforcement standards generally, the use-of-force continuum can vary by community. Brett Chapman, an NIJ social scientist and police use-of-force authority, explained that individual departments “try to find standards that are appropriate for their community. You have to consider the relationship between the police and the community.” In some cities, Chapman explained, law enforcement leadership placed CEDs right below guns on the

force continuum — only to be used in serious confrontations. In other communities, CEDs have been used more liberally, based on the belief that CEDs are a mid-level use-of-force tool.

Those localized determinations of where CEDs lie on the use-of-force continuum are also constrained by court precedent. A 2013 Seventh Circuit opinion, for example, relied on earlier circuit authority for the position that a CED “falls somewhere in the middle of the nonlethal-force spectrum” and “does not constitute as much force as so-called impact weapons, such as baton launchers and beanbag projectiles.”²⁰ In contrast, the Fourth Circuit in *Armstrong* made it clear that the court saw CEDs as closer to the lethal-force end of the spectrum. The court relied, in part, on a Ninth Circuit opinion finding that the Taser X26 and similar devices “are a greater intrusion than other non-lethal methods of force we have confronted.”²¹

Understanding the Effects of CEDs

Heightened caution about the effects and possible risks of CEDs has been reflected in recent news coverage. The Reuters series on negative CED impacts nationally, published in 2017, found from a review of records — including rulings by medical examiners — that 1,005 people in the United States had died after encounters with law enforcement officers who used CEDs. In 153 of those cases, coroners or medical examiners cited the CED as a cause or contributing factor in the death. Regarding issues of liability, the news service found 442 CED-related lawsuits. Settlements and judgments from these lawsuits totaled \$172 million nationwide — a conservative estimate, according to Reuters.²²

Thinking in the medical research field has evolved regarding the importance of medical monitoring of CED effects on subjects. In 2008, an NIJ special report on deaths following shocks by CEDs concluded, “Medical evaluation is not mandatory after all CED exposures,” noting exceptions where medical care would be indicated.²³ By 2011, however, a medical panel convened by NIJ to study CED safety was advising that “regardless of how long the CED

exposure lasts, some form of medical screening and ongoing observation of individuals exposed to CEDs is crucial. Screening should start at the scene and individuals should continue to be monitored in custody for abnormal physical and behavioral changes.²⁴

That recommendation foreshadowed the American Medical Association's 2014 call for standard medical and mental health assessments after CED exposures. (As early as 2006, the initial CED policy guidelines proposed by PERF and DOJ urged that "all persons who have been exposed to a CED activation should receive a medical evaluation."²⁵ A 2011 refinement of those guidelines stated that medical responders should provide the evaluation in the field or at a medical facility.²⁶)

A common refrain in NIJ-sponsored research on CED effects has been that more research is needed to fully grasp the elusive and complex impact of a CED's electrical insult. As a 2015 NIJ-supported study of cognitive functioning following CED exposure stated, in finding that CEDs cause fleeting deficits in neuropsychological functioning, "Our findings show that the effects of Taser exposure on brain functioning are not well understood. ... Findings indicate that additional research is needed to understand the effects of Taser exposure on brain functioning."²⁷ That study revealed a number of cognitive impacts from CED exposure, but no effects were observed more than one hour after exposure.²⁸

Results indicate that Taser exposure causes statistically significant reductions in one measure of verbal learning and memory (HVL), as well as several subjective state self-measures (concentration difficulty, feeling overwhelmed). The effects lasted less than 1 hour and were limited to the HVL test.

Even with wider knowledge of CED risks and the narrowing of scenarios when their use is permitted, CEDs remain a favored less-lethal weapon option for law enforcement — one that, overall, spares injuries to officers and subjects.

In the end, the effectiveness and safety of CEDs are a function of the quality of training received by

officers on the street. As leading police-use-of-force researcher Geoffrey P. Alpert told the *Chicago Tribune*, "If it's not really good training, you're going to end up with not really good practices."²⁹

About the Author

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Notes

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3. *Ibid.*, 8-2 to 8-5.
4. After surveying the research, an NIJ-sponsored medical panel on CED safety recommended that law enforcement "apply CEDs for no longer than 15 seconds at a time and to limit the number of discharges to the fewest needed to control the suspect"; the medical panel also noted that "most deaths associated with CED use involved multiple or prolonged discharges." Brian Higgins, "Final Findings From the Expert Panel on the Safety of Conducted Energy Devices," *NIJ Journal* 268, October 2011, NCJ 235888, <https://www.nij.gov/journals/268/pages/ceds.aspx>; Douglas P. Zipes, "TASER Electronic Control Devices Can Cause Cardiac Arrest in Humans," *Circulation* 129 no. 1 (January 7, 2014), doi:10.1161/circulationaha.113.005504. Others have drawn attention to the October 2009 Taser International training bulletin warning that the device should not be aimed at the chest due to risks to heart function. Jack Ryan, "TASER™: The Target Zone, Policy and Training," Indianapolis, IN: Public Agency Training Council, 2009.
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6. Interview of Geoffrey P. Alpert, University of South Carolina, Department of Criminology and Criminal Justice, March 12, 2012, "Use of Force and Conducted Energy Devices," video transcript, <https://nij.ncjrs.gov/multimedia/video-aperl.htm>.

7. Taser technology is so ubiquitous that the name has become synonymous with CED.
8. *Armstrong v. Pinehurst*, No. 15-1191, 810 F.3d 892, 902 (4th Cir. 2016) (collecting cases). The 2016 federal appellate court opinion in *Armstrong v. Pinehurst* gathered that language from other federal court decisions.
9. *Cyrus v. Town of Mukwonago*, 624 F.3d 856, 863 (7th Cir. 2010).
10. *Mattos v. Agarano*, 661 F.3d 433 (9th Cir. 2011).
11. 810 F.3d 892 (4th Cir. 2016).
12. *Ibid.*, 905.
13. *Ibid.*, 904.
14. *Ibid.*, 913, endnote 8.
15. Smith et al., "A Multi-Method Evaluation," 3-20.
16. *Ibid.*, 8-5.
17. Guideline 26 stated, "Fleeing should not be the sole justification for using an ECW [electronic control weapon] against a subject. Personnel should consider the severity of the offense, the subject's threat level to others, and the risk of severe injury to the subject before deciding to use an ECW on a fleeing subject." Police Executive Research Forum [PERF] and U.S. Department of Justice [DOJ], Office of Community Oriented Policing Services [COPS], *2011 Electronic Control Weapon Guidelines*, Washington, DC: PERF and DOJ COPS, March 2011, 20.
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CRIME VICTIM AWARENESS AND ASSISTANCE THROUGH THE DECADES

BY STACY LEE

In its 1967 landmark report *The Challenge of Crime in a Free Society*, the President's Commission on Law Enforcement and Administration of Justice asserted that one of the most neglected subjects in the study of crime was its victims.¹

"The single biggest factor affecting society's recognition of crime victims was *The Challenge of Crime in a Free Society*," said Barry Ruback, a Penn State University criminology and sociology professor who has a special interest in criminal victimization. "It was this report that indicated how little was known about crime victims. This recognition led to the creation of victimization surveys, which then revealed that the extent of unreported crime was so much greater than anyone had realized."

"During the early 1970s, the status of crime victims occupied a position wherein there was little agreement within the system as to the importance of such a group and about whom little was known," recalled the Rev. Robert Denton, director of the Victim Assistance Program in Akron, Ohio, at a March 1980 NIJ Special National Workshop.²

That began to change in 1974, when the U.S. Department of Justice's Office of Justice Programs (OJP) set its focus on how to meet the needs of crime victims. NIJ-funded research by Frank J. Cannavale³ had recently shown that the main reason for unsuccessful prosecutions was that witnesses and victims of crime were not being treated well by the criminal justice system and, therefore, were not cooperating in prosecutions.⁴ Donald E. Santarelli, the director of OJP at the time, responded by allocating funding to victim-witness programs.

In the same year, NIJ launched a new initiative to fund research that analyzed the needs and problems of crime victims.⁵ This initiative has flourished over the past 50 years, as NIJ has continued to play an integral role in performing and funding research on issues critical to victim recovery and evaluating victim services.

"Since its founding, NIJ has been committed to supporting important research on crime victims," said Thomas Feucht, former senior science advisor at NIJ. "For example, in the 1970s NIJ conducted

Over the years, NIJ has taken stock of the current state of the field of victimization to develop and enhance a research agenda with a focus on victim services research, victimization of special populations, and system responses to victimization.

foundational research to assess state victim compensation programs,⁶ and in the 1990s NIJ supported a pivotal research program to calculate the total costs of crime to victims and communities.”⁷

Feucht added, “NIJ’s commitment to research on issues regarding crime victimization continues today. Throughout the agency’s history, research like this has been essential to understanding victimization and to developing effective strategies to aid victims in their return to wellness and wholeness.”

“The fair administration of justice aspect of NIJ’s mission includes our responsiveness to victims of crime,” said Christine Crossland, a senior social science analyst at NIJ. “Over the years, NIJ has taken stock of the current state of the field of victimization in order to develop and enhance a research agenda with a particular focus on victim services research, victimization of special populations, and system responses to victimization. Most recently, NIJ has moved toward funding more rigorous research and evaluation designs to build solid evidence around programs that are working in responding to victims.”

Early Victim and Witness Programs

In 1974, OJP provided a grant to the National District Attorneys Association to create the first victim and witness programs in Milwaukee, Wisconsin, and

Brooklyn, New York.⁸ OJP also provided funding to establish model programs to assist victims in seven other district attorneys’ offices throughout the United States, with the intention of increasing witness cooperation.

In the same year, law enforcement agencies — with funding from OJP — also began providing victim support services.⁹ Police departments in Fort Lauderdale, Florida, and Indianapolis, Indiana, were the first to offer programs to aid crime victims. As more law enforcement agencies provided victim assistance, the programs began to vary in regard to which services were provided and who could apply. Early victim assistance included help applying for state victim compensation¹⁰ and federal Supplemental Security Income, updates on court proceedings and restitution, 24-hour referral to social services, transportation to court and social service agencies, and translation for Spanish-speaking clients.

The first national agency to assist victims, the National Organization for Victim Assistance, was created in 1975.¹¹ Four years later, the National Association of Crime Victim Compensation Boards was formed to establish a national network for victim compensation programs.

In March 1980, NIJ-funded researchers at the University City Science Center in Washington, D.C., described victim-witness programs for elderly individuals in the report *Police Service Delivery to the Elderly*.¹² The researchers mailed surveys to state and local crime-related service programs that either targeted elderly people or served them as part of the larger population and found that 20 out of 119 qualified survey respondents¹³ offered victim-witness assistance programs. The survey results detailed the type of assistance that was provided and to whom it was offered. The study found that nine of the 20 law enforcement agencies provided victim services. The researchers noted that police departments in Indianapolis, Indiana; Evanston, Illinois; and Rochester, New York, offered assistance that was both direct and long term, starting at the notification of a crime and lasting through court case adjudication and sentencing, if applicable.

President's Task Force on Victims of Crime

On April 23, 1982, President Ronald Reagan established the President's Task Force on Victims of Crime to further address the complexities that crime victims face, which include feeling marginalized and neglected by the criminal justice system.¹⁴

"One of the most important developments to improve the criminal justice system during the past half century has been the recognition of crime victims' role in that process," said the Hon. Ed Meese III, who was appointed by President Reagan as the 75th Attorney General of the United States. "President Reagan emphasized that importance when he initiated the Task Force on Victims of Crime. That talented group accomplished a nationwide assessment of the situation and provided valuable recommendations on how to assist crime victims, treat them fairly, and engender their trust in our nation's system of justice. It also led to the establishment of Victim-Witness Coordinators in every U.S. Attorney's Office."

In the Task Force's final report, Chairperson Lois Haight Herrington appealed to readers to try to understand what it is like to be a victim: "You must know what it is to have your life wrenched and broken, to realize that you will never really be the same. Then you must experience what it means to survive, only to be blamed and used and ignored by those you thought were there to help you. Only when you are willing to confront all these things will you understand what victimization means."

Herrington said that the lives of the Task Force members would be forever changed by the victims they met and the stories they heard. The report included comments from numerous crime victims, such as "I'm a senior citizen, but I never considered myself old. I was active, independent. Now I live in a nursing home and sit in a wheelchair. The day I was mugged was the day I began to die."

In its final report, the Task Force proposed 68 recommendations for federal, state, and local governments; the criminal justice system; and

other organizations to help provide much-needed services and assistance to crime victims. In 1986, the Task Force issued a follow-up report detailing the positive changes that had occurred since its original recommendations were published.¹⁵ In addition to many federal reforms and actions, the Task Force noted an increased emphasis on victimization research, including more than 30 NIJ-funded studies on victims.

In November 1983, NIJ sponsored a conference with the National Judicial College in which two judges from every state learned about the impact they have when they meet with victims face to face.¹⁶ During the same month, the two groups sponsored a symposium for judges to help emphasize the significance of the Task Force's recommendations.

Meanwhile, in light of the Task Force's recommendation to educate students about self-protection, NIJ developed the School Crime and Student Misbehavior Project in 44 schools in three cities. NIJ also organized another program, Laws at Work, which established victim service programs at 10 large private-sector corporations.

The President's Task Force on Victims of Crime — as well as the victims' rights movement of more than a decade earlier — contributed to the creation of the Victims of Crime Act of 1984 (VOCA), which established the Crime Victims Fund. The fund is subsidized by federal criminal fines and penalties, forfeited bail bonds, and special assessments; private donations are also made. In 1988, Congress authorized the Office for Victims of Crime (OVC), which had been formed in 1983, to administer the victim assistance and compensation monies from the Crime Victims Fund to all U.S. states and territories. The funding can also be used for specific programs, training, and technical assistance for crime victim support and research.

The Violence Against Women Act

By 1990, every state had adopted a victims' bill of rights and the Crime Victims Fund had reached a total of \$146 million. In 1994, Congress passed the

Violence Against Women Act (VAWA), which allocated \$1.6 billion over five years¹⁷ for programs to combat violence against women, specifically focusing on intimate partner violence and sexual assault. VAWA criminalized intimate partner violence and violations of protective orders for women and sought to improve criminal justice responses to crimes against women.

NIJ-funded research, particularly the Minneapolis Domestic Violence Experiment, helped shape the formation of VAWA.¹⁸ The experiment, conducted by the Minneapolis Police Department and the Police Foundation from 1981 to 1982, found that arrest was the best law enforcement response for deterring intimate partner violence.¹⁹ However, this approach backfired in other states. Since then, NIJ has awarded numerous research and evaluation grants under VAWA and its reauthorizations.²⁰ (Read the related article “Employing Research To Understand Violence Against Women” on page 24.)

Evaluating Victim Assistance Programs

In 1998, OVC released *New Directions from the Field: Victims' Rights and Services for the 21st Century*, which highlighted progress since the President's Task Force reported its findings.²¹ The report noted, “Today, we can be proud that our nation listened and responded to victims and their advocates. Victims' rights laws have been enacted in every state, more than 10,000 victim assistance programs have been developed around the country, and every state has established a crime victim compensation program.”

However, the OVC report pointed out that many crime victims were still excluded from actively participating in their cases, many crime victims' rights laws were not being administered, and many states were failing to allow victims to consult with prosecutors on plea agreements or to be involved in pretrial release decisions. OVC solicited input from hundreds of individuals — including crime victims, criminal justice practitioners, victim advocates and service providers, VOCA state administrators, and others — to inform the recommendations and action items outlined in its report.

Two studies — one in 2002 and one in 2003 — commissioned by NIJ and funded by OVC examined the needs of crime victims as well as how they use available services.²² Researchers at the Urban Institute in Washington, D.C., and Safe Horizon in New York conducted telephone surveys with all state VOCA assistance and compensation administrators; made site visits to 12 states; hosted focus groups with crime victims; and interviewed via telephone more than 1,800 crime victims who reported specific crimes to law enforcement, used VOCA-funded direct service providers, or filed a compensation claim. The studies found that victims have a wide array of needs that differ depending on the type of crime and the demographics of the victims. The researchers reported that many victims do not use formal victim service programs, which are funded by government or nongovernment agencies to support victims; instead, they use informal supports such as families, friends, and co-workers. The researchers recommended outreach to these underserved victims and an extension of services, arguing that many crime victims do not receive support from informal sources either. Crime victims who used VOCA-funded services reported being satisfied with the services, with 60% indicating that their needs were met.

“This study demonstrated the importance of identifying successes, challenges, and barriers to effective service delivery for victims from diverse populations while keeping in mind that such efforts must be tailored to meet the specific needs arising from the different types of victimization experienced,” Crossland said.

In 2007, NIJ funded an impact evaluation of the National Crime Victim Law Institute's (NCVLI)²³ victims' rights clinics.²⁴ The results indicated that these clinics — which NCVLI established to advocate for victims' rights within the criminal justice system — influenced the promotion of victims' rights in individual cases and encouraged more supportive views toward victims' rights among court officials. The clinics also had some influence on the expansion of rights through “involvement in influential appellate decisions and legislative efforts.”²⁵

Vision 21

In 2013, OVC released *Vision 21: Transforming Victim Services Final Report*, a follow-up to its 1998 *New Directions from the Field* report.²⁶ The concept began in 2010 when OVC leadership heard from advocates about problems that victims still faced, including being turned away because agencies did not have enough funding or could not provide needed services. Also, there were new issues related to how to treat victims of human trafficking (see sidebar, “The Fight Against Human Trafficking”), child commercial sexual exploitation, and financial fraud. OVC funded the National Crime Victim Law Institute, National Center for Victims of Crime, Vera Institute of Justice Center on Victimization and Safety, National Crime Victims Research and Treatment Center of the Medical University of South Carolina, and OVC’s Training and Technical Assistance Center to study the state of victim assistance. The agencies met with victim service providers and advocacy groups, state VOCA providers, and other stakeholders.

“We were part of the Vision 21 conversation about how to enhance the evidence and knowledge base of the victim services field in establishing these practitioner partnerships with researchers to help inform the programs and services that are being delivered,” said former NIJ social science analyst Bethany Backes.

Crossland added that Vision 21 expanded victim services and provided direction for future research and evaluation efforts. The final report identified numerous issues, including the lack of victim reporting, victim-related statistical data, and comprehensive practical data and the difficulty of determining exactly who is included in the victim assistance field. It listed transformative changes under four categories:

- Conduct continuous rather than episodic strategic planning in the victim assistance field to effect real change in research, policy, programming, and capacity building.
- Support the development of research to build a body of evidence-based knowledge and to generate, collect, and analyze quantitative and qualitative data on victimization, emerging victimization trends, services and behaviors, and enforcement efforts.
- Ensure the statutory, policy, and programmatic flexibility to address enduring and emerging crime victim issues.
- Build and institutionalize capacity through an infusion of technology, training, and innovation to ensure that the field is equipped to meet the demands of the 21st century.

The Fight Against Human Trafficking

Human trafficking continues to be a research priority for NIJ; however, many challenges are involved. For example, victims are highly vulnerable and largely hidden from the public, which makes it particularly difficult to obtain accurate statistics on the amount of people trafficked per year.

The United Nations defines human trafficking as “the recruitment, transportation, transfer, harboring, or receipt of persons by improper means (such as force, abduction, fraud, or coercion) for an improper purpose including forced labor or sexual exploitation.”¹ On October 28, 2000, the Victims of Trafficking and Violence Protection Act of 2000 (TVPA)² became the first comprehensive federal law to address the issue and provided a three-pronged approach: prevention, protection, and prosecution. On November 15, 2000, the United Nations General Assembly passed the United Nations Convention Against Transnational

(continued on next page)

Organized Crime and the Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially Women and Children.³

“The passage of the TVPA launched trafficking in the spotlight,” said Amy Leffler, a social science analyst who manages NIJ’s Human Trafficking Portfolio. “Since that time, NIJ has developed a robust trafficking research portfolio, which continues to focus on five core areas of knowledge: the nature and extent of trafficking; identifying and investigating traffickers; prosecuting traffickers; services for trafficking victims; and reduction in demand for trafficking.”

Over the years, NIJ-funded research has revealed many important details about both labor and sex trafficking, which has helped guide policy and practice throughout the country. For example, an official White House statement on the passage of the Allow States and Victims to Fight Online Sex Trafficking Act of 2017 (FOSTA) cited a 2014 NIJ-funded study by the Urban Institute. The study reported that the internet introduced new markets for sex work and sex trafficking advertisement and recruitment, and that perpetrators consider pimping to involve less risk than other crimes, such as drug trafficking. According to the study, pimps move in circuits among other cities with underground commercial sex economies and use social networks to gain information and arrange transport. Offenders also rely on people already under their control to recruit others for sex work.⁴

“This groundbreaking study not only provided the first scientifically rigorous estimates for the revenue generated in the underground commercial sex economy, but also included rich qualitative analysis of trafficking operations, law enforcement perceptions and response, and victimization,” Leffler said.

Understanding more about the victims of trafficking is important as we strive to better identify this population. A 2011 NIJ-funded study by the Urban Institute found that most labor trafficking victims were recruited to come to the United States from within their home country, which was usually in Latin America or Asia. The study found that 71% of the victims surveyed came to the United States legally on a temporary visa. However, by the time they escaped their labor trafficking situation and pursued help from a service provider, 69% had lapsed visas. The employers often used immigration status as a threat to control their victims along with other forms of force, fraud, and coercion. Labor trafficking occurred in many industries, the most common being agriculture, domestic service, and hospitality.⁵

Also in 2011, the Vera Institute of Justice used NIJ funding to develop, test, and validate a screening tool for victims of human trafficking. It determined that 87% of the screening tool questions identified human trafficking victimization and 53% of the 180 screening question respondents were human trafficking victims. The final report indicated that the screening tool has the potential to help not only victim service providers but also investigators and prosecutors of human trafficking cases.⁶

Evaluation of victim services is important for gauging proper protection and prevention of such crimes. In 2009, NIJ awarded a grant to RTI International to evaluate three programs funded by the Office for Victims of Crime (OVC) that serve victims of sex and labor trafficking who are under age 18. The study found that human trafficking victims are diverse and, although these programs did relate to some trafficked youth, they did not meet the needs of others. It ultimately determined that “OVC-funded programs offered unique expertise in trauma and resiliency, understanding of street economies, and the ability to align themselves with young people in a way that formal agencies rarely could.”⁷

To gain a holistic understanding of human trafficking, we must understand the demand. A 2008 NIJ-funded study by Abt Associates examined criminal justice strategies and collaborative programs around the country that decrease the demand for commercial sex. As a result of the study, the website DemandForum.net was launched in 2012. The website details successful tactics used around the country to deter men from buying sex and offers a guide for cities, counties, and practitioners to begin, improve, and maintain anti-demand initiatives.⁸

NIJ-funded research⁹ has shown that human trafficking can happen anywhere in the United States; it does not occur only in large cities. There is a common misconception that human trafficking victims are mostly brought to the United States from other countries; however, many victims are U.S. citizens. Leffler stated that NIJ remains committed to research that will develop the building blocks needed to better understand sex and labor trafficking and the unique challenges that affect victims, law enforcement, and the judicial system, and also to dispel misconceptions and provide clarity to this complicated crime.

Notes

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More Research Is Needed

In December 2014, NIJ hosted a Technical Working Group on Violent Victimization Research that included a discussion on providing victim services.²⁷

“Historically, researchers have not been well-funded to study victim services that are not specific to domestic or sexual violence,” said Backes. “Service provision is a complex practice and providers are often overburdened and underfunded, making it difficult to participate in research.”

According to Backes, there are also challenges in conducting victim services research — for instance, researchers and providers frequently do not speak the same language; there are ethical and privacy challenges in studying victims, especially those in crisis; and the needs of crime victims vary greatly from person to person. “Understanding how valuable these programs are to victims is still unknown,” said former NIJ social science analyst Carrie Mulford.

To address these issues, NIJ and OVC have provided opportunities for building researcher-practitioner partnerships to concentrate on gaps in the evidence base of programs and services. NIJ and OVC have also collaborated to evaluate promising programs and practices for crime victims. For example, OVC established a grant program to support wraparound legal services for victims; NIJ is currently evaluating the program. The goal is to provide comprehensive legal services to address each victim based on individual needs.

In addition to large-scale evaluation efforts, NIJ — with funding from OVC — began publishing a Victims of Crime solicitation in fiscal year 2015. This effort continues, and for fiscal year 2018 NIJ and OVC focused on developing evidence in three main areas of victim assistance: legal assistance, housing and shelter, and technology-based victim services.

“NIJ’s victims of crime program of research was developed to improve knowledge and understanding of violence and victimization at the individual, family, and community levels and fill critical research gaps,” Crossland said. “With support from its sister agencies,

NIJ supports the development of a body of evidence-based knowledge for the field, including the ability to generate, collect, and analyze quantitative and qualitative data on victimization, emerging trends, services, enforcement efforts, and victim needs.”

About the Author

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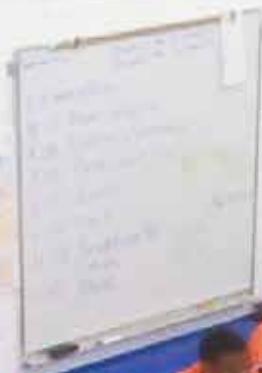
WALL
OF
FAME

YOUNG MEN
EMERGING

WELCOME TO OUR COMMUNITY

INTEGRITY
DOING THE
RIGHT THING,
EVEN WHEN
NO ONE IS
WATCHING

COURAGE
FACING YOUR
FEARS,
EVEN WHEN
YOU DON'T
FEEL LIKE IT



NIJ-FUNDED RESEARCH EXAMINES WHAT WORKS FOR SUCCESSFUL REENTRY

BY **BLAIR AMES**

Across the country, more than 600,000 Americans are released from prisons and jails every year, and more than 4.5 million are serving a community supervision sentence.¹ For these individuals, transitioning back to their communities following incarceration can be a challenge for a number of reasons.

Often, when individuals are released, they face several critical barriers to successful reentry that they will need to overcome. Some have substance abuse issues, others have no place to live, and a criminal record makes it difficult for many to find a job. For most, it is only a matter of time before they return to prison. According to the Bureau of Justice Statistics, 68% of state prisoners are rearrested within three years of their release.²

The role of community corrections practitioners and reentry service providers is to ensure that these individuals do not commit additional crimes and that they gain the skills needed to fully reintegrate into the community. To support individuals returning from prison and jail, communities across the country provide programming — such as education, employment, housing, and other supportive

measures — to help offenders reintegrate. But studying these programs, and identifying the most productive aspects of each that can be replicated in other communities, is a complicated task.

“Every individual has unique needs when they return to the community. Similarly, the communities to which they return have specific needs they are able to address,” said Marie Garcia, special assistant to the NIJ director. “The intersection of these two could present challenges with regard to addressing individual needs and identifying what makes a program successful.”

For the past 50 years, NIJ has fostered rigorous research on recidivism and reentry. In fact, the term “reentry” gained popularity in 1999 after it was adopted by then-NIJ Director Jeremy Travis and others to describe the growing field of social services and rehabilitative supports for people returning from incarceration.

NIJ-supported research has shown that there is no one-size-fits-all model for successful reentry. However, NIJ-supported researchers have evaluated reentry programs with effective and ineffective

NIJ-supported research over the past 50 years has shown that there is no one-size-fits-all model for successful reentry.

attributes, and these studies have identified some efforts that could actually be counterproductive.

NIJ continues to support the evaluation of issues related to reentry, such as statewide initiatives and research that examines the process of reentering society within the context of the communities and families to which former offenders return. Some of NIJ's most significant investments in reentry include evaluations of the Serious and Violent Offender Reentry Initiative (SVORI) and the Second Chance Act, which sought to improve reentry outcomes. Both have provided valuable insight into effective strategies surrounding reentry.

SVORI and the Second Chance Act

To reduce the \$40 billion spent by state governments annually for corrections without compromising public safety, it is critical to identify programs and services that improve outcomes for released prisoners.

Since 2004, NIJ has undertaken expansive reviews of two federal reentry initiatives — SVORI and the Second Chance Act.

SVORI was a collaborative federal effort implemented in 2002 to improve reentry outcomes in five areas: criminal justice, employment, education, health, and housing. A total of 89 SVORI programs operated in adult prisons, juvenile facilities, and communities around the country. Programs offered services such as life skills training, dental and medical care, needs and risk assessments, treatment and release plans, and job placement.

A multisite, multiyear, NIJ-supported quasi-experimental design evaluation of SVORI in 2010

found that there was greater access to programs and services for adults leaving prison. However, these programs showed no impact on the rates of rearrest and reincarceration for adult men and no significant impact on reincarceration for adult women.³

Later analysis found more promising results.⁴ In a longer-term follow-up study in 2012, NIJ-supported researchers found that participation in SVORI programs was associated with longer times to rearrest and fewer arrests in general. Specifically, services oriented toward individual change — such as substance abuse treatment, cognitive-focused programs, and education — were found to have modest beneficial effects.

However, services aimed at practical needs — including reentry preparation, life skills programs, and employment services — did not improve postrelease outcomes for men. In some cases, these services appeared to be detrimental to their successful reintegration.

For women, SVORI services led to more positive outcomes in the areas of employment and substance abuse compared with non-SVORI women, but there were no significant differences in outcomes related to housing, recidivism, family and peer relationships, or physical and mental health.

Although SVORI programming had only modest benefits for participants, the evaluation was able to identify programs that could be detrimental to individuals' reentry success.

"It's just as important to know something doesn't work so that we don't keep going down that road and developing more programs that have not proven to be effective. I think that's why we need replication research," said Angela Moore, senior science advisor and social scientist at NIJ.

Building on the positive findings from the follow-up analysis of SVORI, NIJ recently completed three multisite, multiyear evaluations of the impact of the Second Chance Act on recidivism (see sidebar, "Reentry Court Evaluation").

Reentry Court Evaluation

Through NIJ's comprehensive evaluation of Second Chance Act programs, Northwest Professional Consortium, Inc., completed an evaluation of eight sites that had received Second Chance Act funding. Among the sites evaluated, some used funding to expand their reentry court programs, while others established new reentry courts.¹

Of the eight reentry courts evaluated, all but one became fully operational. At the end of the evaluation period, six appeared to have positive prospects for sustaining their programs after the grant funding. A key lesson learned, based on the experience of grantees, was the importance of having team members who were committed to the success of clients and who believed in the reentry court model. Numerous stakeholders across the evaluated sites identified commitment to the reentry court philosophy and its participants as central to successfully implementing a program, especially among decision-makers such as judges and supervision officers.

The prospects of reducing recidivism, however, were not as positive. Overall, reentry court participants were found to have greater access to services along with higher accountability and supervision. Yet only one of the courts showed that program participants were less likely to be rearrested, reconvicted, and reincarcerated. At other sites, participants were significantly more likely to be reincarcerated, which indicates that the use of jail as a sanction for noncompliance may not be an effective use of resources.

Note

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The Second Chance Act, signed into law in 2008, was intended to increase reentry programming and improve outcomes for former offenders returning to their families and communities. The Second Chance Act awarded federal grants to government agencies and nonprofit organizations to provide employment assistance, substance abuse treatment, housing, family programs, mentoring, victim support, and other services to individuals reentering society. As with SVORI, NIJ-funded evaluations found that the programs offered through the Second Chance Act have brought about positive change.

Most importantly, two NIJ-supported randomized controlled trial evaluations led by Social Policy

Research Associates (SPR) and RTI International found that the Second Chance Act significantly increased participants' access to reentry services.⁵ However, in general, participation in these programs did not affect a range of reentry outcomes, such as the likelihood of recidivism, substance abuse, and compliance with supervision.

The SPR evaluation analyzed seven reentry programs, including 966 individuals receiving services through the Second Chance Act.⁶ Second Chance funds were important in expanding the seven grantees' capacity for reentry services, and those receiving services were significantly more likely to have a reentry plan and a case manager whom they trusted. At the end of 30

Developing a New Risk Assessment Tool: Implementing a Key Feature of the First Step Act

An offender's release from prison is an important step toward a crime-free and productive life. Communities are safer when correctional facilities do a better job of rehabilitating offenders in custody and preparing them for a successful transition to life after incarceration.

The First Step Act (FSA), signed into law in December 2018, aims to reduce recidivism and reform the federal prison system. A critical component of the law is the development of a risk and needs assessment system for the Federal Bureau of Prisons (BOP).

Risk and needs assessment tools can provide important information across varying decision points in the criminal justice system. As required by the FSA, it is critical that the risk tool used by BOP employs static and dynamic factors that inform the provision of programming and treatment referrals and help predict the likelihood of recidivism and serious misconduct.

Under the FSA, NIJ supported the development of a new risk assessment system. NIJ contracted with outside experts to develop the Prisoner Assessment Tool Targeting Estimated Risk and Needs (PATTERN), a significant advancement in the Justice Department's implementation of the FSA.

PATTERN is an assessment designed to predict the likelihood of general and violent recidivism for all inmates over a three-year follow-up period. PATTERN achieves a high level of predictive performance and surpasses what is commonly found for risk assessment tools for correctional populations in the United States.

PATTERN is an important step forward in the Department's goal of fully implementing the FSA. NIJ remains committed to working with its federal partners to implement additional key features of the statute.

months, individuals in Second Chance Act programs had better long-term employment and earnings but were no less likely to be rearrested, reconvicted, or reincarcerated.

Moving Forward

The hurdles to successful community supervision and reentry can be daunting. Given the public safety and fiscal implications of an individual's success in reintegration, it is critical that community leaders and correctional stakeholders know which initiatives are the most effective.

To further support the development of knowledge about what leads to successful offender reentry, NIJ is engaged in the work of the newly created Federal Interagency Council on Crime Prevention and Improving Reentry (or Reentry Council). Composed of more than a dozen federal entities, the Reentry Council has a unique opportunity to implement strategies aimed at preventing crime, improving reentry for American youth and adults, and encouraging prison reform across the nation. In April 2018, the attorney general appointed NIJ Director David B. Muhlhausen to serve as the executive director of the Reentry Council. In this new role, NIJ can infuse the work of the Reentry Council with

science about what works in offender reentry and continue to build important collaborations across the federal government. (See sidebar, “Developing a New Risk Assessment Tool: Implementing a Key Feature of the First Step Act.”)

Further supporting NIJ’s role in using science to better understand what makes reentry programming successful, a new NIJ initiative will promote the rigorous examination of other promising reentry strategies, initiatives, and programs. Specifically, NIJ is interested in evaluating programs aimed at adults and young adults with a moderate to high risk of reoffending.

Garcia described this effort as “a call to the field to be thoughtful and innovative about offender reentry.”

“We know a lot about the challenges that we face — implementing programs, ensuring that services match offender needs, and the myriad of other issues that arise when providing services to a high-need population that likely come from under-resourced communities,” she said. “Knowing what we know, we need to do better. This is the field’s chance to do just that.”

About the Author

Blair Ames is a digital journalist and contractor with Leidos.

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NCJ 252734



PROBLEM-SOLVING COURTS: FIGHTING CRIME BY TREATING THE OFFENDER

BY PAUL A. HASKINS

Courts designed to stop crime by treating substance use disorders and other serious problems underlying criminal conduct are known as problem-solving courts (PSCs). Implicit in that designation is broad recognition among justice stakeholders that traditional criminal courts, rooted in adversarial prosecution and punishment, were not working for certain classes of offenders, their victims, or society at large.

What began as a creative justice-delivery alternative, born of necessity in the late 1980s and 1990s when the crack cocaine epidemic¹ was overwhelming court dockets and filling prisons with unreformed drug offenders, is now a fixture of the American criminal justice system. Adult treatment drug courts alone account for over 1,600 of the more than 3,100 PSCs in the United States. Initially isolated, specialized dockets for managing high volumes of drug cases, drug courts today represent a national movement fortified by extensive research on what works and an active, collaborative practitioner community.

For NIJ, working to define, refine, and assist PSCs has been a research priority for a quarter of a century, since it sponsored an evaluation of the nation's

inaugural PSC, the Miami-Dade County Felony Drug Court, in 1993. What began as a narcotics docket evolved, with the aid of NIJ research, into a proliferation of drug-court program ideas emanating from courts and researchers. Comparative scientific research identified the best of those ideas, leading to PSC models, said Linda Truitt, the NIJ senior social scientist who coordinates the Institute's drugs and crime research portfolio.

Now new urgency is infusing the drug court movement, as the nationwide opioid crisis exacts an unprecedented toll and the rates of drug overdose deaths increase for all age groups (see the related article "Identifying New Illicit Drugs and Sounding the Alarm in Real Time" on page 16).² A presidential commission in November 2017 called for a comprehensive federal assault on opioids, with millions of dollars in new funding committed to enhancing the drug treatment and rehabilitative services of adult drug courts and other PSCs.³ The commission also called on all 93 federal judicial jurisdictions to establish federal drug courts, noting that as of 2015 only 27 federal district courts were operating as drug courts.

At the opioid commission's urging, new federal dollars are also flowing to veterans treatment courts, a prominent PSC category on a steep growth trajectory over the past decade. The Department of Veterans Affairs reports that more than 550 court dockets are now dedicated to former and active-duty service members who are facing criminal charges, some of whom have life-threatening substance use disorders.⁴

The PSC model, like research on the courts' development and impact, is dynamic at its core. The model, while theoretically grounded, must be sufficiently flexible to accommodate varying needs across jurisdictions as well as shifts in populations, drug use, resources, and other factors. Thus, a fundamental duality has characterized the evolution of the nation's drug courts, said Truitt. Communities balance grassroots development of drug courts tailored to a unique set of local needs against a commitment to a known and sustainable program model.

"These two dynamics are not at odds in successful problem-solving courts where monitoring and assessment are routine," Truitt said. Over time and across jurisdictions, a general set of practices evolves, creating a new program model. NIJ is charged with objectively examining new models, strengthening their components through applied research, and working with other federal agencies and research partners to develop and recommend best practices.⁵

Research amassed and analyzed through NIJ research grants and other sources suggests that drug courts are generally beneficial in terms of reducing recidivism and drug relapse. As NIJ's quasi-experimental Multisite Adult Drug Court Evaluation (MADCE) concluded, "Drug courts produce significant reductions in drug relapse . . . [and] criminal behavior."⁶

Research has also established, however, that the ultimate question — the extent to which any given drug court is beneficial on balance — has a complex answer that depends on a number of factors, including that court's targeted offender population; the

quality, type, and cost of treatment; and cost-benefit measures that take into account multiple categories of spending and savings that inform success or failure.

A priority for agencies that fund and assist drug courts is ongoing evaluation of the courts' cost-efficiency. Agencies look at this cost-efficiency in terms of outcomes for addicted offenders, benefits for the criminal justice system, return on tax dollars expended, and preservation of fundamental justice values — such as defendants' due process rights — in nontraditional court settings where the degree of discretion accorded to judges is exceptional. Federally supported training of court staff, in turn, focuses largely on ensuring that court standards and practices reflect the latest and best research in the field. Carolyn Hardin, chief of research and training for the National Association of Drug Court Professionals (NADCP), a leading provider of PSC training, said NADCP court trainers work continually to turn knowledge into practice. "Research has identified which elements of drug courts produce the best results," she said. "Our priority is to train drug courts and other treatment courts on following research-based best practices to improve outcomes like recidivism and save money. We call that 'fidelity to the model.'"

Genesis of the PSC Philosophy

At its inception, the PSC concept was as simple as it was revolutionary. Problem-solving courts incorporated philosophical elements of community-focused policing, emphasizing treatment over punishment. As New York's Center for Court Innovation, a leader in PSC development, has noted:

Problem-solving justice traces its roots to community and problem-oriented policing, which encourages officers to identify patterns of crime, address the underlying conditions that fuel crime, and actively engage the community. Today, thousands of problem-solving courts are testing new approaches to difficult cases where social, human, and legal problems intersect.⁷

An inclusive approach, summoning all stakeholders to the table and engaging all of them in the outcomes, has been central to PSC effectiveness. An Office of Justice Programs brochure on drug courts identified elements of a typical drug court team:⁸

Although drug courts vary in target populations and resources, programs are generally managed by a multidisciplinary team including judges, prosecutors, defense attorneys, community corrections, social workers, and treatment service professionals.

Cautionary notes were sounded by NIJ, however, soon after the First National Drug Court Conference in December 1993, where a multitude of divergent early PSC approaches surfaced, suggesting a need for universal norms. An NIJ paper stated, in reference to that conference:⁹

The character of innovation and collaboration between justice and treatment systems was revealed to be broader and deeper than perhaps the simple outline of the original drug court model would have suggested. The diversity and variation in approaches also underscored the critical need for defining the boundaries of what a drug court is and what a drug court is not — in other words, for defining some parameters and basic standards for drug courts.

To rein in the early proliferation of drug court approaches, participants at the first drug court conference adopted a list of 10 elements vital to the success of a drug court.¹⁰ That early objective-setting exercise foreshadowed the 10 key components of drug courts, issued by the federal Drug Courts Program Office in 1997.¹¹ The key components would serve as parameters for drug court practices, models, and evaluation.

In 1994, Congress broadly committed federal money to expanding state and local drug courts through the Violent Crime Control and Law Enforcement Act. The statute made development of PSC operating norms

imperative. The July 1995 “National Institute of Justice Update” from then-NIJ Director Jeremy Travis favorably observed, “The need to establish appropriate drug court standards is particularly important to help ensure that Federal funds are spent on implementing a clearly defined concept.”

Best Practices and Models Emerge

Today’s drug courts are guided by best-practice research substantially driven by NIJ, which managed two seminal adult drug court studies:

- A quasi-experimental, longitudinal examination of an adult drug court in Multnomah County (Portland, Oregon), resulting in the 2007 report *The Impact of a Mature Drug Court Over 10 Years of Operation: Recidivism and Costs* (Multnomah Study).
- The Multisite Adult Drug Court Evaluation (MADCE), a quasi-experimental evaluation of probationers in 23 adult drug courts and six comparison jurisdictions in eight states.

The Multnomah Study broke ground by establishing that, over a period of at least five years per defendant, drug courts were more economical than traditional criminal court processes. The study looked at 6,500 drug court cases and 4,600 cases processed outside the drug court model, finding that the cost per offender in drug courts was \$1,392 less than the cost per offender through the conventional route.¹² Factors contributing to that economy included saved prison days.

It should be noted that, as quasi-experimental research designs, both the Multnomah Study and MADCE faced inherent limitations on the strength of their findings. Unlike a randomized controlled trial (RCT) — which measures and compares experimental effects on randomly selected treatment groups and control groups in order to precisely gauge an experimental treatment’s impact — quasi-experimental designs typically lack the benefit of random selection of subjects, introducing a risk of biased results, a phenomenon known as selection bias.

For a retrospective study such as Multnomah (looking back 10 years), however, an RCT is not feasible. The investigators in the wide-scope MADCE study noted that their quasi-experimental design offered advantages in that instance, including more generalizable results from multiple sites across the country, and the fact that the large pooled sample and data collection allowed them “to open the ‘black box’ of effective drug court practices far beyond most prior studies.”¹³ Moreover, equivalent interview and records information obtained for drug court and comparison probationers were used to match research subjects for statistical controls on individual, court, and jurisdiction factors.

Where RCTs are feasible and a better fit, however, they offer clear advantages over quasi-experimental studies at risk of selection bias.

“Before we can judge a drug court program to be effective, we first must understand the importance of selection,” explained NIJ Director David B. Muhlhausen. “It can be astoundingly difficult to distinguish between what is working and what is not, and nowhere is this predicament truer than when the criminal justice system tries to change human behavior.”

For example, individuals volunteering entry into a drug court program may be more motivated than individuals not seeking the benefits of the program, Muhlhausen said. In other cases, judges may carefully select defendants for drug court participation based on characteristics that they believe will most likely yield beneficial results, he said.

“Such motivational factors and other similar factors are often invisible to those assessing effectiveness,” said Muhlhausen. “Failure to account for these factors can produce a spurious association between drug court participation and recidivism and substance abuse outcomes.”

Muhlhausen added that the limited number of RCTs that did not suffer from high attrition fail to offer clear evidence that drug courts reduce recidivism. He underscored the need to use RCTs to rigorously

evaluate drug court programs in the United States to gauge their effectiveness.

MADCE gathered data from 1,157 drug court participants and 627 comparison probationers in 29 U.S. jurisdictions over five years, with a final report issued in 2011. MADCE researchers¹⁴ found that drug court participants reported less drug use than comparable offenders (56% vs. 76%) and were less likely to test positive for drug use (29% vs. 46%). Participants reported less criminal activity after entering drug court (40% vs. 53%), with fewer rearrests (52% vs. 62%) than comparable offenders. Moreover, although treatment investment costs were higher for drug court participants, they experienced less recidivism than comparable offenders, and drug courts saved an average of \$5,680 to \$6,208 per offender overall.¹⁵

In sum, savings associated with avoided victim costs and criminal justice system costs were greater with drug courts than conventional criminal dockets due to fewer crimes, rearrests, and incarcerations (see exhibit 1).

MADCE data revealed certain limits of drug court effectiveness, pointing to a better return on investment for more serious offenders with drug disorders, as well as the importance of performing appropriate cost-benefit analyses in continuing assessments of drug courts. A MADCE researcher, writing on drug court impact as measured by a detailed bottom-up, cost-benefit analysis method, concluded:¹⁶

Drug courts prevent many petty crimes and a few serious crimes. In fact, the CBA [cost-benefit analysis] results showed that those few serious crimes drive much of the drug court effect; if we remove those outliers, the benefits of drug courts barely exceed the cost. This finding suggests that although drug courts may reduce recidivism among many types of offenders, drug courts that target serious criminal offenders with a high need for substance abuse treatment will produce the most effective interventions and a maximum return on investment.

Exhibit 1. Net Benefits by Category for Drug Court Participants and Comparison Probationers			
Category	Drug Court Participants	Comparison Probationers	Net Benefit
Social Productivity	\$20,355	\$18,361	\$1,994
Criminal Justice System	-\$4,869	-\$5,863	\$994
Crime and Victimization*	-\$6,665	-\$18,231	\$11,566
Service Use*	-\$15,326	-\$7,191	-\$8,135
Financial Support Use	-\$4,579	-\$3,744	-\$835
Total	-\$11,206	-\$16,886	\$5,680

*Difference is statistically significant ($p < 0.01$).

Source: John Roman, "Cost-Benefit Analysis of Criminal Justice Reforms," *NIJ Journal* 272, September 2013, 36.

Today, the critical MADCE insight that drug courts are better off targeting certain offender types is a point of emphasis for federally contracted drug court trainers and a best practice for drug courts generally. Hardin of the NADCP said:

Fifteen to twenty years ago we knew drug courts should serve offenders with substance use disorders, and we trained courts on identifying and serving this population. Well, now the research is very clear. Drug courts are most effective when serving high-risk, high-need offenders. Today, we train jurisdictions on what that means. We say, "Okay, if you're going to be doing drug court, your target population has to be based on the research. This means offenders who are assessed to be both at high risk of reoffending and in high need of services. So what does that look like in your community?"

The steady refinement of a drug court model anchored in research-based principles can only take drug courts as far as local policy and resource choices permit, NIJ's Truitt cautioned. Thus, while the model is informed by research establishing what drug courts do best — targeting high-risk, high-need, drug-using offenders to efficiently curb recidivism and relapse — not all drug courts do so.

"If the target population is relatively high in risk and need," Truitt said, "then the program should yield differences in relapse, recidivism, and other outcomes that translate into lower criminal justice costs and other public costs. That return on investment will not be achieved unless the program is fully implemented, the most burdensome population is targeted, and local resources are compatible with targeted offender risk, need, and responsiveness considerations."

In 2012, key information from NIJ-supported research was gathered and translated into practice terms under a joint Adult Drug Court Research to Practice Initiative (R2P) with the Bureau of Justice Assistance (BJA). The R2P program — a collaboration of those Department of Justice branches working with research and practice experts — identified seven program design features for adult drug courts:¹⁷

1. *Screening and assessment:* Legal and behavior screening, and assessment of risk, needs, and responsiveness.
2. *Target population:* The specific offender subgroup(s) the program is designed to serve.
3. *Procedural and distributive justice:* Fair process and equitable outcomes, and the perception of them, through graduated sanctions and incentives, full

information regarding compliance, and meaningful responses to participants.

4. *Judicial interaction*: Decisions based on frequent and respectful interactions with defendants and a clear understanding of program resources.
5. *Monitoring*: Community-based surveillance and supervision to manage compliance, including drug testing.
6. *Treatment and other services*: Alcohol and other drug treatment in addition to employment and other rehabilitative services.
7. *Relapse prevention, aftercare, and community integration*: Identifying triggers and supports to prevent relapse.

Since the inception of drug courts, the literature in the field has stressed the importance of continual monitoring (by court management) and evaluation (by objective outside entities).¹⁸ The perceived need for vigilance reflects the importance of both keeping a close watch on public spending and striking an appropriate balance between defendants' legal rights and drug court judges' discretionary authority. (See sidebar, "Due Process and the Role of Judges.")

A Research Road Map for Veterans Treatment Courts

As part of the federal response to the nation's opioid emergency, funding in the treatment court field has surged. The president's fiscal year 2018 opioid budget provided \$75 million for adult treatment drug courts, up from \$43 million in fiscal year 2017, and \$20 million for veterans treatment courts, up from \$7 million in 2017. Both are funded under the Adult Drug Court Discretionary Grant Program. A primary conduit of federal financial support for various types of problem-solving courts is BJA, which in turn funds many of NIJ's PSC research projects.

Like drug court practitioners who were empowered by the findings of the drug court multisite study a few years ago, veterans treatment court professionals await research now in development that is designed to illuminate best practices in that venue. The first phase is NIJ's Multisite Evaluation of Veterans Treatment Courts, which gathers information about process and participant outcomes from eight veterans courts. The study is funded by BJA and coordinated with the Department of Veterans Affairs and the Substance Abuse and Mental Health Services Administration of the Department of Health and Human Services.

Due Process and the Role of Judges

A recurring theme in drug court research, including the Multnomah County and Multisite Adult Drug Court Evaluation studies, has been the critical role of the judge. Drug court procedures are designed to enable judges and participants to interact in a cooperative, largely nonadversarial setting that encourages positive treatment outcomes. As one scholar surveying relevant research observed:¹

These courts get good results in large part because participants have positive perceptions about them. Faith in the court makes people more likely to follow treatment plans and stay away from trouble in the future. In interviews, specialty court participants report feeling that they have a voice

in the treatment process and are treated with dignity and respect. . . . Offenders who take part in specialty court programs frequently rate interactions with judges as one of the more important and positive aspects of their experience.

It has long been recognized, however, that the procedural freedom enabling a drug court judge to act as an ally of the defendant in a nonadversarial setting comes at some risk of judicial inconsistency or impairment of defendants' rights. A report prepared by an American University team, based on findings from a national focus group of problem-solving court (PSC) administrators and judges, observed:²

Another challenge from the traditional court perspective was the practice [in PSCs] of suspending the adversarial process and having defendants "give up their rights to the traditional process in order for the court to help them." The adversarial process was described in this group not as contentious, but rather as the taking of differing positions to ensure that the situation of the defendant was understood more fully. The participants agreed that the adversarial process could have a detrimental [effect], where the sides could become overly contentious and in turn slow or prevent the resolution of a case. In spite of this concern, the participants acknowledged that the original principle behind the adversarial process was still a good one and should not be lightly put aside.

With that inherent institutional tension in mind, a pillar of the drug court model is preservation of core due process principles. The seven program design features developed by NIJ and the Bureau of Justice Assistance state that with respect to procedural and distributive justice, "The basic concerns are fair process and equitable outcomes."³

Notes

1. Kelly Frailing, "The Achievements of Specialty Courts in the United States," Scholars Strategy Network, April 11, 2016; and Rachel Porter, Michael Rempel, and Adam Mansky, *What Makes a Court Problem-Solving? Universal Performance Indicators for Problem-Solving Courts*, submitted to the State Justice Institute (New York: Center for Court Innovation, February 2010), 22. "One focus group participant put it this way: 'Judges interact with the accused or interact with participants and the players in the system in an entirely different way of talking to people. That is a very, very real distinction When you walk in, you start to go, Oh my god. The judge is actually looking the client in the eyes and talking to them like he's a person. In traditional courts, judges try hard not to do that [because] they are trying to maintain their objectivity.'"

2. American University, "Challenges and Solutions to Implementing Problem-Solving Courts from the Traditional Court Management Perspective," Bureau of Justice Assistance National Training and Technical Assistance Project, April 2008.

3. Bureau of Justice Assistance and National Institute of Justice, "Seven Program Design Features: Adult Drug Court Principles, Research, and Practice," Research to Practice fact sheet, January 2012, 8, NCJ 248701, <https://www.ncjrs.gov/pdffiles1/nij/248701.pdf>.

Sean Clark, the national coordinator of the Veterans Justice Outreach program at the Department of Veterans Affairs, regards the NIJ evaluation as a vital step for defining the future of veterans treatment courts. Currently, he said, veterans court trainers are “extrapolating from what works in [adult] treatment courts that are not veteran-specific. Building that body of research and that knowledge base about veterans treatment courts in particular is the key first step to be able to say, ‘This is what needs to happen next.’”

According to Truitt, who manages the project, the study’s assessment of implementation and intermediate outcomes of diverse veterans treatment courts explores target populations and key issues (e.g., violent offending and mental and physical health), adherence to problem-solving principles, and service access and delivery. Looking ahead, NIJ is developing plans for an impact and cost evaluation of veterans treatment courts using RCTs and other rigorous research designs, she said. That next phase of research will examine unique program elements, such as veteran peer-to-peer mentoring and use of remote technologies to leverage treatment and supervision.

Clark at the Department of Veterans Affairs said one critical research need the veterans multisite study is expected to address is for screening tools to better identify those veterans who would benefit most from placement in a veterans treatment court.

Conclusion

Problem-solving courts have evolved from a novel outlier to a ubiquitous feature of the American justice landscape, with more than 3,000 drug courts and other PSCs nationwide.

“Moving forward, more scientifically rigorous RCTs are needed to confirm whether drugs courts are, in fact, as effective as the quasi-experimental evaluations indicate,” cautions NIJ’s Muhlhausen.

NIJ research will continue to objectively examine new models, strengthen new components by

applying research-based principles, and collaborate with federal and other research partners on recommendations for practice.

About the Author

Paul A. Haskins is a social science writer and contractor with Leidos.

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3. *The President’s Commission on Combating Drug Addiction and the Opioid Crisis*, Final report, November 2017, 16, https://www.whitehouse.gov/sites/whitehouse.gov/files/images/Final_Report_Draft_11-1-2017.pdf.
4. Barbara Goldberg, “Opioid abuse crisis takes heavy toll on U.S. Veterans,” *Reuters*, November 10, 2017.
5. Other PSC categories that have benefited from NIJ research are mental health courts, adult reentry courts, and tribal courts.
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7. “Problem-Solving Justice,” Center for Court Innovation.
8. U.S. Department of Justice, Office of Justice Programs (NIJ, BJA, OJJDP), “Drug Courts,” May 2018, <https://www.ncjrs.gov/pdffiles1/nij/238527.pdf>.
9. “Justice and Treatment Innovation: The Drug Court Movement. A Working Paper of the First National Drug Court Conference, December 1993,” Final report to NIJ, award number OJP-94-076M, October 1994, 36, NCJ 149260, <https://www.ncjrs.gov/pdffiles1/Digitization/149260NCJRS.pdf>.

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11. Rachel Porter, Michael Rempel, and Adam Mansky, *What Makes a Court Problem-Solving? Universal Performance Indicators for Problem-Solving Courts*, submitted to the State Justice Institute (New York: Center for Court Innovation, February 2010), 9.
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NCJ 252735



FIGHTING STRESS IN THE LAW ENFORCEMENT COMMUNITY

BY JIM DAWSON

Be it an officer patrolling a high-crime neighborhood in a big city, a small-town cop responding to a bar fight, or a homicide detective arriving at the scene of a multiple murder, the common factor in their jobs is stress. They work in environments where bad things happen.

The same is true of corrections officers — the men and women who work in prisons, often with thousands of convicted criminals who do not want to be there. Corrections officers work in confined societies that are, by definition, dangerous. The stress levels are so high that, in one study, 27% of officers reported symptoms of post-traumatic stress disorder (PTSD).¹

NIJ has a long history of supporting research related to stress for law enforcement personnel, but in 2016, NIJ's experts determined that a coordinated research agenda was needed to better respond to this long-standing issue. As a result, NIJ developed the Safety, Health, and Wellness Strategic Research Plan to describe its current and projected efforts to promote the safety, health, and wellness of individuals who work in or are affected by the criminal justice system. What is unique in the plan is that it calls for science-based tools to measure and monitor physical and mental health.²

The plan, which will continue through 2021, focuses on three populations within the criminal justice system and includes those who are employed by, under the supervision of, or interact with the system. The plan states that “the focus on stress, trauma, and suicide and self-harm prevention cuts across demographic areas highlighting the importance of promoting research of these topics within the criminal justice system.”

Early Studies

This emphasis on health and wellness builds on earlier NIJ studies, such as a 1996 project to develop a law enforcement stress program for officers and their families. That report, based on nearly 100 interviews with mental health experts, police administrators, and officers, provided “pragmatic suggestions that can help every police or sheriff’s department reduce the debilitating stress that so many officers experience.”³

A 2000 NIJ-supported project looked at the high stress among corrections officers and noted that, in addition to understaffing, overtime, shiftwork, and a poor public image, the officers faced work-related stress that included the “threat of inmate violence

and actual inmate violence.” The report said that many corrections officers “do not answer their home telephones because it might be the institution calling for overtime.”⁴

In 2005, the Police Foundation focused on how shiftwork affects police officers, which continues to be a serious issue throughout law enforcement. That NIJ-supported study looked at the length of shifts, the impact of double shifts, and other factors that lead to fatigue and physical problems for law enforcement personnel.⁵

A 2012 NIJ-supported study on shiftwork and fatigue concluded that shiftwork not only increases stress but also leads to sleep problems, obesity, heart problems, sleep apnea, and an increase in the number of officers who snore. That study, by John Violanti with the School of Public Health at the State University of New York at Buffalo, also found a link between PTSD and increased rates of depression and suicide. “Mediation of brain processes due to sleep deprivation and fatigue may also impact suicidal thinking,” Violanti’s report said.⁶

Although many of these early studies were important, they were not part of a coordinated NIJ agenda to systematically study the impact of stress on health and wellness.

“So NIJ’s scientists came together in 2016 using taxonomy from the World Health Organization and the Centers for Disease Control to articulate a health and safety strategic plan,” said William Ford, an NIJ physical scientist and senior science advisor.

The focus on using scientific tools to obtain physical markers for stress and fatigue is new to studies of law enforcement, Ford said, “and we want to create data for other research down the line. We want to translate the body of research related to stress so it is applicable to the criminal justice community.”

Overcoming the “Tough Guy” Culture

A major hurdle in working with police and corrections officers on issues of physical and mental health is

the “tough guy” attitude common in law enforcement. When researchers approach officers and ask officers about alcoholism, divorce, suicide, and other problems that are widespread in law enforcement, they do not want to talk about the issues on a personal level because it could damage their careers.

That was true when the earlier studies were done and it is true today, said Brett Chapman, a social science analyst at NIJ. To overcome the resistance to programs that many in law enforcement see as indications of personal weakness, “you have to emphasize these programs in the police academy,” Chapman said.

In work that he has done with police departments, Chapman said that the more successful health and wellness programs were held at sites away from the departments “because officers are not going to go if it is at the department. If you show any indication that you’re under stress or anything like that, it could impact your career.”

When dealing with stress, officers typically say, “I’m going to control it and not let it control me,” Chapman said. “The next thing you know, divorce, alcohol use, drug use, and other problems start to occur.”

So, while officers — both men and women — are telling themselves how tough they are, their stress-related health problems inevitably begin. “Whether it’s obesity, or [a] cardio problem, or all of the other problems, they accumulate,” Chapman said. (See sidebar, “The Stress of an On-The-Job Killing.”)

NIJ’s Strategic Research Agenda

When the strategic plan was instituted in 2016, several existing NIJ research grants supported its goals, including the University of Chicago study titled *Law Enforcement Officers Safety and Wellness: A Multi-Level Study*, which is still underway. It includes a two-stage survey of more than 1,000 personnel from law enforcement agencies to determine what is being done and what factors are at play in officer safety and wellness programs. The study addresses a wide range of stress-related topics, including violence, shiftwork,

and alcohol abuse; according to the researchers, it is the first comprehensive national study of the law enforcement community. After evaluating several health and wellness programs, the researchers intend to design interventions that will provide agencies with best practices programs that can be successful.

The following are other NIJ safety and wellness grants that are part of the strategic plan:

- *The Effects of Post-Traumatic Stress Disorder (PTSD) Symptoms on Behavioral, Psychological, and Neurophysiological Measures of Decision Making in Police Officers*, a study by researchers at the State University of New York at Buffalo. “In spite of the repeated exposure of police officers to traumatic events and the prevalence of PTSD symptomatology among officers, there are few studies to date that have examined the effects of PTSD on both the psychological and neurophysiological basis of police decision making,” the researchers said. An earlier study by the researchers found “reduced volume” in certain brain structures as a result of PTSD, and this current study continues and expands that work.⁷
- *Neighborhoods, Stress, and Police Behavior: Understanding the Relationships*, a study by researchers at Wayne State University in Detroit. The study examines how “chronic environmental stressors” affect police patrol officers, specifically looking at the challenges that come from policing in urban neighborhoods. “Though stress clearly impacts officers, it is unclear how stress influences policing at the street level, or what role various environmental stressors play in police officer stress and performance,” the researchers said.
- *The Impact of Mindfulness-Based Resilience Training on Stress-Related Biological, Behavioral, and Health-Related Outcomes in Law Enforcement Officers*, a study by researchers at the University of Wisconsin-Madison. Acknowledging that law enforcement officers are exposed daily to “extreme levels of occupational stressors,” the researchers note that there are substantial differences in perceived stress by individual officers who are exposed to similar stressors. The researchers will study the impact of a novel training program called “mindfulness-based resilience training on perceived stress on physical and mental measurements in participants.”
- *Effects of Mindfulness-Based Stress Reduction in Correctional Officers: A Biopsychosocial Approach*, a study by researchers at the University of Louisville, Kentucky. Noting that corrections officers “have a higher rate of suicide than any other occupation” and that one-third meet the criteria for PTSD, the researchers will use a randomized experimental design to examine the effectiveness of mindfulness training on biological mechanisms, such as cortisol levels. “This project has the potential to identify a feasible intervention that can ameliorate the effects of stress on correctional officers’ health,” the researchers said.
- *Examining the Role of Physiological and Psychological Responses to Critical Incidents in Prisons in the Development of Mental Health Problems Among Correctional Officers*, a study by researchers at the University of Nebraska, Omaha. Noting that corrections officers experience high rates of workplace violence and rank high for nonfatal injury rates and absenteeism because of those injuries, the researchers are focusing on whether exposure to critical violent incidents contributes to negative health and occupational outcomes. The researchers are also examining whether corrections officers’ constant exposure to violence increases their vulnerability to developing PTSD.
- *Defining Impact of Stress and Traumatic Events on Corrections Officers*, a study by researchers at the Oregon Health & Science University, Portland. The researchers are conducting an 18-month observational study of about 400 corrections officers and will select the 80 most stressed and 80 least stressed officers. Those officers will undergo functional magnetic resonance imaging (fMRI) to identify alterations in neurocognitive processes affected by stress. “This project will assess and define the impact of chronic stress and traumatic events on corrections officers to define the necessary urgent steps to improve officer well-being,” the researchers said.
- *Suicide Prevention and Intervention Strategies by Law Enforcement Agencies: Utilization, Characteristics, and Costs*, an in-depth and ongoing

The Stress of an On-The-Job Killing

When David Klinger shot and killed the man who was trying to stab his partner to death in 1981, it was up close, but it wasn't personal. Klinger, then a patrol officer with the Los Angeles Police Department, was only 23 years old when the assailant suddenly pulled a large knife and attacked like a "madman," Klinger wrote in his 2004 book *Into the Kill Zone*.

Klinger's partner went down under the frenzied knife attack and was on his back trying to fend off the assailant's efforts to push the knife into his neck when Klinger joined the fray. As Klinger's attempts to wrestle the knife from the man failed, his partner yelled, "Shoot him!" So Klinger did. "I picked a spot on the left side of the madman's chest, brought my gun up, and pulled the trigger," Klinger wrote. The man died within minutes.

"I had gone into law enforcement to help people, not kill them," he wrote, "and the shock of having taken a life stayed with me for a long time. It was a major reason why I left police work." Klinger is now the chair of the Criminology and Criminal Justice Department at the University of Missouri and studies various aspects of policing, including the use of deadly force. In a 2002 NIJ-supported study entitled "Police Responses to Officer-Involved Shootings," he looked at the stress a police officer experiences after killing someone in the line of duty.¹

Police nationally shoot and kill about 1,000 people every year, he said in a recent interview, and he believes that number has been fairly constant for some time. What has changed is the unrelenting presence of social media and the 24-hour news cycle, he said. The 2014 shooting of Michael Brown in Ferguson, Missouri, was "a watershed event in terms of focusing public and media attention on policing and police violence as a social problem, a social issue," he said.

Has the increased public attention increased the stress on officers working the streets? "The pressure officers feel because of social media and the 24-hour news cycle is that they never get a break," Klinger said. They don't get a break from the coverage, and they don't get a break when it comes to how an incident is handled.

Klinger isn't sure how much police behavior in the field has changed, if at all. "What we do know is we have more prosecutions. What we do know is more cops have gone to jail or prison in the last few years than in previous years. And is that because prosecutors are being more aggressive, or is it because something in the last few years is sick in American policing and we have crappy shootings that we didn't have a generation ago?" It is, he concluded, an empirical question without a definitive answer.

Note

1. David Klinger, "Police Responses to Officer-Involved Shootings," Final report to the National Institute of Justice, grant number 97-IJ-CX-0029, February 2002, NCJ 192286, <https://www.ncjrs.gov/pdffiles1/nij/grants/192286.pdf>.

project by the RAND Corporation. Researchers surveyed law enforcement agencies both in the United States and abroad to learn about the programs and practices that agencies use to prevent suicide among their employees. The survey looked at why the programs were adopted, how they vary from agency to agency, and what resources were involved in implementing them. The data collection is complete, with 117 agencies contacted and about 150 interviews conducted. Project researchers are currently publishing the results in several journals.

The strategic plan cites a statement from the 2014 President's Task Force on 21st Century Policing that emphasizes the need for programs on officer health and wellness:⁸

The “bulletproof cop” does not exist. The officers who protect us must also be protected against incapacitating physical, mental, and emotional health problems, as well as against the hazards of their jobs. Their wellness and safety are crucial for them, their colleagues and their agencies, as well as the well-being of the communities.

Although the task force report focused on police officers and their communities, the NIJ strategic plan noted that the “sentiment of wellness within the report is equally relevant for those who work in other parts of the criminal justice system, as well as those in custody.”

“We’re talking about the employees in criminal justice, inmates, and the families of officers and of inmates,” Ford said. When a police or corrections department says they are concerned with officer safety, “we go up one level to be broader and more comprehensive. Our goal is to translate the body of research into something that is applicable to the entire criminal justice community.”

About the Author

Jim Dawson is a forensic science writer and contractor with Leidos.

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8. President's Task Force on 21st Century Policing, *Final Report of the President's Task Force on 21st Century Policing* (Washington, DC: U.S. Department of Justice, Office of Community Oriented Policing Services, May 2015), 62.

NCJ 252732



RESEARCH WILL SHAPE THE FUTURE OF PROACTIVE POLICING

BY PAUL A. HASKINS

Proactive policing — strategies and tools for stopping crime before it occurs — appears to be here to stay, but important challenges persist. Some relate to constructing more reliable measures of effectiveness — for instance, how to measure a strategy's impact on crime when residents are reluctant to report it. Others are inherent in the approach, such as how to harmonize preventive strategies with community interests and protection of residents' legal rights.

Research already in hand has persuaded leading criminologists that certain types of proactive policing, such as aspects of hot spots policing, can curb crime, especially in the near term and in targeted areas. Particularly in larger cities, law enforcement is leveraging powerful computer-based algorithms that analyze big data to isolate crime breeding grounds (place-based policing) and to pinpoint likely future offenders (person-based policing).

Where proactive policing theory and practice will lead law enforcement in coming years, researchers note, will depend in part on efforts to address research-related concerns such as:

- A need for wider use of more exacting research designs, such as randomized controlled trials (RCTs), to better evaluate the merits and replicability of promising policing methods.
- A need for more accurate measures of program success or failure, given recognition of the insufficiency of conventional measures. (For example, a low rate of calls for police service could reflect residents' reluctance to report crime, rather than low crime.)
- Continued progress in convincing law enforcement leaders to advance high-utility research by executing protocols with fidelity to the model and adopting scientifically sound best practices.

At the same time, proactive policing approaches face the challenge of maintaining or strengthening law enforcement's connections with the community — by continually building trust and working to institutionalize respect for residents' legal rights while targeting violent offenders. One concern related to community interests is the potential for data analysis algorithms to skew proactive policing activities in communities.

“The promise of proactive policing strategies makes it critical that we understand their effectiveness through rigorous and replicable research.”

If past is prologue, NIJ will remain a principal driver of proactive policing research nationally by funding and managing empirical studies along the spectrum of proactive policing approaches. As NIJ Director David B. Muhlhausen observed in a January 2018 column, “The promise of proactive policing strategies makes it critical that we understand their effectiveness through rigorous and replicable research.”¹

Muhlhausen acknowledged the impact of a recent comprehensive study of proactive policing by the National Academies of Sciences, Engineering, and Medicine, funded in part by NIJ. The November 2017 National Academies final report, *Proactive Policing: Effects on Crime and Communities*, concluded after scouring the field of research that certain proactive policing methods are succeeding at reducing crime.² At the same time, the National Academies pointed to extensive gaps in proactive policing research as well as evidence that certain once-promising proactive policing approaches have not proved to be effective.

Calling recent decades a “golden age” of policing research, the National Academies report urged intensified research assessing the promise of proactive policing. “Much has been learned over the past two decades about proactive policing practices,” the report states. “But, now that scientific support for these approaches has accumulated, it is time for greater investment in understanding what is cost effective, how such strategies can be maximized to improve the relationships between the police and the public, and how they can be applied in ways that do not lead to violations of the law by police.”

Defining Proactive Policing

The term “proactive policing” encompasses a number of methods designed to reduce crime by using prevention strategies. By definition, it stands in contrast to conventional “reactive” policing, which for the most part responds to crime that has occurred. The National Academies report underscored that the intended meaning of proactive policing is broad and inclusive: “This report uses the term ‘proactive policing’ to refer to all policing strategies that have as one of their goals the prevention or reduction of crime and disorder and that are not reactive in terms of focusing primarily on uncovering ongoing crime or on investigating or responding to crimes once they have occurred. Specifically, the elements of proactivity include an emphasis on prevention, mobilizing resources based on police initiative, and targeting the broader underlying forces at work that may be driving crime and disorder.”

The report identified four categories within proactive policing: place-based, person-focused, problem-oriented, and community-based. Exhibit 1 presents descriptions of these classifications and the primary policing strategies that fall under each.

In the field, however, the lines between categories of proactive policing are often blurred. For example, William Ford, an NIJ physical scientist and senior science advisor, pointed out that a hot spots policing program — focusing resources on small, concentrated crime zones — may employ aspects of one or more other proactive policing approaches such as focused deterrence, community policing, or problem-oriented policing. That complexity can complicate evaluations of any one policing method.

History and NIJ’s Role

To discern NIJ’s role in proactive policing research going forward, Ford said, “Attention must be paid to the past, because we paved that ground.”

Early iterations of experimental proactive policing were innovative foot patrols focused on preventing crime and assessing the impact of patrolling squad cars. In the early 1970s, the Kansas City Preventive Patrol Experiment yielded the fresh insight that routine patrolling in police cars was of limited value in preventing crime and making residents feel safer.

In the 1980s, studies of the source of 911 calls in Minneapolis helped lay the cornerstone of place-based policing, including hot spots techniques. (See the related article “From Crime Mapping to Crime Forecasting: The Evolution of Place-Based Policing” on page 96.)

In the 1990s, community policing took root, said Joel Hunt, NIJ senior computer scientist. By the 2000s, computers were supplanting push pins and wall-mounted crime maps. Data-driven policing strategies — typically employing algorithm-controlled electronic maps — began to emerge in the same decade, with extensive NIJ support. Focused deterrence, a strategy designed to discourage crime by confronting high-risk individuals and convincing them that punishment will be certain, swift, and severe, is a product of the current decade.

Collectively, research to date has discerned a stronger overall crime-reduction effect from place-based strategies — such as certain hot spots policing approaches — than from person-based strategies such as focused deterrence, Hunt noted. However, a recent meta-analysis of focused deterrence strategies by Anthony A. Braga, David Weisburd, and Brandon Turchan found that interventions that targeted gangs/ groups and high-risk individuals were most effective in reducing crime.³ The authors concluded that “the largest impacts are found for programs focused on the most violent offenders.”⁴

One example of a person-focused program initially falling short of expectations is the Strategic Subjects List pilot program implemented by the Chicago Police Department in 2013. The list consisted of 426 individuals calculated to be at highest risk of gun

violence. The design called for interventions aimed at reducing violence by and toward those on the list, with a resultant reduction in the city homicide rate. An NIJ-sponsored study by RAND Corporation researchers found, however, that the Chicago pilot effort “does not appear to have been successful in reducing gun violence.”⁵

New NIJ funding is aimed at clarifying the factors informing commercial algorithms that drive certain proactive approaches, Hunt said. Work also continues on police legitimacy — establishing trust in the community’s eyes — and procedural justice, which falls under community policing.

Pushing for More Rigorous Research Methodologies

The National Academies and NIJ agree on the need for enhanced experimental program evaluations through rigorous RCTs. However, the conclusion by the National Academies that focused deterrence policy is effective is solely based on a number of quasi-experiments. RCTs randomly divide an experiment’s subjects into groups that receive the experimental treatment and control groups that do not. There is broad agreement that RCTs are generally the best methodology for establishing causality. To improve the scientific rigor of policing research, NIJ’s 2018 policing research solicitation made it clear that projects employing RCTs would be favored going forward.

As NIJ Director Muhlhausen explained during the 2017 Annual Meeting of the American Society of Criminology, “RCTs are a powerful tool in understanding what works and is scalable across contexts. When we know what works, we can fund what works.”

RCTs are valued as more reliable scientific methods not only for evaluating whether new policing methods work and can be replicated, but also for testing previous findings of less precise methods. For example, with support from NIJ and the Bureau of

Exhibit 1. The Four Categories of Proactive Policing

Category	Description	Types
Place-Based	Preventing crime by using data to isolate small geographic areas where crime is known to be concentrated.	<p><i>Hot Spots Policing/Crime Mapping</i> Policing focused on small areas where crime is clustered, using maps and geographic information systems to identify clusters of crime. Statistical software may be used to distinguish random clusters of crime from hot spots.¹</p> <p><i>Predictive Policing</i> Using advanced analytics and intervention models to predict where crime is likely to happen.²</p>
Person-Focused	Preventing crime by using data to identify strong concentrations of crime within small populations.	<p><i>Focused Deterrence</i> A strategy that targets specific criminal behavior by a small number of offenders, who are confronted and informed that continued criminal behavior will not be tolerated.³</p> <p><i>Stop, Question, and Frisk/Stop and Frisk</i> The practice of officers stopping and detaining individuals if they have reasonable suspicion that the person is committing or about to commit a crime.⁴</p>
Problem-Oriented	Identifying underlying social causes of crime and tailoring solutions to those causes.	<p><i>Problem-Oriented Policing</i> An analytics method used by law enforcement to develop strategies that prevent and reduce crime by targeting underlying conditions that lead to recurring crime. The method calls for law enforcement to employ a range of approaches to problems and evaluate their impact.⁵</p>
Community-Based	Using community resources to identify and control sources of crime.	<p><i>Community-Oriented Policing</i> A philosophy promoting strategies that support systematic use of community partnerships and problem-solving techniques to proactively address conditions giving rise to crime.⁶</p> <p><i>Police Legitimacy</i> Building public trust and confidence in law enforcement so that the public accepts police authority and believes police actions are justified and appropriate.⁷</p> <p><i>Procedural Justice Policing</i> An antecedent to police legitimacy; the idea of perceived fairness in law enforcement processes, involving a chance to be heard and the perception that police are neutral, trustworthy, and treat individuals with dignity and respect for their rights.⁸</p> <p><i>Broken Windows Policing</i> Intense enforcement against minor offenses, such as broken windows, on the theory that neighborhoods marked by social and physical disorder suggest resident indifference to crime and invite more predatory crime.⁹</p>

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Justice Assistance, researchers employed RCTs to assess the effectiveness of a focused deterrence program model previously used to break up a drug market in a small Southern city. The original research, employing a quasi-experimental technique limited to that single site, found the treatment to be effective. But the subsequent RCT, using seven different areas, did not validate that finding: The treatment was found to be ineffective in three of five sites where implemented, while two sites were unable to implement it, researchers reported in 2017.⁶

NIJ scientists caution that RCTs, for all their benefits, are not a magic bullet for all experimental settings. "There are limits on situations in which they can be administered effectively," said Hunt. For example, he said, "I can't randomize where incidents occur, only the treatment, and then only in some cases." Further, police chiefs can be reluctant to give a perceived treatment "benefit" to one group while denying it to control groups, Hunt added. RCTs can also be

complex, partly because after the random assignment of subjects, researchers must examine key variables to ensure that treatments and control groups are properly split on those variables (e.g., age, race, and gender). RCTs can also be relatively costly to administer. However, RCTs are still the best research design available for establishing causality. NIJ strives to do RCTs wherever possible.

Representative Research in Process

NIJ's 2017 grant solicitation statement in the policing strategies and practices area called for research on place- or person-based projects that can reduce crime "with minimal negative collateral consequences," such as heightened community distrust of law enforcement. The 2017 solicitation thus embodied the NIJ five-year strategic plan's emphasis on evaluating community engagement strategies and building community trust and confidence in law enforcement.

Two projects funded by NIJ in 2017 focus on evaluating the community impact of hot spots policing and problem-oriented policing initiatives, including development of new measures of law enforcement effectiveness. They are:

1. A study of the impact of different strategies within hot spots on citizens' perceptions of police in a Midwestern university town. The purpose is to demonstrate that police-community relations and police legitimacy can be strengthened, even in a hot spots policing environment.
2. A 30-month RCT study of 100 hot spots in two medium-size Southeastern cities. The study is using community surveys designed to move “beyond unreported crime to also measure perceptions of safety, police legitimacy, and collective efficacy” (an overall community-police relations measurement). On the law enforcement side, the study team is also examining officer morale, officers' perceptions of their roles, police-community relations, and the program's impact on law enforcement policies and practice.

The 30-month study, with its call for new measures of the impact and effectiveness of policing methods, reflects a concern that simplistic measures of law enforcement success, such as number of arrests or citizen calls for service, are often misleading.

Demystifying Policing Algorithms

Algorithms inform law enforcement strategies by sorting and analyzing sometimes massive amounts of crime data to identify the highest risk places and individuals. NIJ currently supports research measuring the effectiveness and efficiency of commercial algorithms that are marketed to law enforcement agencies for crime mapping and related approaches. At the same time, NIJ scientists are comparing a naive algorithm model to contest entries from the Real-Time Crime Forecasting Challenge. (A naive model is one that assumes what happened before is what will happen next; e.g., the model forecasts that crime will occur this month in the place it occurred last month.)

Hunt, who is leading that in-house study, said commonplace scientific concerns with algorithm-dependent law enforcement strategies include the quality of data going in, how the data are introduced to the algorithm, and “what we do with the numbers at the back end.” Hunt observed that a crime data sample — and thus data-dependent algorithm output — can be biased when, for instance, community members no longer report crime.

Indeed, fewer than half of all violent and property crimes are reported to the police, according to the latest National Crime Victimization Survey.⁷ Similarly, homicide clearance rates have reached near-record lows in several major U.S. cities due to increasing gang violence, witness intimidation, and a lack of community cooperation with law enforcement.⁸ “Mutual cooperation between the police and the community is essential to solving crimes,” said NIJ Director Muhlhausen. “Unfortunately, some community members refuse to cooperate with criminal investigations, even though law enforcement is legitimately trying to serve and protect their community.”

Hunt said NIJ is pushing for greater transparency on the scientific foundations of support for commercial policing algorithms — that is, less of a “black box” approach by vendors. Academic researchers YongJei Lee, SooHyun O, and John E. Eck, the three members of a team that was among the winners of NIJ's 2016 Real-Time Crime Forecasting Challenge, wrote that a lack of transparency and a “lack of theoretical support for existing forecasting software” are common problems with proprietary hot spots forecasting products.⁹

Procedural Justice

The National Academies report on proactive policing pointed to procedural justice as one of the methods lacking adequate research evidence to support — or to preclude — its effectiveness. NIJ is working to grow that evidence base through projects such as an ongoing police-university research partnership

in a medium-size Mid-Atlantic city, funded in 2016. The research was designed to use surveys and other techniques to gauge police and citizen perceptions of procedural justice issues and to forge a better understanding of the benefits of procedural justice training, body-worn cameras, and the mechanisms of public cooperation, trust, and satisfaction.

One recent NIJ-supported study casts new doubt on the effectiveness of procedural justice training in a specific police application. The Seattle Police Department conducted training to “slow down” the thought processes of police officers during citizen encounters to reduce negative outcomes. The selected officers were deemed to be at risk because (1) they had worked in hot spots or other high-crime city areas, and (2) they had been involved in incidents in which they were injured or used force, or where a complaint had been filed about the officer or the incident.

As reported in NIJ’s CrimeSolutions.gov, a central web resource to help practitioners and policymakers learn what works in justice-related programs and practices, the Seattle Police procedural justice training initiative was rated as having “no effects,” positive or negative, on procedural justice in the community.¹⁰ The rating was based on a study¹¹ utilizing an RCT of the program. The RCT found no statistically significant differences between the treatment group and the control group in the percentage of incidents resulting in an arrest, the number of times force was used, the number of incidents resulting in citizen complaints, and other key measures.

One challenge for research on justice-focused policing methods such as procedural justice and police legitimacy — as important as they may be to the ultimate goal of respecting citizens’ rights under law — has been distinguishing their impact from that of routine policing. Brett Chapman, an NIJ social science analyst, said of procedural justice generally that although the work is important, one “challenge is trying to demonstrate how it is dramatically different from what police have been doing for years.”

Research Quality Depends on Execution

Even if an experimental design is flawless, outcome quality can depend on agency cooperation and performance. For example, an NIJ-sponsored 2012 research report on a randomized trial of broken windows policing in three Western cities concluded that the results were negatively affected by problematic execution by the responsible law enforcement agencies.¹²

NIJ operates a national initiative designed to build law enforcement agency research competence. The Law Enforcement Advancing Data and Science (LEADS) Scholars program develops the research capability of midcareer law enforcement professionals from agencies committed to infusing science into their policy and practice. LEADS scholars learn the latest research developments and carry that knowledge to the field.

Proactive Policing and the Fourth Amendment

On the street, the impact of proactive policing methods that involve law enforcement confronting suspects will be measured against the rule of law, including the Fourth Amendment’s protections against unreasonable search and seizure. The boundaries concerning unlawful treatment of suspects by law enforcement are not always distinct. In 2000, the Supreme Court held in *Illinois v. Wardlow*¹³ that police may conduct a street stop of a suspect with a lower threshold of reasonable suspicion if the stop occurs in a high-crime area. Thus, an individual’s particular location may effectively reduce his or her rights in a law enforcement interaction. Implicit in that location-specific adjustment of suspects’ rights is the Court’s recognition that, in those crime-prone areas, innocent citizens are at heightened risk of becoming victims of crime.

Rachel Harmon, a University of Virginia law professor, and a colleague pointed out in “Proactive Policing and the Legacy of Terry,”¹⁴ “So long as police focus

on high crime areas, they can effectively lower the behavior-based suspicious activity demanded for each stop.” Yet as scholar Andrew Guthrie Ferguson and a colleague observed in 2008,¹⁵ the Supreme Court has not defined a high-crime area for Fourth Amendment purposes.

Whether or to what extent a law enforcement strategy can exist in harmony with Fourth Amendment protections will depend on program particulars. In *Floyd v. City of New York*,¹⁶ a federal district court held in 2013 that New York City’s stop and frisk policy at the time represented unconstitutional profiling and barred the practice. But the *Floyd* proscription was limited to excessive aspects of stop and frisk in New York.

David L. Weisburd, an author of the National Academies study and the executive director of the Center for Evidence-Based Crime Policy, noted but took exception to a narrative he sees being advanced by some scholars and commentators that deterrence-based policing strategies make constitutional violations inevitable. In a 2016 paper in the *University of Chicago Legal Forum* specifically referencing hot spots policing, Weisburd posited “that hot spots policing properly implemented is likely to lead to less biased policing than traditional strategies. Moreover, there is little evidence that hot spots policing per se leads to abusive policing practices.”¹⁷

Rachel Harmon and her colleague sounded a similar theme, relative to stop and frisk policies, in her 2017 article referenced above: “Although the proactive use of stops and frisks may make constitutional violations more likely, it seems feasible to design a proactive strategy that uses stops and frisks aggressively and still complies with constitutional law.”¹⁸

The Harmon article further argued that proactive strategies such as hot spots and preventive policing can avoid constitutional peril “by narrowing proactive policing geographically rather than demographically.” Thus, in Harmon’s view, “the same focused strategies that are most likely to produce stops that satisfy the Fourth Amendment may also be the most likely to be carried out effectively and without discrimination.”¹⁹

Weisburd, in his 2016 paper, identified a need for new proactive programming that aspires to broad justice impacts. He called for “a new generation of programs and practices that attempts to maximize crime control and legitimacy simultaneously.”²⁰ The contemporary NIJ-supported, community-focused research noted above seeks new pathways for harmonizing proactive policing strategies with progress on community justice values.

About the Author

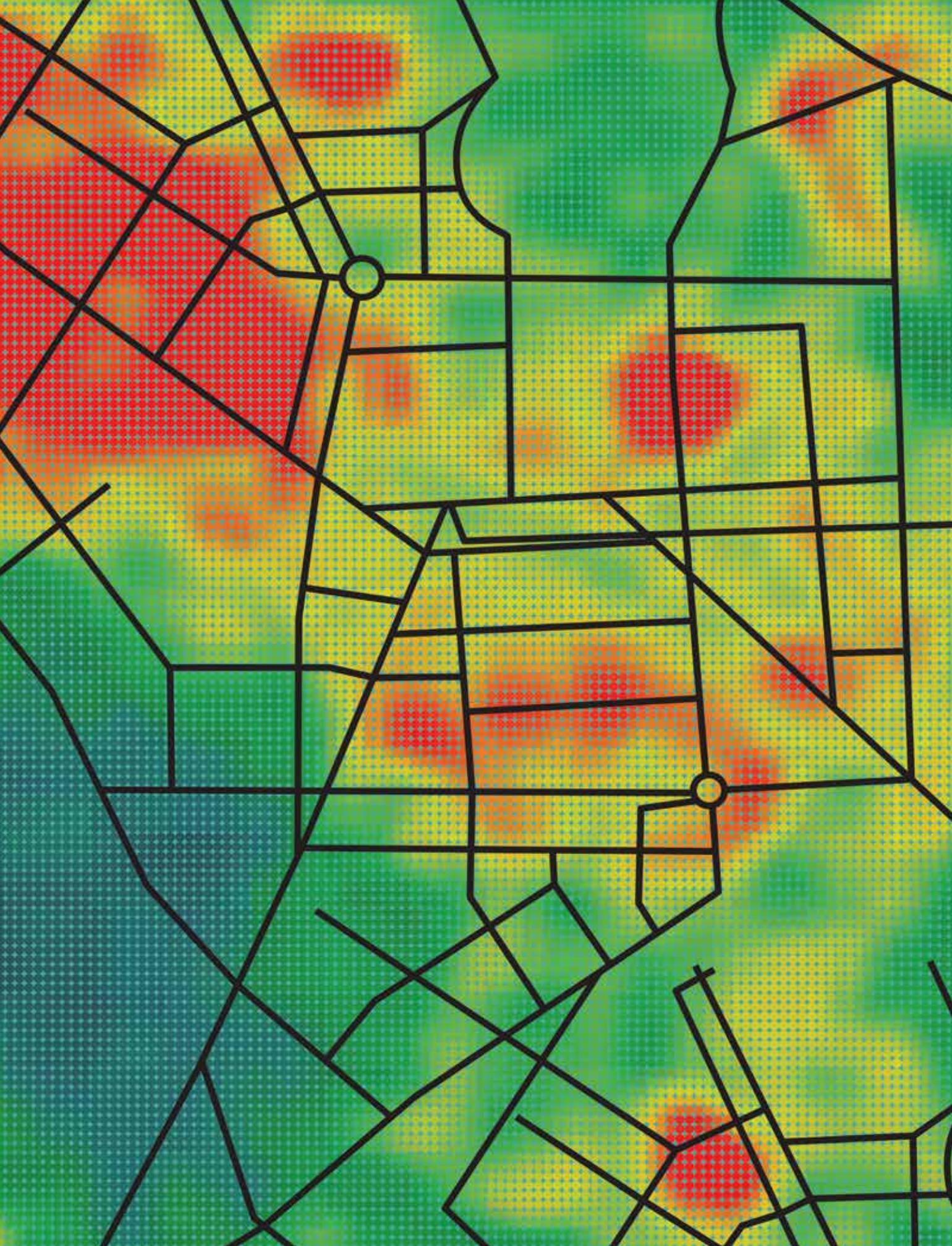
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FROM CRIME MAPPING TO CRIME FORECASTING: THE EVOLUTION OF PLACE-BASED POLICING

BY JOEL HUNT

Mapping law enforcement report data can be an effective way to analyze where crime occurs. The resulting visual display can be combined with other geographic data (such as the locations of schools, parks, and industrial complexes) and used to analyze and investigate patterns of crime and help inform responses.

The past decade, in particular, has seen advances in analytical capabilities within the criminal justice community, making it possible to add more geographic and social dimensions to statistical analyses to forecast where crimes are likely to occur.

NIJ has been a long-time investor in research on mapping and analysis. Over the years, the Institute has funded projects that explore, evaluate, and seed analytical techniques and technology to support law enforcement agencies that use place-based policing practices and strategies to help answer the question, “How do we best reduce crime and improve public safety?”

This article follows the field's evolution — from crime mapping to crime forecasting (and, in some cases, crime prediction) — and discusses NIJ's investments in research and future directions.

A Brief History

In 1829, Adriano Balbi and André Michel Guerry produced maps showing the relationships between educational level and violent and property crime in France. This is often cited as the first instance of crime mapping.¹ Following this work, Joseph Fletcher, in 1849, and Henry Mayhew, in 1861, produced maps that showed rates of male incarceration and county crime, respectively.²

In the early 20th century, Clifford Shaw and Henry McKay mapped thousands of incidents of juvenile delinquency and analyzed the relationships between delinquency and various social conditions.³

In the 1950s, Jane Jacobs examined the built (urban) environment and the needs of city dwellers.⁴ In her work, she introduced constructs that are still used

Over the years, NIJ has funded projects that explore, evaluate, and seed analytical techniques and technology to support law enforcement agencies that use place-based policing practices and strategies to help answer the question, “How do we best reduce crime and improve public safety?”

in today’s place-based research, such as “eyes on the street” and “social capital.” Although Jacobs did not attempt to forecast crime, her work led to later research positing that crime has spatial patterns and thus should be able to be forecast.⁵

In the 1970s, criminologists began to emphasize the importance of place. Lawrence Cohen and Marcus Felson’s routine activities theory (RAT) described how routine activities affect crime.⁶ According to RAT, for a crime to occur, three things must coincide at the same place and time: a motivated offender, a suitable target, and a lack of capable guardianship. Due to the consistency in our routines, Cohen and Felson argued, we should be able to forecast crime: “The spatial and temporal structure of routine legal activities⁷ should play an important role in determining the location, type and quantity of illegal acts occurring in a given community or society.”⁸

Similarly, Paul and Patricia Brantingham put forward the environmental criminology theory, positing that crime is a complex event in which four things intersect at one time: a law, an offender, a target, and a place.⁹ They defined this fourth dimension — place — as a discrete location where the other three dimensions intersect and provided seven propositions describing

how, where, and why people decide to commit crimes.¹⁰ These propositions provide a framework to argue that crimes may spatially cluster because either a criminal has already spent time and energy staking out a neighborhood (a form of “capital”) or the learned behavior may result in a peripatetic cycle. The propositions lead to the idea that place — not people — is the key element in crime. As such, the Brantinghams believe that “it should be possible to predict the spatial distribution of crime and explain some of the variation in volume of crime between urban areas and between cities.”¹¹

In 1979, Herman Goldstein proposed a problem-oriented policing approach.¹² This approach advocated for law enforcement officers to follow a scanning, analysis, response, and assessment process (now known as the SARA approach) to identify, analyze, and solve problems.¹³ In the 1990s,¹⁴ Compstat emerged as an alternative policing practice to reduce crime.¹⁵ Made famous by then-Chief Bill Bratton while at the New York City Police Department, Compstat is a truly data-driven approach to creating accountability for the police department. Although these practices and strategies did not necessarily rely on criminological theory, they used statistical analysis to solve problems associated with crime, indicating that they relied on either spatial or temporal patterns.

As these place-based theories and policing approaches continued to take shape, researchers began to test them. For example, Lawrence Sherman, Patrick Gartin, and Michael Buerger — with support from NIJ — examined 323,979 calls to the Minneapolis Police Department between December 15, 1985, and December 15, 1986, to test the spatial premise behind RAT.¹⁶ Using actual addresses and intersections, the research team found that 50% of all calls originated from only 3% of all possible locations. Sherman also found a greater concentration of crime around microplaces than around individuals,¹⁷ which led to the question, “Why aren’t we thinking more about wheredunit, rather than just whodunit?”¹⁸ These results marked the beginning of hot spots policing.¹⁹

Predictive Policing: The Role of Crime Forecasting in Law Enforcement Operations

Smart, effective, and proactive policing is clearly preferable to simply reacting to criminal acts. Although there are many methods to help law enforcement respond to crime and conduct investigations more effectively, predicting where and when a crime is likely to occur — and who is likely responsible for previous crimes — has gained considerable currency. Law enforcement agencies across the United States are employing a range of predictive policing approaches.

With support from NIJ, the RAND Corporation developed a reference guide for law enforcement agencies interested in predictive policing. *Predictive Policing: The Role of Crime Forecasting in Law Enforcement Operations* offers a focused examination of the predictive techniques currently in use, identifies the techniques that show promise if adopted in conjunction with other policing methods, and shares findings and recommendations to inform future research and clarify the policy implications of predictive policing. To read the guide, go to NIJ.ojp.gov, keyword: 243830.

From 1989 to 2007, researchers examined crime-specific responses, the effects of foot patrols, and trajectories of crime. Researchers also tested problem-oriented policing in Madison, Wisconsin; Baltimore, Maryland; and Newport News, Virginia, in the 1980s²⁰ and began testing Compstat and community-oriented policing in the 1990s and early 2000s. Today, we still have problem-oriented policing, Compstat, community-oriented policing, and hot spots policing, along with intelligence-led policing, community problem-oriented policing, and many other variations and combinations.

NIJ's Critical Role

During the 1980s, NIJ funded evaluations of place-based policing strategies, including the research by Sherman and colleagues as well as similar research in Chicago. NIJ also began funding the development of technologies that were later incorporated into crime-mapping software.²¹

In 1997, NIJ established the Crime Mapping Research Center, which surveyed law enforcement departments to determine how they used analytic mapping. The center began developing training programs to enhance departments' capability to use spatial maps and data sets. From 1997 to 2014,

NIJ funded the development of CrimeStat software to help practitioners and academics conduct spatial analyses.²²

In the early 2000s, NIJ started to expand from evaluating place-based policing practices and strategies (e.g., hot spots policing) to exploring the statistical techniques used to forecast and predict crime and how that affects the effectiveness and efficiency of place-based policing practices and strategies. In 2008, Bratton — who by then was chief of the Los Angeles Police Department — began working with the acting directors of NIJ and the Bureau of Justice Assistance on a new approach called “predictive policing.”²³ As a result, in 2009 NIJ funded seven agencies to create predictive policing models in their jurisdictions. In 2011, NIJ invited these agencies to propose implementation plans for the models, which would then be evaluated. NIJ funded models developed by the Chicago Police Department and the Shreveport (Louisiana) Police Department and also funded the RAND Corporation to provide technical assistance and evaluate the two models. (See sidebar, “Predictive Policing: The Role of Crime Forecasting in Law Enforcement Operations.”)

RAND's evaluation of the Shreveport predictive policing model showed three key successes.²⁴ First,

the model improved community relations, which increased the community's willingness to interact with the police and led to better tips. Second, the Shreveport Police Department found that the predictions were actionable, even though they were not truly predictive. Finally, the model improved actionable intelligence — it led to better skills among analysts, which led to better pattern recognition and more relevant and timely data.²⁵

As these awards were coming to a close, NIJ began releasing solicitations for research to test geospatial policing strategies and explore their relationship to criminological theories. For instance, NIJ funded an evaluation of risk terrain modeling in six cities.²⁶ The evaluation found that conjunctive analysis (an enhanced version of risk terrain modeling) could forecast areas that were at greater risk of a range of future crimes across five cities. The models also identified environmental factors that played a role in these areas, thus allowing law enforcement to develop strategies to address them.

NIJ-funded evaluations of near-repeat (NR) residential burglaries found that departments are likely to overestimate the number of NR burglaries and thus need to temper their expectations. The evaluations also found that providing notifications to people within likely NR regions leads to little or no reduction in NR burglaries; however, communities within the jurisdictions still favored being notified.²⁷

NIJ also funded an operationally realistic evaluation of the predictive policing model. This evaluation was NIJ's first place-based, randomized controlled trial to explore the effect of varying police patrol strategies on the rates of violent crime and property crime. Examining the strategies of marked patrols, unmarked patrols, and an awareness patrol (having knowledge of high-crime areas but no dedicated patrol there), the researchers found that a marked unit may have a modest effect on property crime, but they found no other effects for property crime or violent crime.²⁸

In 2013, NIJ supported research that compared the effectiveness of different crime forecasting software. The most effective software was then used to conduct

a randomized controlled trial in Denver, Colorado, that tested the effects of a hot spots policing approach in forecast areas.²⁹ The research is ongoing.

In 2015, NIJ directed its attention to exploring the value of data to law enforcement. That year, NIJ funded research to create a flexible tool for departments to better understand the value of the data they collect. A major preliminary finding in this ongoing research is that the perceived value of data can vary widely within an office, even more than variations within and between entire police departments.

In 2016, NIJ released the Real-Time Crime Forecasting Challenge, which asked competitors to forecast where crime was likely to cluster in the future within the jurisdiction of the Portland (Oregon) Police Bureau. Competitors submitted forecasts for all calls for service, burglaries, street crimes, and motor vehicle thefts for the next week, two weeks, one month, two months, and three months. Initial analysis of the results seems to indicate that even the naive model can compete when there is enough crime to forecast. When crime is rare, however, even the more sophisticated models were unable to effectively or efficiently forecast crime. Additional analysis of the results is forthcoming.³⁰

Future Directions

So, what has changed in place-based policing over the years? The short answer is everything — and nothing.

Technology has played a critical role in advancing the field and has become so affordable that most, if not all, law enforcement departments can now afford electronic records and some version of mapping software. Technology has also provided the computational power needed to run data analyses and has enhanced the education of analysts. All of this has allowed departments and outside researchers to conduct more research.

But we are still trying to answer the original question: How do we best reduce crime? We have learned that

crime does cluster in hot spots. We have learned that there is stability in these hot spots over longer periods of time, but far less stability when looking at short periods. We also know that the public is leery and that we know very little about how these strategies affect individuals, their neighborhoods, and the larger community.

To help address the research gaps, NIJ recently changed direction in its funding of place-based — and to an extent, person-based — policing research. In 2017, NIJ asked research applicants to look beyond administrative data (e.g., crime rates, calls for service, and arrests) and instead develop and use metrics that consider the potential impacts of police practices and strategies on individuals, neighborhoods, communities writ large, and policing organizations (including individual officers) to determine their success or failure.

In 2018, grant applicants were asked to propose research exploring and evaluating the effects of police practices and strategies on officer safety, investigation outputs, and prosecution outcomes while still measuring the effects on crime rates. Additionally, NIJ wanted applicants to consider the effects of focused deterrence, persistence of hot spots, and intervening variables (e.g., neighborhood and police department characteristics). The goal is to provide a more holistic understanding of the impacts of place-based policing practices and strategies.

About the Author

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Notes

1. Borden D. Dent, "Brief History of Crime Mapping," in *Atlas of Crime: Mapping the Criminal Landscape*, ed. Linda S. Turnbull, Elaine Hallisey Hendrix, and Borden D. Dent (Phoenix, AZ: Oryz Press, 2000), 4-21.
2. Sharon Chamard, "The History of Crime Mapping and Its Use by American Police Departments," *Alaska Justice Forum* 23 no. 3 (Fall 2006): 1, 4-8.
3. Clifford Shaw and Henry D. McKay, *Juvenile Delinquency and Urban Areas: A Study of Rates of Delinquents in Relation to Differential Characteristics of Local Communities in American Cities* (Chicago: The University of Chicago Press, 1942); and Clifford R. Shaw, Frederick M. Zorbaugh, Henry D. McKay, and Leonard S. Cottrell, *Delinquency Areas: A Study of the Geographical Distribution of School Truants, Juvenile Delinquents, and Adult Offenders in Chicago* (Chicago: The University of Chicago Press, 1929).
4. Jane Jacobs, *The Death and Life of Great American Cities* (New York: Random House, 1961).
5. See Chamard's (2006) abridged history of Dent's (2000) chapter, "Brief History of Crime Mapping," for a more thorough pre-1970 history.
6. Lawrence E. Cohen and Marcus Felson, "Social Change and Crime Rate Trends: A Routine Activities Approach," *American Sociological Review* 44 no. 4 (1979): 588-608.
7. In macro-time, when and how we go to work, when and where we eat, and when and where we go for entertainment tend to be routines.
8. Cohen and Felson, "Social Change and Crime Rate Trends," 590.
9. Paul J. Brantingham and Patricia L. Brantingham, *Environmental Criminology* (Thousand Oaks, CA: Sage Publications, 1981).
10. Paul J. Brantingham and Patricia L. Brantingham, "Environmental Criminology," in *Classics of Criminology*, ed. Joseph E. Jacoby, Theresa A. Severance, and Alan S. Bruce (Long Grove, IL: Waveland Press, Inc., 2004), 61-70.
11. *Ibid.*, 69.
12. Although Goldstein originally proposed this in 1979, his 1990 book provides a stronger fundamental framework for problem-oriented policing (POP). Herman Goldstein, "Improving Policing: A Problem-Oriented Approach," *Crime and Delinquency* 25 no. 2 (April 1, 1979): 236-258.
13. Herman Goldstein, *Problem-Oriented Policing* (New York: McGraw-Hill, 1990).
14. Other practices and strategies began to emerge as well, such as community-oriented policing (COP). However, COP is predicated on community involvement in, at minimum, identifying the problem. Unlike POP and Compstat, identification of the problem may be driven more by community perceptions than by actual crime patterns. Community-Oriented Policing Services, <https://cops.usdoj.gov/about>.
15. Jerry Ratcliffe, *Intelligence-Led Policing* (Portland, OR: Willan Publishing, 2008).
16. Lawrence W. Sherman, Patrick R. Gartin, and Michael E. Buerger, "Hot Spots of Predatory Crime: Routine Activities and the Criminology of Place," *Criminology* 27 no. 1 (1989): 27-56.

17. Lawrence W. Sherman, "Hot Spots of Crime and Criminal Careers of Places," in *Crime and Place*, ed. John E. Eck and David Weisburd (Monsey, NY: Criminal Justice Press, 1995), 35-52. Weisburd similarly found that police in Seattle would have to target four times as many people as places to account for half of the crime incidents between 1989 and 2002. David Weisburd, "Place-Based Policing," *Ideas in American Policing* 9 (January 2008), Police Foundation Lecture Series.
18. Sherman, "Hot Spots of Crime," 36-37.
19. Spring and Block first used the term "hot spots" while identifying high-crime areas. James V. Spring and Carolyn R. Block, "Finding Crime Hot Spots: Experiments in the Identification of High Crime Areas," paper presented at the annual meeting of the Midwest Sociological Society, Minneapolis, MN, October 1988.
20. Center for Problem-Oriented Policing, "Mission and History of the Center for Problem-Oriented Policing," 2017.
21. More recent NIJ-funded geospatial tools — resulting from NIJ grant number 2009-SQ-B9-K101 — have been incorporated into ArcGIS software, perhaps the crime-mapping software most widely used by law enforcement agencies. See [NIJ.ojp.gov](https://www.ojp.gov), keyword: 2009-SQ-B9-K101.
22. CrimeStat IV (version 4.02) is the most recent version of CrimeStat, a spatial statistics program for the analysis of crime incident locations. (See <https://nij.ojp.gov/topics/articles/crimestat-spatial-statistics-program-analysis-crime-incident-locations>.) CrimeStat was developed by Ned Levine & Associates of Houston, Texas, under the direction of Ned Levine, Ph.D., and funded by grants from NIJ (grants 1997-IJ-CX-0040, 1999-IJ-CX-0044, 2002-IJ-CX-0007, and 2005-IJ-CX-K037).
23. Walter L. Perry, Brian McInnis, Carter C. Price, Susan C. Smith, and John S. Hollywood, *Predictive Policing: The Role of Crime Forecasting in Law Enforcement Operations* (Santa Monica, CA: RAND Corporation, 2013).
24. Priscillia Hunt, Jessica M. Saunders, and John S. Hollywood, *Evaluation of the Shreveport Predictive Policing Experiment* (Santa Monica, CA: RAND Corporation, 2014).
25. During this award, only an evaluation of the Shreveport experiment was produced.
26. However, it was fully evaluated in only five cities.
27. Elizabeth R. Groff and Travis A. Taniguchi, *Micro-Level Policing for Preventing Near Repeat Residential Burglary* (Washington, DC: Police Foundation, 2018); and Police Foundation, "Translating 'Near Repeat' Theory into a Geospatial Policing Strategy."
28. Jerry Ratcliffe website, "Philadelphia Predictive Policing Experiment," <https://www.jratcliffe.net/philadelphia-predictive-policing-ex>.
29. This research was originally going to be conducted in Columbia, South Carolina.
30. The results of the Challenge are available at [NIJ.ojp.gov](https://www.ojp.gov), keyword: forecasting challenge.

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