



A RESOURCE GUIDE TO

LAW ENFORCEMENT, CORRECTIONS, AND FORENSIC TECHNOLOGIES

OFFICE OF JUSTICE PROGRAMS
OFFICE OF COMMUNITY ORIENTED POLICING SERVICES



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AND FORENSIC TECHNOLOGIES**

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OFFICE OF COMMUNITY ORIENTED POLICING SERVICES

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MESSAGE FROM THE ATTORNEY GENERAL

The wave of technological advancement that has changed the lives of almost every individual, business, and institution in the Nation has also changed the world of criminal justice—from how we fight crime to how we manage law enforcement resources to the types of crimes we face. New technologies can help criminal justice agencies prevent crime, apprehend criminals, manage offender populations, and protect the public against the threat of terrorism.

Because the pace of technological development is so staggering, it is difficult for State and local criminal justice administrators to stay abreast of all the new developments and have the information needed to make critical purchasing and deployment decisions. To aid criminal justice administrators in this effort, the Office of Justice Programs has developed this comprehensive directory of the Justice Department operational, research, and funding programs to help State and local agencies use technology to fight crime and improve public safety.

This *Guide* seeks to provide helpful information to law enforcement, corrections, and forensic science professionals as they evaluate, acquire, and use equipment and technology. It is my hope that this tool will increase our effectiveness and reinforce our mission to enforce the law vigorously, guaranteeing rights for the advancement of all Americans.

John Ashcroft
Attorney General

PREFACE

In 1984, the Office of Justice Programs (OJP) was created to provide Federal leadership in developing the Nation's capacity to prevent and control crime, administer justice, and assist crime victims. OJP pursues its missions by forming partnerships with other Federal, State, and local agencies as well as national and community-based organizations to develop, operate, and evaluate a wide range of criminal and juvenile justice programs. OJP is dedicated to comprehensive approaches that empower communities to address crime, break the cycle of substance abuse and crime, combat family violence, address youth crime, hold offenders accountable, protect and support crime victims, enhance law enforcement initiatives, respond to terrorism, and support advancements in adjudication. OJP also works to reduce crime in Native-American communities, enhance technologies within the criminal and juvenile justice systems, and support State and local efforts through technical assistance and training.

The Office of Community Oriented Policing Services (COPS) was authorized by Congress in the Violent Crime Control and Law Enforcement Act of 1994 and began operations in October of that year. The primary goals of the COPS Office have been to promote community policing and to add at least 100,000 officers to the streets. The original commitment was to provide \$8.8 billion over the period from 1994 to 2000. Community policing is an approach to crime prevention that promotes and supports organizational strategies to address the causes and reduce the fear of crime and social disorder through problem-solving tactics and community-police partnerships.

This *Guide* has been created to provide a useful, focused picture of OJP and COPS Office activities in the field of law enforcement, corrections, and forensic science technology. The *Guide* is designed for local administrators who need a ready reference to help them make informed decisions when acquiring current and emerging technologies. Users of this *Guide*—including police chiefs, sheriffs, prison wardens, and members of city/county/State legislative or administrative bodies charged with overseeing law enforcement or corrections agencies—will find reliable, up-to-date information and sources for answers to a wide range of questions.

To receive the maximum value from this *Guide*, the user will need to understand the basic organization of OJP and the COPS Office and their activities. Thus, the best sources of information, funding, partnerships, and other resources will be more accessible. OJP Offices and Bureaus are listed below. More detailed descriptions can be found in appendix A.

OJP is composed of five Bureaus:

- Bureau of Justice Assistance (BJA).
- Bureau of Justice Statistics (BJS).
- National Institute of Justice (NIJ).

- Office of Juvenile Justice and Delinquency Prevention (OJJDP).
- Office for Victims of Crime (OVC).

OJP also has six Program Offices:

- Corrections Program Office (CPO).
- Drug Courts Program Office (DCPO).
- Executive Office for Weed and Seed (EOWS).
- Office for State and Local Domestic Preparedness Support (OSLDPS).
- Office of the Police Corps and Law Enforcement Education (OPCLEE).
- Violence Against Women Office (VAWO).

Finally, OJP and COPS have a wide range of funding streams (see appendix C) that local agencies can use to acquire equipment, systems, and training to better meet their goals.

Organization of the Guide

The main part of this volume presents an overview of the technology areas of most concern to the law enforcement, corrections, and forensic science communities. It consists of 19 chapters arranged in 4 sections:

- Section I. Officer Protection and Crime Prevention.** Chapters 1 through 8 cover protective equipment, restraint systems, firearms, less-than-lethal weapons, pursuit management, surveillance, offender monitoring/officer location, and concealed weapon and contraband detection.
- Section II. Public Safety in Critical Incidents.** Chapters 9 through 11 cover explosives detection and remediation, chemical and biological defense, and transportation infrastructure security.
- Section III. Communications and Information Technology.** Chapters 12 through 16 cover communications interoperability, biometric identification, information sharing and analysis, crime mapping, and electronic crime/cybercrime.
- Section IV. Investigative and Forensic Sciences.** Chapters 17 through 19 cover crime laboratory assistance, forensic technology research and development, and investigative sciences.

Each chapter includes a description of relevant technologies (equipment and devices, software, and related training) available to local law enforcement, corrections, and forensic science professionals and lists the following:

- **Potential Funding Sources.** Describes Federal funding programs and local and private sources. For each of the Federal sources listed, the reader is referred to appendix C for details and contact information.
- **Standards and Testing.** Lists any applicable standards that the technologies should meet to be considered safe or effective and any reports on testing done under these standards. This information can aid in deciding what equipment is appropriate for acquisition.
- **Research and Development Efforts.** Describes the new technologies being developed. Local jurisdictions may be interested in becoming involved in testing prototypes, new systems, and approaches.
- **Sources of Further Information.** Lists points of contact, publications and products, and Internet sites offering more detailed information.

Four appendixes provide additional useful information:

- **Appendix A: Office of Justice Programs (OJP).** Briefly describes the OJP Bureaus and Offices, their activities, and the programs each one administers.
- **Appendix B: Office of Community Oriented Policing Services (COPS).** Provides a brief history of the COPS program.
- **Appendix C: Office of Justice Programs and Office of Community Oriented Policing Services: Funding and Other Resources.** Includes descriptions of each of OJP's funding programs; describes other non-OJP resources; provides contact information, including telephone numbers and Web site addresses; and lists other helpful resources, including training and technology assistance.
- **Appendix D: Abbreviations and Acronyms.** Lists and defines the abbreviations and acronyms used throughout this *Guide*.

How To Order Publications

National Law Enforcement and Corrections Technology Center (NLECTC) publications may be requested by calling 800–248–2742; many of NLECTC's publications may also be downloaded from JUSTNET at www.nlectc.org.

Publications listed with an NCJ number may be ordered from the National Criminal Justice Reference Service (NCJRS) by calling 800–851–3420; some NCJRS publications may also be downloaded from the Justice Information Center at www.ncjrs.org.

Publications and products of the Office of Community Oriented Policing Services (COPS) may be requested by calling 202–514–2058; many COPS resources may be downloaded from <http://www.usdoj.gov/cops>.

How To Find Information at Internet Sites

Because the content and organization of Web sites change fairly often, the addresses or URLs listed in this *Guide* will take users to the top-level home page of the site. In general, to find more specific information, users will have three options: (1) explore the site using the *navigation buttons* available on its home page; (2) search the site using its *search engine* (usually a link from or button on the home page); or (3) look through a *site map* (a page that lists all pages on the site).

For example, the Bureau of Justice Statistics (BJS) home page is located at www.ojp.usdoj.gov/bjs. Headings on the home page lead to statistics on various topics, a “what’s new at BJS” page, and publications. However, for users who are not sure which heading will lead to the information they are seeking, BJS offers a search engine that looks through all the pages and publications on the site. In addition, a site map provides details of the pages available under each home page heading.

—The Editors

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SECTION



OFFICER PROTECTION AND CRIME PREVENTION

The primary concern of the law enforcement and corrections communities is the protection of both their officers and the public. A number of products that can physically protect officers are available or are being researched (see chapter 1). Restraining suspects and prisoners (chapter 2) also prevents dangerous situations from developing. When needed, firearms (chapter 3) are essential to officer safety—work has been and is being done to make officers’ weapons as safe and reliable as possible. In most confrontations with unruly or uncooperative suspects, a law enforcement or corrections officer needs alternatives to deadly force to subdue or capture the individuals or to otherwise control the situation and thus reduce the risk of harm to suspects and innocent bystanders (chapter 4). The same concerns that led to the development of less-than-lethal weapons have produced alternative means of managing high-speed car/vehicle pursuits (chapter 5). A variety of surveillance technologies (chapter 6) can be useful in the prevention and/or early detection of unlawful behavior. Location technologies allow the criminal justice system to monitor and, if needed, manage the behavior of offenders, and similar devices can be used to track officers and ensure their safety in potentially dangerous situations (chapter 7). The systems used to detect concealed weapons and contraband provide an extra margin of safety, and new types of detection devices are being developed (see chapter 8).

1. Protective Equipment

Officer protection is greatly enhanced with such products as ballistic helmets and visors, ballistic- and stab-resistant body armor, stab- and pathogen-resistant gloves, riot shields, and other items.

Potential Funding Sources

[May be used for personnel, training, equipment, technical assistance, research, development, or implementation (see appendix C for details and contacts).]

- Bulletproof Vest Partnership Grant Program (Bureau of Justice Assistance).
- Edward Byrne Memorial State and Local Law Enforcement Assistance Discretionary Grants (Bureau of Justice Assistance).
- Edward Byrne Memorial State and Local Law Enforcement Assistance Formula Grants (Bureau of Justice Assistance).
- Excess Defense Personal Property for Law Enforcement Activities (1033 Program) (National Institute of Justice and Department of Defense).
- Innovative Community Policing Grants (Office of Community Oriented Policing Services).
- Local Law Enforcement Block Grants Program (Bureau of Justice Assistance).
- Office of Science and Technology general and directed solicitations (National Institute of Justice).
- State and Local Law Enforcement Equipment Procurement Program (1122 Program) (Bureau of Justice Assistance).

Outside Sources of Funding:

Several States (including Maryland, Massachusetts, New York, North Carolina, and South Carolina) provide either complete or partial funding to agencies to purchase body armor.

The National “We Care” Foundation is a nonprofit organization that assists police officers who are required to purchase their own body armor but cannot afford to do so. For more information, call 972-492-4189.

Through the National Rifle Association (NRA), selected body armor manufacturers offer discounts on their products to law enforcement officers who are NRA members. For more information, call 703-267-1628, or access the Internet site at www.nrahq.org/safety/law.

Standards and Testing

- **Ballistic resistance.** The National Institute of Justice (NIJ) has developed performance standards for ballistic-resistant body armor and sponsors a voluntary compliance testing program administered by the National Law Enforcement and Corrections Technology Center (NLECTC). The *Police Body Armor Consumer Product List* contains a comprehensive listing, by manufacturer and threat level, of models of body armor that have been tested by NLECTC and have been found to comply with *Ballistic Resistance of Police Body Armor: NIJ Standard–0101.03*.

NIJ Standard–0101.03 has been in effect since 1987. A revised standard, 0101.04, updating some testing procedures and the ammunition used in the testing, was published in September 2000. Testing under this new standard was begun in October 2000.

Ballistic Resistant Protective Materials: NIJ Standard–0108.01, September 1985, covers ballistic-resistant materials found in shields, vehicle armor, and transparent materials. An update to this standard is planned in 2001.

- **Gloves.** *Comparative Evaluation of Protective Gloves for Law Enforcement and Corrections Applications: NIJ Test Protocol 99–114*, June 1999, covers puncture-, slash-, and pathogen-resistant gloves that provide protection from the dangers of needles, knives, and other sharp objects as well as bloodborne pathogens/body fluids. Testing under this standard was begun in August 2000.
- **Helmets.** *Ballistic Helmets: NIJ Standard–0106.01*, December 1981 (in the process of being revised) covers the quality and reliability of bullet-resistant ballistic helmets. Riot helmets and face shields are covered by *NIJ Standard–0104.02*. An update to this standard is planned in 2001.
- **Stab- and puncture-resistant armor.** *Stab Resistance of Personal Body Armor: NIJ Standard–0115.01*, effective September 2000, establishes the minimum performance requirements and test methods for the stab resistance of personal body armor intended to protect the torso against slash and stab threats. This standard is based on technical work performed by many organizations including the United Kingdom’s Police Scientific Development Branch and the U.S. Secret Service. Testing under this standard began in October 2000.

Research and Development Efforts

No research and development efforts are currently being pursued in this area.

Sources of Further Information

Contacts:

- Corrections Program Office: 800–848–6325 or askojp@ojp.usdoj.gov.
- Joint Program Steering Group: 703–351–8719.

- National Institute of Justice, Office of Science and Technology: 202-307-0645.
- National Law Enforcement and Corrections Technology Center–National: 800-248-2742 or asknlectc@nlectc.org.
- Office of Law Enforcement Standards: 301-975-2757 or oles@nist.gov.

Publications and Products:

- *Ballistic Helmets: NIJ Standard–0106.01*. December 1981.
- *Ballistic Resistance of Police Body Armor: NIJ Standard–0101.04*. September 2000.
- *Ballistic Resistant Protective Materials: NIJ Standard–0108.01*. September 1985.
- *Bureau of Justice Assistance Fact Sheet: The Bulletproof Vest Partnership*. 1999.
- *Choose To Survive: A Guide to Standards and Tests for Ballistic-Resistant Vest Performance and Reliability*. NIJ pamphlet, 1997.
- *Comparative Evaluation of Protective Gloves for Law Enforcement and Corrections Applications: NIJ Test Protocol 99–114*. June 1999.
- *Guide for the Selection of Commercial Explosives Detection Systems for Law Enforcement Applications*. NIJ Guide 100–99. NCJ 178913, September 1999.
- *Police Body Armor Consumer Product List*. NIJ, 1999 (updated regularly). Available online only. Download from JUSTNET at www.nlectc.org.
- *Riot Helmets and Face Shields: NIJ Standard–0104.02*. 1984.
- *Selection and Application Guide to Police Body Armor: NIJ Guide 100–98*. October 1998.
- *Stab Resistance of Personal Body Armor: NIJ Standard–0115.01*. September 2000.
- “Taking the Stab Out of Stabbings.” *TechBeat*, NLECTC, Spring 2000.
- *Test Protocol for Comparative Evaluation of Protective Gloves for Law Enforcement and Corrections Applications: NIJ Test Protocol 99–114*. June 1999.

Internet:

- Bulletproof Vest Partnership, Bureau of Justice Assistance: www.vests.ojp.gov.
- Bureau of Justice Assistance: www.ojp.usdoj.gov/bja.
- Corrections Program Office: www.ojp.usdoj.gov/cpo.
- Department of Defense: www.defenselink.mil.
- JUSTNET (National Law Enforcement and Corrections Technology Center system): www.nlectc.org.
- National Criminal Justice Reference Service: www.ncjrs.org.

- National Institute of Justice: www.ojp.usdoj.gov/nij.
- National Institute of Justice, Office of Science and Technology:
www.ojp.usdoj.gov/nij/sciencetech/welcome.html.
- Office of Community Oriented Policing Services: www.usdoj.gov/cops.
- Office of Justice Programs: www.ojp.usdoj.gov.
- Office of Law Enforcement Standards: www.oles.org.
- U.S. Secret Service: www.treas.gov/usss.

2. Restraint Systems

A variety of approaches are used to restrain prisoners in differing situations, including metal handcuffs and ankle shackles (and combinations of the two), nonmetallic handcuffs, belt/handcuff combinations, and belts with built-in stun technology.

Potential Funding Sources

[May be used for personnel, training, equipment, technical assistance, research, development, or implementation (see appendix C for details and contacts).]

- Edward Byrne Memorial State and Local Law Enforcement Assistance Discretionary Grants (Bureau of Justice Assistance).
- Edward Byrne Memorial State and Local Law Enforcement Assistance Formula Grants (Bureau of Justice Assistance).
- Innovative Community Policing Grants (Office of Community Oriented Policing Services).
- Local Law Enforcement Block Grants Program (Bureau of Justice Assistance).
- Office of Science and Technology general and directed solicitations (National Institute of Justice).

Standards and Testing

- *Metallic Handcuffs: NIJ Standard–0307.01*. 1982. Specifies requirements for user information, markings, workmanship, weight, dimensions, mechanical strength, salt spray corrosion resistance, and cheek-plate tamper resistance. National Law Enforcement and Corrections Technology Center–National and the Office of Law Enforcement Standards are working to revise the existing voluntary minimum performance standard for metallic handcuffs.

Research and Development Efforts

No research and development projects are currently being pursued in this area.

Sources of Further Information

Contacts:

- Corrections Program Office: 800–848–6325 or askojp@ojp.usdoj.gov.
- National Institute of Justice, Office of Science and Technology: 202–307–0645.

- National Law Enforcement and Corrections Technology Center–National: 800–248–2742 or asknlectc@nlectc.org.
- Office of Law Enforcement Standards: 301–975–2757 or oles@nist.gov.

Publications and Products:

- *Metallic Handcuffs Consumer Product List*. 6th Edition (Revised), September 1998. Lists handcuff models that comply with NIJ Standard–0307.01.
- *Metallic Handcuffs: NIJ Standard–0307.01*. 1982.
- “New Position on Positional Asphyxia.” *TechBeat*, NLECTC, Fall 1998.

Internet:

- Bureau of Justice Assistance: www.ojp.usdoj.gov/bja.
- Corrections Program Office: www.ojp.usdoj.gov/cpo.
- JUSTNET (National Law Enforcement and Corrections Technology Center system): www.nlectc.org.
- National Criminal Justice Reference Service: www.ncjrs.org.
- National Institute of Justice: www.ojp.usdoj.gov/nij.
- National Institute of Justice, Office of Science and Technology: www.ojp.usdoj.gov/nij/sciencetech/welcome.html.
- Office of Community Oriented Policing Services: www.usdoj.gov/cops.
- Office of Justice Programs: www.ojp.usdoj.gov.
- Office of Law Enforcement Standards: www.oles.org.

3. Firearms

As one means to neutralize lethal threats, law enforcement officers carry firearms as standard equipment. Also, firearms are employed in limited situations in correctional settings. Officers count on the reliability of their firearms (primarily autoloading pistols and shotguns) as well as their ammunition and holsters to perform when called into use.

Potential Funding Sources

[May be used for personnel, training, equipment, technical assistance, research, development, or implementation (see appendix C for details and contacts).]

- Edward Byrne Memorial State and Local Law Enforcement Assistance Discretionary Grants (Bureau of Justice Assistance).
- Edward Byrne Memorial State and Local Law Enforcement Assistance Formula Grants (Bureau of Justice Assistance).
- Innovative Community Policing Grants (Office of Community Oriented Policing Services).
- Local Law Enforcement Block Grants Program (Bureau of Justice Assistance).
- Office of Science and Technology general and directed solicitations (National Institute of Justice).

Standards and Testing

- *Autoloading Pistols for Police Officers: NIJ Standard–0112.03*. 1998. This standard establishes performance requirements and test methods for pistols to be used by law enforcement officers. It supersedes *NIJ Standard–0112.02* (1995) and addresses new pistol designs, calibers, revised procedures for verifying head space, and general revision of the testing procedures. Revision A of *NIJ Standard–0112.03*, issued in July 1999, clarifies procedures for test methods found in section 5 and incorporates data collection and revised reporting requirements.
- *12-Gauge Shotguns for Police Use: NIJ Standard–0113.00*. March 1989. This standard establishes criteria and test methods for shotguns to be used by law enforcement officers. It addresses 12-gauge shotguns only. Although the standard is intended for new weapons, it may also be used to assess the acceptability of shotguns that have been reconditioned for reissue. Included are dimensional, functional, and firing requirements, along with safety features. This standard does not address accuracy or sights.
- *National Institute of Standards and Technology Interagency Report (NISTIR) 5109, Test Procedure for Handgun Accuracy*. 1993. This applies to measuring the accuracy of revolvers and autoloading pistols that employ Partridge-type sights with either fixed or adjustable rear sights.

Research and Development Efforts

- **Smart gun technology.** This technology, which allows a weapon to be fired only by a recognized, authorized user, is being actively investigated by a number of companies with the support and/or cooperation of the National Institute of Justice. In addition, a set of standards for several “security” retention levels for holsters is currently being developed.
- **Weapons Team Engagement Trainer (WTET).** The WTET interactive team trainer simulates hostage rescue, use of force, and room-clearing scenarios. The scenarios are played on large screens, and trainees provide realistic aggressor response, branching, and shootback. The WTET simulation was originally developed by the military for use by special forces teams. The first production version of the system is being installed and tested at the Laser Village training site of the Los Angeles County Sheriff’s Department.

Sources of Further Information

Contacts:

- National Institute of Justice, Office of Science and Technology: 202–307–0645.
- National Law Enforcement and Corrections Technology Center–National: 800–248–2742 or asknlectc@nlectc.org.
- Office of Law Enforcement Standards: 301–975–2757 or oles@nist.gov.

Publications and Products:

- “As Real As It Gets.” *TechBeat*, NLECTC, Fall 1999.
- *Equipment Performance Report: 1999 Autoloading Pistols*. May 2000.
- “Making Guns Smart: The Next Step.” *TechBeat*, NLECTC, Winter 1999.
- *NLECTC Tests Autoloading Pistols for Law Enforcement Use*. Equipment Performance Bulletin, January 2000. (Includes text of Revision A of *Autoloading Pistols for Police Officers: NIJ Standard–0112.03*.)
- *Smart Gun Technology Project Final Report*, Sandia National Laboratories for the National Institute of Justice (SAND96–1131), May 1996.
- *.38-/.357-Caliber Revolvers: NIJ Standard–0109.00*. 1983.
- *12-Gauge Shotguns for Police Use: NIJ Standard–0113.00*. 1989.

Internet:

- Bureau of Justice Assistance: www.ojp.usdoj.gov/bja.
- JUSTNET (National Law Enforcement and Corrections Technology Center system): www.nlectc.org.

- National Criminal Justice Reference Service: www.ncjrs.org.
- National Institute of Justice: www.ojp.usdoj.gov/nij.
- National Institute of Justice, Office of Science and Technology:
www.ojp.usdoj.gov/nij/sciencetech/welcome.html.
- National Institute of Standards and Technology: www.nist.gov.
- Office of Community Oriented Policing Services: www.usdoj.gov/cops.
- Office of Justice Programs: www.ojp.usdoj.gov.
- Office of Law Enforcement Standards: www.oles.org.

4. Less-Than-Lethal Weapons

Many tools have been developed over the years to help officers control or arrest individuals without having to use deadly force. Such tools include a variety of batons or nightsticks, rubber bullet/beanbag projectiles, and various chemical agents (such as pepper spray and tear gas) and can play a vital role in effectively resolving critical incidents (see section II).

Potential Funding Sources

[May be used for personnel, training, equipment, technical assistance, research, development, or implementation (see appendix C for details and contacts).]

- Edward Byrne Memorial State and Local Law Enforcement Assistance Discretionary Grants (Bureau of Justice Assistance).
- Edward Byrne Memorial State and Local Law Enforcement Assistance Formula Grants (Bureau of Justice Assistance).
- Innovative Community Policing Grants (Office of Community Oriented Policing Services).
- Local Law Enforcement Block Grants Program (Bureau of Justice Assistance).
- Office of Science and Technology general and directed solicitations (National Institute of Justice).

Standards and Testing

- *Barrier-Penetrating Tear Gas Munitions: NIJ Standard–0111.00*. 1985. Establishes minimum performance requirements and test methods, including safety and handling aspects, for barrier-penetrating tear gas (less-than-lethal) munitions. Scope is limited to such munitions incorporating ortho-chlorobenzylidene malononitrile or alpha-chloroacetophenone as the active agent, regardless of the means of disseminating the tear gas.
- *Handheld Aerosol Tear Gas Weapons: NIJ Standard–0110.00*. 1985. Establishes minimum performance requirements and test methods, including safety and handling aspects, for handheld aerosol tear gas (less-than-lethal) weapons used by law enforcement agencies. Scope is limited to such weapons incorporating ortho-chlorobenzylidene malononitrile or alpha-chloroacetophenone as the active agent sprayed from an aerosol dispenser.

Research and Development Efforts

Ongoing projects are taking a new look at or investigating the following technologies:

- **Laser dazzler.** Through the Joint Program Steering Group, the National Institute of Justice and the Defense Advanced Research Projects Agency funded a project to develop a handheld device that uses random, flashing, green laser light to disorient and distract a subject.
- **Disabling net and launcher system.** This system employs a nonlethal, launchable net that fits a conventional weapons system and will safely ensnare attacking or fleeing subjects.
- **Physiological responses to energetic stimuli.** A number of projects are exploring the possible uses of various technologies to produce temporary physiological responses, such as nausea, dizziness, and disorientation. One such technology uses pulsed light to produce disorientation and impaired vision in an adversary.
- **Ring airfoil projectile.** This doughnut-shaped, rubber projectile, originally developed by the U.S. military, is used to deter a single individual at a standoff range by producing a sting when it strikes.
- **Sticky shocker.** A low-impact, wireless projectile is fired from compressed gas or powder launchers that stick to the target with a gluelike substance or with short, clothing-attachment barbs. Once attached, the device delivers a small, but disabling, electrical shock. Development is complete; health assessment is under way.

Sources of Further Information

Contacts:

- Corrections Program Office: 800–848–6325 or askojp@ojp.usdoj.gov.
- Department of Justice Response Center: 800–421–6770 or 202–307–1480.
- National Institute of Justice, Office of Science and Technology: 202–307–0645.
- National Law Enforcement and Corrections Technology Center–National: 800–248–2742 or asknlectc@nlectc.org.
- Office of Law Enforcement Standards: 301–975–2757 or oles@nist.gov.

Publications and Products:

- *Barrier-Penetrating Tear Gas Munitions: NIJ Standard–0111.00.* 1985.
- *Handheld Aerosol Tear Gas Weapons: NIJ Standard–0110.00.* 1985.
- “How ‘Less’ Is Less Than Lethal?” *TechBeat*, NLECTC, Spring 2000.
- “NIJ Initiates Prison Riot.” *TechBeat*, NLECTC, Summer 1998.

- *Oleoresin Capsicum: Pepper Spray as a Force Alternative*. NLECTC (NCJ 181655), March 1994.
- “Out of Retirement, Into Training.” *TechBeat*, NLECTC, Spring 1999.
- *Preliminary Investigation of Oleoresin Capsicum: NIJ Report 100–95*. April 1995.
- “Product Evaluations: Myotron ‘Checkmate.’ ” *TechBeat*, NLECTC, Summer 1998.

Internet:

- Bureau of Justice Assistance: www.ojp.usdoj.gov/bja.
- Corrections Program Office: www.ojp.usdoj.gov/cpo.
- Defense Advanced Research Projects Agency: www.darpa.mil.
- JUSTNET (National Law Enforcement and Corrections Technology Center system): www.nlectc.org.
- National Institute of Justice: www.ojp.usdoj.gov/nij.
- National Institute of Justice, Office of Science and Technology: www.ojp.usdoj.gov/nij/sciencetech/welcome.html.
- Office of Community Oriented Policing Services: www.usdoj.gov/cops.
- Office of Justice Programs: www.ojp.usdoj.gov.
- Office of Law Enforcement Standards: www.oles.org.

5. Pursuit Management

Most currently available pursuit management devices involve deflation of a vehicle's tires and are typically designed to be carried in the trunk of a patrol car and deployed in advance as the fleeing vehicle approaches.

Potential Funding Sources

[May be used for personnel, training, equipment, technical assistance, research, development, or implementation (see appendix C for details and contacts).]

- Edward Byrne Memorial State and Local Law Enforcement Assistance Discretionary Grants (Bureau of Justice Assistance).
- Edward Byrne Memorial State and Local Law Enforcement Assistance Formula Grants (Bureau of Justice Assistance).
- Innovative Community Policing Grants (Office of Community Oriented Policing Services).
- Local Law Enforcement Block Grants Program (Bureau of Justice Assistance).
- Office of Science and Technology general and directed solicitations (National Institute of Justice).

Standards and Testing

- *Vehicle Tracking Devices: NIJ Standard–0223.00*. 1986. This standard establishes performance requirements and test methods for vehicle tracking devices and systems. It addresses all parts of a vehicle tracking system except for the receiving antenna, and applies to vehicle tracking devices or systems that do not have special features, such as audio alert tones or variable bandwidth receivers, or in which such special features are bypassed or disabled during testing for compliance with this standard.

Research and Development Efforts

- Among the technologies being explored by the National Institute of Justice's Office of Science and Technology are a number of electric and electromagnetic vehicle-stopping concepts, a fleeing vehicle tagging system, a device for communicating with a fleeing driver through a car's radio, enhanced police sirens, vehicle barriers, a variation of the spiked barrier strip, deployable nets, and a portable-deployable tire shredder.

Sources of Further Information

Contacts:

- National Institute of Justice, Office of Science and Technology: 202–307–0645.
- National Law Enforcement and Corrections Technology Center–National: 800–248–2742 or asknlectc@nlectc.org.
- National Law Enforcement and Corrections Technology Center–West: 888–548–1618.
- Office of Law Enforcement Standards: 301–975–2757 or oles@nist.gov.
- Office of Law Enforcement Technology Commercialization: 888–306–5382 or oletc@nttc.edu.

Publications and Products:

- “Catch of the Day.” *TechBeat*, NLECTC, Summer 1998.
- “Dangerous Drivers in 3D.” *TechBeat*, NLECTC, Winter 1999.
- *Equipment Performance Report: Effectiveness of Tire Deflation Devices Against Self-Healing and Run-Flat Tires*. NLECTC (NCJ 184431), 2000. This report is distributed to law enforcement officials in hard copy only.
- *Equipment Performance Report: Vehicle Tracking Devices*. NLECTC (NCJ 117430), 1990.
- *Guide to Test Methods, Performance Requirements, and Installation Practices for Electronic Sirens Used on Law Enforcement Vehicles: NIJ Guide 500–00*. Forthcoming.
- *Helicopters in Pursuit Operations*. NIJ Research in Action (NCJ 171695), August 1998.
- *High-Speed Pursuit: New Technologies Around the Corner*. NLECTC Bulletin, October 1996.
- *Pursuit Management Task Force*. NIJ Research Preview (FS 000225), August 1998.
- *Pursuit Management Task Force Report*. NLECTC–West (NCJ 172200), September 1998.
- *Vehicle Tracking Devices: NIJ Standard–0223.00*. 1986.

Internet:

- Bureau of Justice Assistance: www.ojp.usdoj.gov/bja.
- JUSTNET (National Law Enforcement and Corrections Technology Center system): www.nlectc.org.
- National Criminal Justice Reference Service: www.ncjrs.org.
- National Institute of Justice: www.ojp.usdoj.gov/nij.
- National Institute of Justice, Office of Science and Technology: www.ojp.usdoj.gov/nij/sciencetech/welcome.html.

- Office of Community Oriented Policing Services: www.usdoj.gov/cops.
- Office of Justice Programs: www.ojp.usdoj.gov.
- Office of Law Enforcement Standards: www.oles.org.

6. Surveillance

Surveillance devices allow law enforcement and corrections officers to watch (and thus safeguard) particular locations remotely. Such devices permit officers to observe or find individuals who otherwise might not be visible because of obstructions or darkness. Current technologies include closed-circuit television security systems, a variety of night vision devices using infrared and available light sources, and through-the-wall surveillance devices. The latter have great potential in effectively resolving critical incidents (section II), such as hostage taking.

Potential Funding Sources

[May be used for personnel, training, equipment, technical assistance, research, development, or implementation (see appendix C for details and contacts).]

- Edward Byrne Memorial State and Local Law Enforcement Assistance Discretionary Grants (Bureau of Justice Assistance).
- Edward Byrne Memorial State and Local Law Enforcement Assistance Formula Grants (Bureau of Justice Assistance).
- Innovative Community Policing Grants (Office of Community Oriented Policing Services).
- Local Law Enforcement Block Grants Program (Bureau of Justice Assistance).
- Office of Science and Technology general and directed solicitations (National Institute of Justice).
- Violent Offender Incarceration/Truth-in-Sentencing (VOI/TIS) Incentive Grants Program (Corrections Program Office).

Standards and Testing

- *Miniature Surveillance Recorders: NIJ Standard–0225.00*. January 1990. This standard establishes performance requirements and methods to test for miniature recording devices and systems for use in undercover surveillance. A system includes the recording device and its power supply, a separate microphone, and a playback unit. Except for this microphone, all parts of the miniature surveillance recording system are addressed by this standard. The recording device and playback unit may be combined or separate. This standard places requirements on the output from the playback unit only, as this characteristic is most critical to the effectiveness of the system.
- Standards for first-generation night vision devices exist but are dated and are not applicable to current night vision technology.

Research and Development Efforts

State and local law enforcement and corrections communities have identified as one of their key needs technology that will allow them to “see” through building walls to locate and track concealed or hidden individuals. Another ongoing need is for night vision devices that will allow officers to detect the heat or infrared radiation emitted by objects, especially people, even in total darkness.

The National Institute of Justice (NIJ) is funding the development of a portable, briefcase-sized, through-the-wall surveillance device that is a modification of a commercially available motion detector and military ranging system as well as a handheld, through-the-wall surveillance device known as the radar flashlight. Other areas of research are the Advanced Vehicle Interrogation and Notification (AVIAN) system, night vision/infrared technologies, speech enhancement units, speaker identification technology, voice stress analysis technology evaluation, a kit of investigators’ tools, and improved closed-circuit television surveillance.

Sources of Further Information

Contacts:

- National Institute of Justice, Office of Science and Technology: 202–307–0645.
- National Law Enforcement and Corrections Technology Center–National: 800–248–2742 or asknlectc@nlectc.org.
- Office of Law Enforcement Standards: 301–975–2757 or oles@nist.gov.

Publications and Products:

- *The Appropriate and Effective Use of Security Technology in Schools*. NIJ Research Report (NCJ 178265), September 1999.
- “Caught in the Act.” *TechBeat*, NLECTC, Fall 1999.
- “Keeping an Eye on Crime.” *TechBeat*, NLECTC, Spring 1999.
- *Miniature Surveillance Recorders: NIJ Standard–0225.00*. January 1990.
- “Night Vision Goggles.” *TechBeat*, NLECTC, Spring 2000.
- *Scoping Out Night Vision*. NIJ Bulletin, March 1996.
- “Tiger Vision: Linking Invention With Industry.” *TechBeat*, NLECTC, Winter 1999.
- “Thermal Imaging Turns Up the Heat.” *TechBeat*, NLECTC, Winter 2001.
- “Thermal Imaging and the Fourth.” *TechBeat*, NLECTC, Winter 2001.
- *Video Surveillance Equipment Selection and Application Guide: NIJ Guide 201–99* (prepared by the Office of Law Enforcement Standards). October 1999.

Internet:

- Bureau of Justice Assistance: www.ojp.usdoj.gov/bja.
- Corrections Program Office: www.ojp.usdoj.gov/cpo.
- JUSTNET (National Law Enforcement and Corrections Technology Center system):
www.nlectc.org.
- National Criminal Justice Reference Service: www.ncjrs.org.
- National Institute of Justice: www.ojp.usdoj.gov/nij.
- National Institute of Justice, Office of Science and Technology:
www.ojp.usdoj.gov/nij/sciencetech/welcome.html.
- Office of Community Oriented Policing Services: www.usdoj.gov/cops.
- Office of Justice Programs: www.ojp.usdoj.gov.
- Office of Law Enforcement Standards: www.oles.org.

7. Offender Monitoring/Officer Location

In many jurisdictions throughout the country, the location of persons on probation, parole, or pretrial release can be monitored electronically, typically through home-based systems tied into a phone line. This technology helps minimize the use of court or police officers by permitting the monitoring agency to know when the subject wearing a monitoring device is at home or when he or she has left and returned. Related technologies, however, can come into play when used for officer safety/location, especially in correctional facilities. These technologies allow an officer to transmit a call for help to a central location where his or her location can be pinpointed and assistance can be dispatched.

Potential Funding Sources

[May be used for personnel, training, equipment, technical assistance, research, development, or implementation (see appendix C for details and contacts).]

- Edward Byrne Memorial State and Local Law Enforcement Assistance Discretionary Grants (Bureau of Justice Assistance).
- Edward Byrne Memorial State and Local Law Enforcement Assistance Formula Grants (Bureau of Justice Assistance).
- Office of Science and Technology general and directed solicitations (National Institute of Justice).
- Violent Offender Incarceration/Truth-in-Sentencing (VOI/TIS) Incentive Grants Program (Corrections Program Office).

Standards and Testing

No standards currently exist for location and tracking equipment.

Research and Development Efforts

The National Institute of Justice (NIJ) is working to improve existing electronic technology by exploring tracking technology advances made in other fields for their potential application in tracking and monitoring individuals on a full-time basis.

NIJ is funding the research and development of technology for monitoring staff status and location in a correctional environment. Highly reliable systems that can precisely locate staff are required for correctional staff protection. The NIJ program will evaluate and demonstrate wireless personal alarm monitoring (PAM) systems. Also, the program will identify technology that may be available commercially to meet the needs of the corrections community for a reliable, affordable, easy-to-install personal alarm monitoring system that will be easy to maintain. A solicitation will be issued for proposals from vendors with commercially available PAM systems. An evaluation of systems will be

conducted by the Space and Naval Warfare Center, Charleston, South Carolina, and a system or systems will be selected for demonstration in an occupied Federal Bureau of Prisons facility or U.S. Navy correctional facility.

The American Probation and Parole Association (APPA), with NIJ funding and the cooperation of the Council of State Governments, is developing a process to enhance the acceptance, use, and effectiveness of electronic monitoring through research, testing, education, and training. APPA and NIJ are working to develop and deliver information on electronic monitoring tools, procedures for testing equipment capabilities and specifications, potential applications for current technology, and data elements for the future evaluation of equipment uses.

Sources of Further Information

Contacts:

- Corrections Program Office: 800–848–6325 or askojp@ojp.usdoj.gov.
- Department of Justice Response Center: 800–421–6770 or 202–307–1480.
- National Institute of Justice, Office of Science and Technology: 202–307–0645.
- National Law Enforcement and Corrections Technology Center–National: 800–248–2742 or asknlectc@nlectc.org.

Publications and Products:

- “Horse Farm Detention Center.” *TechBeat*, NLECTC, Summer 2000.
- “Keeping Bad Guys Behind Bars.” *TechBeat*, NLECTC, Winter 2000.
- *Keeping Track of Electronic Monitoring*. NLECTC Bulletin, October 1999.
- “Keeping Track of Electronic Monitoring.” *TechBeat*, NLECTC, Winter 1999.

Internet:

- Bureau of Justice Assistance: www.ojp.usdoj.gov/bja.
- Corrections Program Office: www.ojp.usdoj.gov/cpo.
- JUSTNET (National Law Enforcement and Corrections Technology Center system): www.nlectc.org.
- National Institute of Justice: www.ojp.usdoj.gov/nij.
- National Institute of Justice, Office of Science and Technology: www.ojp.usdoj.gov/nij/sciencetech/welcome.html.
- Office of Community Oriented Policing Services: www.usdoj.gov/cops.
- Office of Justice Programs: www.ojp.usdoj.gov.

8. Concealed Weapon and Contraband Detection

Contraband detection systems allow agencies and officers to detect and diffuse potential threats. Research and development efforts are under way on systems that detect a variety of contraband, from drugs to human beings to concealed weapons. Because concealed weapons—principally handguns and edged weapons—pose a potentially lethal threat to law enforcement and corrections personnel, a number of research projects are focused on their detection. Current detection systems include portal-type metal detectors (as encountered in airports and many office buildings) and metal-detecting wands. Despite limitations—e.g., limited range, high false-alarm rates, obtrusiveness—these devices have provided a certain margin of safety in areas such as prison visitor areas, government offices, courts, and schools.

Potential Funding Sources

[May be used for personnel, training, equipment, technical assistance, research, development, or implementation (see appendix C for details and contacts).]

- Innovative Community Policing Grants (Office of Community Oriented Policing Services).
- Edward Byrne Memorial State and Local Law Enforcement Assistance Discretionary Grants (Bureau of Justice Assistance).
- Edward Byrne Memorial State and Local Law Enforcement Assistance Formula Grants (Bureau of Justice Assistance).
- Local Law Enforcement Block Grants Program (Bureau of Justice Assistance).
- Office of Science and Technology general and directed solicitations (National Institute of Justice).

Standards and Testing

- *Color Test Reagents/Kits for Preliminary Identification of Drugs of Abuse: NIJ Standard–0604.01.* August 2000. Establishes minimum requirements for color test reagents/kits to detect drugs of abuse and methods of testing the reagents to determine compliance with those requirements.
- *Hand-Held Metal Detectors for Use in Concealed Weapon and Contraband Detection: NIJ Standard–0602.01.* September 2000. Establishes performance requirements and method of test for active handheld metal detectors used to find metal weapons and/or metal contraband carried by a person and/or concealed by a nonmetal object.
- *Walk-Through Metal Detectors for Use in Concealed Weapon and Contraband Detection: NIJ Standard–0601.01.* September 2000. Establishes performance requirements and methods of testing for active walk-through metal detectors used to find metal weapons and/or metal contraband carried on a person and/or concealed by a nonmetal object.

Research and Development Efforts

NIJ, working with the Joint Program Steering Group, has initiated a program to develop safe, affordable, and, to the extent possible, inconspicuous systems that can detect weapons of all types and composition from a distance of at least 30 feet. Initial research efforts are focused on developing stationary devices, much like the metal detectors found in airports. Other current initiatives in this field involve the exploration and development of various technologies, including portable millimeter wave (MMW) radar, handheld wideband radar, a passive MMW camera, electromagnetic portal, a handheld acoustic system, a vehicle-mounted metal weapons detector, a body cavity screening system using magnetic resonance imaging (MRI), modified off-the-shelf back-scatter x-ray imaging, and an MMW/infrared sensor. Some research and development funding has been supplied by the COPS Office.

Sources of Further Information

Contacts:

- Bureau of Justice Assistance: 800-688-4252.
- Corrections Program Office: 800-848-6325 or askojp@ojp.usdoj.gov.
- Joint Program Steering Group: 703-351-8719.
- National Institute of Justice, Office of Science and Technology: 202-307-0645.
- National Law Enforcement and Corrections Technology Center-National: 800-248-2742 or asknlectc@nlectc.org.
- National Law Enforcement and Corrections Technology Center-Northeast: 888-338-0584.
- National Law Enforcement and Corrections Technology Center-West: 888-548-1618.
- Office for State and Local Domestic Preparedness Support: 202-305-9887.
- Office of Law Enforcement Standards: 301-975-2757 or oles@nist.gov.

Publications and Products:

- *The Appropriate and Effective Use of Security Technology in Schools*. NIJ Research Report (NCJ 178265), September 1999.
- “An Attraction for Weapons.” *TechBeat*, NLECTC, Fall 1999.
- *Color Test Reagents/Kits for Preliminary Identification of Drugs of Abuse: NIJ Standard-0604.01*. August 2000.
- “Drug Testing in Criminal Justice: Evolving Uses, Emerging Technologies.” *NIJ Journal*, Issue 234, December 1997.
- *Guide for the Selection of Commercial Drug Detectors for Law Enforcement Applications: NIJ Guide 601-99* (NCJ 171133). September 1998.

- *Guide for the Selection of Drug Detectors for Law Enforcement Applications: NIJ Guide 601–00.* August 2000.
- *Guide to the Technologies of Concealed Weapons and Contraband Imaging and Detection. NIJ Report 602–00.* February 2001.
- *Hand-Held Metal Detectors for Use in Concealed Weapon and Contraband Detection: NIJ Standard–0602.01.* September 2000.
- *Hands-Off Frisking: High-Tech Concealed Weapons Detection.* June 1996.
- “Hide and Seek.” *TechBeat*, NLECTC, Summer 1999.
- “Innovations in Concealed Weapons Detection Technology.” *TechBeat*, NLECTC, October 1997.
- “Looking Through Walls.” *TechBeat*, NLECTC, Summer 2000.
- “Product Alert! Physical Analysis of DKL LifeGuard™ Device.” *TechBeat*, NLECTC, Summer 1999.
- “Product Evaluations: DKL LifeGuard.” *TechBeat*, NLECTC, Summer 1998.
- “Technology Transfer From Defense: Concealed Weapon Detections.” *NIJ Journal*, Issue 229, August 1995.
- *User’s Guide for Hand-Held and Walk-Through Metal Detectors: NIJ Guide 600–00.* Forthcoming.
- *Walk-Through Metal Detectors for Use in Concealed Weapon and Contraband Detection: NIJ Standard–0601.01.* September 2000.

Internet:

- Bureau of Justice Assistance: www.ojp.usdoj.gov/bja.
- Corrections Program Office: www.ojp.usdoj.gov/cpo.
- JUSTNET (National Law Enforcement and Corrections Technology Center system): www.nlectc.org.
- National Institute of Justice: www.ojp.usdoj.gov/nij.
- National Institute of Justice, Office of Science and Technology: www.ojp.usdoj.gov/nij/sciencetech/welcome.html.
- Office for State and Local Domestic Preparedness Support: www.ojp.usdoj.gov/osldps.
- Office of Community Oriented Policing Services: www.usdoj.gov/cops.
- Office of Justice Programs: www.ojp.usdoj.gov.
- Office of Law Enforcement Standards: www.oles.org.

SECTION

II.

PUBLIC SAFETY IN CRITICAL INCIDENTS

Critical incidents are those that pose a significant risk to public safety and require a multidisciplinary response from the public safety community. Critical incidents include natural disasters, industrial accidents, transportation incidents (such as train derailments and plane crashes), and school security and terrorist incidents. Critical incidents also include more common events, such as building fires and highway traffic incidents.

Developing technology for public safety in critical incident response is inherently an interagency process. In the example of through-the-wall surveillance technology (see section I of this *Guide*), the National Institute of Justice (NIJ) is collaborating with a number of other agencies, including the Federal Emergency Management Agency. The ability to communicate and exchange information among different agencies responding to critical incidents—e.g., fire, emergency medical services, HAZMAT, and law enforcement—is crucial to effective response (see also section III, chapter 12, Communications Interoperability).

Terrorism is a type of criminal activity that is of enormous concern. The potentially devastating consequences of terrorist acts involving weapons of mass destruction (WMD) could affect the entire Nation. Since 1996, the Office of Justice Programs (OJP) and its partners have worked together to develop the Nation's ability to deal with terrorism. Pursuant to the *Anti-Terrorism and Effective Death Penalty Act of 1996* (Public Law 104–132), OJP's initial efforts focused on addressing the unmet technology needs of first responders at the State and local levels, including setting the standards needed to develop and test those technologies.

In 1997, NIJ funded the Inventory of State and Local Law Enforcement Technology Needs To Combat Terrorism, which involved interviews and group discussions with 195 representatives from 138 agencies from all 50 States and the District of Columbia. (More information on the inventory can be found at www.ojp.usdoj.gov/nij/pubs-sum/173384.htm.) Based on the inventory, NIJ has crafted its Critical Incident Response/Counterterrorism Technologies Program into a comprehensive effort focused on addressing the unique technology needs of the entire first-responder community. The program is advocating the needs identified in relevant forums, including the Technical Support Working Group (TSWG), National Domestic Preparedness Office (NDPO), and Weapons of Mass Destruction Working Group.

In 1998, OJP created the Office for State and Local Domestic Preparedness Support (OSLDPS) to assist State and local response agencies throughout the United States in preparing for incidents of domestic terrorism. OSLDPS offers assistance to emergency response agencies through financial aid for purchasing equipment, training for emergency response personnel, support in making critical decisions, and exercise support that enables State and local response planning and procedures.

The efforts of OJP in counterterrorism and domestic preparedness are closely coordinated with NDPO, a publicly accessible interagency office that assists first responders by serving as the single office for the coordination of the Federal programs involving domestic preparedness. NDPO consists of representatives from the Department of Justice (OSLDPS and Federal Bureau of Investigation), Department of Defense (DoD), Federal Emergency Management Agency (FEMA), Department of Health and Human Services (HHS), Environmental Protection Agency (EPA), Department of Energy (DOE), National Guard Bureau, and State and local representatives. NIJ has established two congressionally mandated counterterrorism research institutes, the Oklahoma City Memorial Foundation and the Dartmouth Institute for Security Studies (at Dartmouth College's Thayer School of Engineering); both receive funding from NIJ, and their work is being coordinated with that of OSLDPS and NDPO.

In this section, we examine technologies related to detecting and disposing of explosives (chapter 9), responding to the threat of chemical and biological attacks (chapter 10), and assessing threats to the security of our transportation infrastructure (chapter 11). Less-than-lethal weapons and through-the-wall surveillance are useful technologies in hostage rescue situations. They are discussed in chapters 4 and 6, respectively. Communications interoperability, which is essential to critical incident response, is discussed in chapter 12.

9. Explosives Detection and Remediation

Currently available approaches for the detection and remediation of explosives involve diagnostics, containment/disruption (including robotically retrieving and disarming devices), and simulation/training.

Potential Funding Sources

[May be used for personnel, training, equipment, technical assistance, research, development, or implementation (see appendix C for details and contacts).]

- Edward Byrne Memorial State and Local Law Enforcement Assistance Discretionary Grants (Bureau of Justice Assistance).
- Edward Byrne Memorial State and Local Law Enforcement Assistance Formula Grants (Bureau of Justice Assistance).
- Local Law Enforcement Block Grants Program (Bureau of Justice Assistance).
- Municipal Fire and Emergency Management Services (EMS) Equipment and Training Program (Office for State and Local Domestic Preparedness Support).
- Office of Science and Technology general and directed solicitations (National Institute of Justice).
- State and Local Anti-Terrorism Training (SLATT) Program (Office for State and Local Domestic Preparedness Support).
- State Domestic Preparedness Equipment Support Program (Office for State and Local Domestic Preparedness Support).

Standards and Testing

- *NIJ Standard–0603.00: X-ray Systems for Bomb Disarmament*. 1975. (This publication is currently being updated.)

Research and Development Efforts

- **Bomb robot.** The National Institute of Justice (NIJ), through the Joint (Justice-Defense) Program Steering Group (JPSG), in collaboration with the Technical Support Working Group (TSWG), has completed a nationwide assessment of practitioner requirements for bomb robots. A final draft report has been written and submitted for review. A solicitation for development of improved bomb robotics was released (through TSWG) in February 2001, with development commencing later in fiscal year 2001.

- **Bomb technician data retrieval tool.** In the information area, NIJ funded the development of a PC-based data retrieval tool for bomb technicians. The tool provides unprecedented access to vital bomb data for State and local bomb technicians, transferring the 20,000 pages of print, drawings, photographs, and charts contained in 30 years of bomb technical bulletins published by the Federal Bureau of Investigation (FBI) to 3 CDs. Coupled with search software, this technology will provide bomb technicians with immediate access to critical information at the site of a bomb response call. It is being distributed through the FBI's Bomb Data Center.
- **Bomb technician training tool.** NIJ has funded the Indian Head Division of the naval Surface Warfare Center to develop an interactive, computer-based training tool for bomb technicians, which is packaged on a CD-ROM. This tool provides individual instructions and is intended to furnish refresher training on the course of study taught at the bomb technician's basic course at the Hazardous Devices School. Development is complete, and the FBI Bomb Data Center will distribute copies to all bomb squads in the United States.
- **Bomb threat training simulator (BTTS).** The BTTS, developed under an NIJ grant, will help train law enforcement personnel and others in bomb threat assessment. BTTS is a computer-based, interactive, multimedia simulator on a CD-ROM that enables law enforcement or security officers to develop their first-on-the-scene bomb threat response skills and supplement conventional classroom instruction. NIJ anticipates availability in June 2001.
- **Containment devices for small bombs.** NIJ is sponsoring this project to demonstrate and evaluate a low-cost, lightweight, easily transportable, fully enclosed, blast-resistant container for transporting pipe bombs containing up to 1 pound of smokeless powder.
- **Flying plate disrupter.** NIJ is supporting the development and demonstration of a disrupter that will be effective against large improvised explosive devices (IEDs), such as the 55-gallon fuel-fertilizer bombs used at the Murrah Federal Building in Oklahoma City, Oklahoma. It was demonstrated with the Kansas-Missouri Bomb Technician Working Group during FY 2000. Recommendations arising from that demonstration will be incorporated into a revised design in 2001.
- **Hazardous Access Training (HAT) Kit.** This training device consists of seven modules that each represent a different bomb threat scenario, including a passive infrared, a photocell, a countdown timer, a tripwire, a vibration sensor, a command initiated with a remote switch, and a multiple command initiate. The Office of Law Enforcement Technology Commercialization (OLETC) has assisted TSWG and Engineering Technology, Inc., in producing and marketing the commercial version of this modular universal training device (called the HAT Kit, Black Widow System). All domestic and international non-Federal sales will be coordinated with the FBI Bomb Data Center, which will maintain records of all sales.

- **X-ray bomb diagnostic system assessment.** NIJ, in collaboration with the Technical Support Working Group (TSWG) and the FBI, is sponsoring a nationwide demonstration and evaluation, by 50 agencies, of improved diagnostic systems for explosive devices. RTR-3, the first technology being evaluated, is a computer-based, portable x-ray system developed under TSWG auspices for the diagnosis of explosive devices in real time. The system also allows for the transmission of x-ray images via modem to remote experts for analysis.

Sources of Further Information

Contacts:

- Federal Bureau of Investigation Bomb Data Center: 202-324-2696 or bdc@fbi.gov.
- National Institute of Justice, Office of Science and Technology: 202-307-0645.
- National Law Enforcement and Corrections Technology Center-National: 800-248-2742 or asknlectc@nlectc.org.
- National Law Enforcement and Corrections Technology Center-Rocky Mountain: 800-416-8086.
- Office for State and Local Domestic Preparedness Support: 202-305-9887.
- Office of Law Enforcement Standards: 301-975-2757 or oles@nist.gov.
- Office of Law Enforcement Technology Commercialization: 888-306-5382 or oletc@nttc.edu.

Publications and Products:

- *The Appropriate and Effective Use of Security Technology in Schools.* NIJ Research Report (NCJ 178265), September 1999.
- “Big Bangs in Riverside.” *TechBeat*, NLECTC, Winter 2000.
- *Inventory of State and Local Law Enforcement Technology Needs To Combat Terrorism.* NIJ Research in Brief (NCJ 173384), 1998.
- *Survey of Commercially Available Explosives Detection Technologies and Equipment*, by David W. Hannum and John E. Parmeter (Sandia National Laboratories). Rockville, MD: National Law Enforcement and Corrections Technology Center (NCJ 171133), September 1998.
- Domestic Preparedness Stakeholders Forum. OSLDPS. 1998.
- TOPOFF Planning Forum. OSLDPS. 1999.
- *X-ray Systems for Bomb Disarmament: NIJ Standard-0603.00.* 1975.

- The following OSLDPS training videos can be obtained by writing to—

VIDEO REQUEST

Office for State and Local Domestic Preparedness Support
Office of Justice Programs
810 Seventh Street, N.W.
Washington, DC 20531

- *Surviving the Secondary Device—The Rules Have Changed.*
- *Surviving Weapons of Mass Destruction.*
- *Weapons of Mass Destruction—The First Responder.*

Internet:

- Bureau of Justice Assistance: www.ojp.usdoj.gov/bja.
- Federal Bureau of Investigation Bomb Data Center: www.fbi.gov/programs/lab/org/1997bombrep.pdf.
- Institute for Security Technology Studies, Dartmouth College: www.ists.dartmouth.edu.
- JUSTNET (National Law Enforcement and Corrections Technology Center system): www.nlectc.org.
- National Institute of Justice: www.ojp.usdoj.gov/nij.
- National Institute of Justice, Office of Science and Technology: www.ojp.usdoj.gov/nij/sciencetech/welcome.html.
- Office for State and Local Domestic Preparedness Support: www.ojp.usdoj.gov/osldps.
- Office of Justice Programs: www.ojp.usdoj.gov.
- Office of Law Enforcement Standards: www.oles.org.
- Office of Law Enforcement Technology Commercialization: www.oletc.org.
- Oklahoma City National Memorial Institute for the Prevention of Terrorism: www.mipt.org.

10. Chemical and Biological Defense

Technologies are needed that will better help law enforcement identify an attack by terrorists using chemical or biological weapons and survive that attack. In collaboration with the Technical Support Working Group (TSWG), NIJ is also developing a low-cost, wearable personal alarm to alert first responders to the presence of toxic chemical and biological agents—one of the highest priority practitioner needs identified in NIJ's 1997 nationwide inventory of State and local law enforcement technology needs to combat terrorism.

Potential Funding Sources

[May be used for personnel, training, equipment, technical assistance, research, development, or implementation (see appendix C for details and contacts).]

- Edward Byrne Memorial State and Local Law Enforcement Assistance Discretionary Grants (Bureau of Justice Assistance).
- Edward Byrne Memorial State and Local Law Enforcement Assistance Formula Grants (Bureau of Justice Assistance).
- Municipal Fire and EMS Equipment and Training Program (Office for State and Local Domestic Preparedness Support).
- Office of Science and Technology general and directed solicitations (National Institute of Justice).
- State and Local Anti-Terrorism Training (SLATT) Program (Office for State and Local Domestic Preparedness Support).
- State Domestic Preparedness Equipment Support Program (Office for State and Local Domestic Preparedness Support).

Standards and Testing

NIJ, through the Office of Law Enforcement Standards at the National Institute of Standards and Technology (OLES/NIST), is taking the lead in putting together a set of common standards for the development and assessment of first-responder equipment. This effort is being undertaken within the context of the DOJ–DoD Interagency Board. The agencies expected to enter this agreement include OLES/NIST, the National Institute for Occupational Safety and Health, the National Fire Protection Association, and the Occupational Safety and Health Administration.

NIJ, through OLES/NIST and with the Technical Support Working Group (TSWG), is surveying and documenting available chemical and biological defense equipment. This will result in publication of user guidelines for personal protection, detection, and decontamination equipment. Data will include cost, equipment parameters, current users, existing test data, and ordering information.

Research and Development Efforts

- **First responder escape mask.** NIJ, through the Joint Program Steering Group (JPSG), is collaborating with TSWG to develop a short-duration protective mask that will protect first responders for enough time to exit the hazardous area, alert appropriate officials, and prevent others from entering the contaminated area. The mask must be lightweight, low-cost, and configured to be easily carried and quickly donned. It is intended for use in situations where there is little or no warning.

Concurrently, NIJ, through its Office of Law Enforcement Technology Commercialization (OLETC), is completing an assessment of practitioner requirements, the results of which will be incorporated into efforts resulting from this solicitation.

- **Lightweight chem-bio EOD suit testing.** NIJ, through JPSG, is sponsoring independent testing of the Med-Eng SRS-5 bomb suit coupled with various chemical and biological (C/B) protective undergarments and self-contained breathing apparatus (SCBA). The testing will be managed by the TSWG. The purpose of this testing is to determine the effectiveness of this C/B protective ensemble in providing C/B protection when subject to detonation of an improvised explosive device (IED).
- **Personal alarm monitor.** One of the identified needs in *The Inventory of State and Local Law Enforcement Technology Needs To Combat Terrorism* was for a wearable device providing indication of exposure to a wide variety of chemical and biological hazards. As a result, NIJ, in collaboration with TSWG, is sponsoring development and demonstration of a wearable, low-cost device that provides warning of exposure to hazardous chemical and biological agents in sufficient time for the wearer to take protective measures.
- **Threat assessment.** NIJ, through JPSG, is funding a first of its kind study to define the chemical and biological agents that first responders are most likely to encounter and that terrorists are most likely to use. This study is unique because it includes both a historical analysis of chemical and biological incidents and a scientific assessment of the physical properties of chemical and biological agents to determine the true threat they pose.

Sources of Further Information

Contacts:

- National Institute of Justice, Office of Science and Technology: 202-307-0645.
- National Law Enforcement and Corrections Technology Center-National: 800-248-2742 or asknlectc@nlectc.org.
- Office for State and Local Domestic Preparedness Support: 202-305-9887.
- Office of Law Enforcement Standards: 301-975-2757 or oles@nist.gov.
- Office of Law Enforcement Technology Commercialization: 888-306-5382 or oletc@nttc.edu.

Publications and Products:

- *Guide for the Selection of Chemical Agent and Toxic Industrial Material Detection Equipment for Emergency First Responders, NIJ Guide 100–00, Volume I.* NIJ Research Report (NCJ 184449), October 2000.
- *Guide for the Selection of Chemical Agent and Toxic Industrial Material Detection Equipment for Emergency First Responders, NIJ Guide 100–00, Volume II.* NIJ Research Report (NCJ 184450), October 2000.
- *Inventory of State and Local Law Enforcement Technology Needs To Combat Terrorism.* NIJ Research in Brief (NCJ 173384), 1998.
- *Protective Intelligence and Threat Assessment Investigations: A Guide for State and Local Law Enforcement Officials.* NIJ Research Report (NCJ 170612), July 1998.

Internet:

- Bureau of Justice Assistance: www.ojp.usdoj.gov/bja.
- Institute for Security Technology Studies, Dartmouth College: www.ists.dartmouth.edu.
- JUSTNET (National Law Enforcement and Corrections Technology Center system): www.nlectc.org.
- National Institute for Occupational Safety and Health: www.cdc.gov/niosh/homepage.html.
- National Institute of Justice: www.ojp.usdoj.gov/nij.
- National Institute of Justice, Office of Science and Technology: www.ojp.usdoj.gov/nij/sciencetech/welcome.html.
- National Institute of Standards and Technology: www.nist.gov.
- Occupational Safety and Health Administration: www.osha.gov.
- Office for State and Local Domestic Preparedness Support: www.ojp.usdoj.gov/osldps.
- Office of Justice Programs: www.ojp.usdoj.gov.
- Office of Law Enforcement Standards: www.oles.org.
- Office of Law Enforcement Technology Commercialization: www.oletc.org.
- Oklahoma City National Memorial Institute for the Prevention of Terrorism: www.mipt.org.

11. Transportation Infrastructure Security

Severe damage to or destruction of the critical national transportation infrastructures would dramatically affect the defense, economic security, and public welfare of the United States. There are 4 million miles of public roads on which 20 million trucks travel, 100,000 miles of railroad track carrying 1.2 million operating freight cars, and 6,000 transit entities that operate rapid transit rail and bus services.

Potential Funding Sources

[May be used for personnel, training, equipment, technical assistance, research, development, or implementation (see appendix C for details and contacts).]

- Edward Byrne Memorial State and Local Law Enforcement Assistance Discretionary Grants (Bureau of Justice Assistance).
- Edward Byrne Memorial State and Local Law Enforcement Assistance Formula Grants (Bureau of Justice Assistance).
- Municipal Fire and EMS Equipment and Training Program (Office for State and Local Domestic Preparedness Support).
- Office of Science and Technology general and directed solicitations (National Institute of Justice).
- State and Local Anti-Terrorism Training (SLATT) Program (Office for State and Local Domestic Preparedness Support).
- State Domestic Preparedness Equipment Support Program (Office for State and Local Domestic Preparedness Support).

Standards and Testing

No standards currently exist for technologies designed to protect the transportation infrastructure.

Research and Development Efforts

- **Mass transit protection sensor technology.** NIJ, through JPSG, is collaborating with the Washington Metropolitan Area Transit Authority (WMATA) and the Department of Energy to demonstrate the utility of a chemical detection monitor in a subway environment. The intent of the project is to develop a capability for protection against a chemical weapons attack through the installation of a prototype real-time early warning chemical detection and alarm system. This 3-year effort was initiated in September 1999.

Sources of Further Information

Contacts:

- Joint Program Steering Group: 703–351–8719.
- National Institute of Justice, Office of Science and Technology: 202–307–0645.
- National Law Enforcement and Corrections Technology Center–National: 800–248–2742 or asknlectc@nlectc.org.
- National Law Enforcement and Corrections Technology Center–Southeast: 800–292–4385.
- Office for State and Local Domestic Preparedness Support: 202–305–9887.

Publications and Products:

- *Land Transportation Security Technology—An Improved Response for a Changing Threat*. A video funded by the National Institute of Justice/Joint Program Steering Group and produced by Oak Ridge National Laboratory and the National Law Enforcement and Corrections Technology Center–Southeast. NLECTC–National, 1999.
- “Protecting Public Transportation From Terrorists.” *NIJ Journal*, Issue 235, March 1998.

Internet:

- Bureau of Justice Assistance: www.ojp.usdoj.gov/bja.
- Department of Energy: www.doe.gov.
- JUSTNET (National Law Enforcement and Corrections Technology Center system): www.nlectc.org.
- National Institute of Justice: www.ojp.usdoj.gov/nij.
- National Institute of Justice, Office of Science and Technology: www.ojp.usdoj.gov/nij/sciencetech/welcome.html.
- Office for State and Local Domestic Preparedness Support: www.ojp.usdoj.gov/osldps.
- Office of Justice Programs: www.ojp.usdoj.gov.

SECTION



COMMUNICATIONS AND INFORMATION TECHNOLOGY

In recent years, a tremendous amount of information has become available to law enforcement and corrections agencies that could be helpful in managing resources and solving crimes. Information technology (IT) can be applied to connect law enforcement and corrections agencies to one another, thus enabling them to share information. IT can sort, collate, and relate data—in some cases graphically—to assist police and corrections officers in managing scarce resources or in directly helping them to solve crimes. The technologies reviewed in this section include those designed to improve the communications interoperability of law enforcement and corrections jurisdictions so that, when necessary, they can easily work cooperatively (chapter 12); provide data to a computer so that images can be created or compared with other images in a database to help identify individuals (chapter 13); recover and/or enhance data captured on videotape or sound recordings (chapter 14); understand crime trends by mapping data about crimes (chapter 15); and develop guidelines and procedures to detect and solve electronic crimes (chapter 16). Although focused on law enforcement and corrections, efforts in this area are undertaken with the understanding that ensuring public safety in critical incidents requires a multidisciplinary response. Law enforcement and corrections must be able to effectively communicate and exchange information with other public safety disciplines (e.g., fire, HAZMAT, and emergency medical services).

12. Communications Interoperability

Abundant anecdotal evidence shows that units from two or more law enforcement agencies engaged in a joint operation (such as a high-speed pursuit) frequently cannot communicate directly with each other. This inability to communicate may result from the use of different radio frequencies, varying and proprietary protocols or system architectures, or operational constraints. A variety of technologies are now available to help resolve this problem.

Potential Funding Sources

[May be used for personnel, training, equipment, technical assistance, research, development, or implementation (see appendix C for details and contacts).]

- Crime Identification Technology Act Programs (OJP-wide).
- Court Discretionary Grant Program (Drug Courts Program Office).
- Edward Byrne Memorial State and Local Law Enforcement Assistance Discretionary Grants (Bureau of Justice Assistance).
- Edward Byrne Memorial State and Local Law Enforcement Assistance Formula Grants (Bureau of Justice Assistance).
- Grants to Encourage Arrest Policies (Violence Against Women Office).
- Innovative Community Policing Grants (Office of Community Oriented Policing Services).
- Juvenile Accountability Incentive Block Grants (JAIBG) Program (Office of Juvenile Justice and Delinquency Prevention).
- Juvenile Justice Formula Grants Program (Office of Juvenile Justice and Delinquency Prevention).
- Local Law Enforcement Block Grants Program (Bureau of Justice Assistance).
- Making Officer Redeployment Effective (MORE) Grants (Office of Community Oriented Policing Services).
- Municipal Fire and EMS Equipment and Training Program (Office for State and Local Domestic Preparedness Support).
- Office of Science and Technology general and directed solicitations (National Institute of Justice).
- State Domestic Preparedness Equipment Support Program (Office for State and Local Domestic Preparedness Support).

Standards and Testing

- *Fixed and Base Station Antennas: NIJ Standard–0204.02*. June 1998. The technologies developed in this area are regulated by the Federal Communications Commission (FCC), which has issued a number of different operating standards that include standards for the additional 24-megahertz (MHz) bandwidth recently made available to the public safety community (see below). For details, see the FCC Web site at www.fcc.gov.
- *Mobile Antennas (Revision), NIJ Standard–0205.02*. October 1997. Supersedes NIJ Standard–0205.01, dated May 1989, and NILECJ–STD–0205.00, dated May 1974. This standard establishes minimum performance requirements and methods of test for antennas that are mounted on police vehicles or other mobile platforms used by law enforcement agencies. This revision incorporates the latest recommended methods and procedures of industry standards related to communications antennas and environmental test procedures.
- *Body-Worn FM Transmitters (Revision), NIJ Standard–0214.01*. January 1990. Supersedes NILECJ–STD–0214.00, dated December 1978. This standard establishes performance requirements and methods of test for body-worn frequency-modulated transmitters of 3 watts or less used by law enforcement agencies. This revision modifies the method of test for radiated spurious emission measurements. However, the performance requirement remains unchanged.
- *Development of advanced wireless technology standards*. Through NIJ’s Office of Law Enforcement Standards (OLES), located within the National Institute of Standards and Technology (NIST), NIJ has partnered with the National Telecommunications and Information Administration (NTIA) and other key organizations to identify, develop, and adopt open architecture standards for voice, data, image, and video communications systems for the public safety community.

Research and Development Efforts

- **Advanced Generation of Interoperability for Law Enforcement (AGILE) Program**. AGILE is an NIJ-developed, focused, comprehensive program to address interoperability. The AGILE Program was created in 1998 to pull together all interoperability projects currently under way at NIJ. AGILE’s strategy consists of a multifaceted approach that addresses both the short-term (interim) interoperability solutions and long-term interoperability implemented through standardization encompassing wireless telecommunications and information technology applications. Under the AGILE Program, NIJ has worked with the Alexandria, Virginia, police department to test and evaluate the ACU–1000—an audio gateway technology that ties incompatible radio systems together—in an operational environment.
- **Software radio interoperation device (SRID)**. Under an award from NIJ, this project will include designing, developing, testing, analyzing, and reporting the success of a SRID prototype. This award will produce a software radio interoperation device that performs as a reprogrammable patch between

a Project 25 radio and legacy FM and AM systems and is capable of covering frequencies approximately between 30 and 512 MHz.

- **State and Local Communications Interoperability Analysis Program.** Operated by the National Law Enforcement and Corrections Technology Center–Rocky Mountain, and the (Federal) Public Safety Wireless Network Program, this program was established to conduct a survey of State and local agencies to determine in quantitative terms the extent and magnitude of the communications interoperability problem. In addition, the survey determined projected growth in the need for voice and data communications over the next decade. The results show a severe problem and provide guidance to policymakers and planners at all governmental levels as attempts are made to correct the situation.

The FCC and others have recently made available an additional 24 MHz that will be dedicated to public safety use. NIJ is working with a variety of governmental and professional organizations to ensure that this allocation and any reallocation of the existing radio spectrum are optimized.

Sources of Further Information

Contacts:

- National Institute of Justice, Office of Science and Technology: 202–307–0645.
- National Law Enforcement and Corrections Technology Center–National: 800–248–2742 or asknlectc@nlectc.org.
- National Law Enforcement and Corrections Technology Center–Rocky Mountain: 800–416–8086.
- National Law Enforcement and Corrections Technology Center–West: 888–548–1618.
- Office for State and Local Domestic Preparedness Support: 202–305–9887.
- Office of Law Enforcement Standards: 301–975–2757 or oles@nist.gov.

Publications and Products:

- *Antenna System Guide, NIJ Guide 202–00*. April 2001.
- “Car 54: Where Are You?” *TechBeat*, NLECTC, Summer 1998.
- *Fixed and Base Station Antennas: NIJ Standard–0204.02*. June 1998.
- “Going Mobile in Law Enforcement.” *NIJ Journal*, Issue 238, January 1999.
- *Helicopters in Pursuit Operations*. NIJ Research in Action (NCJ 171695), August 1998.
- “Interoperability: Why Can’t We Talk?” *NIJ Journal*, Issue 243, April 2000.
- “‘Land Rush’ of the 1990s.” *TechBeat*, NLECTC, Summer 1998.
- *New Technology Batteries Guide: NIJ Guide 200–98*. October 1998.

- “State and Local Law Enforcement Wireless Communication and Interoperability: A Quantitative Analysis.” Unpublished report (NCJ 168961), January 1998.
- *Understanding Wireless Communications in Public Safety: A Guidebook to Technology, Issues, Planning, and Management*. NLECTC–Rocky Mountain (NCJ 180211), March 2000.
- “Why Can’t We Talk?” *When Lives Are at Stake*. NIJ video, 1998.
- *Wireless Communications and Interoperability Among State and Local Law Enforcement Agencies*. NIJ Research in Brief (NCJ 168945), January 1998.

Internet:

- Advanced Generation of Interoperability for Law Enforcement (AGILE) Program: www.agileprogram.org.
- Bureau of Justice Assistance: www.ojp.usdoj.gov/bja.
- Federal Communications Commission: www.fcc.gov.
- JUSTNET (National Law Enforcement and Corrections Technology Center system): www.nlectc.org.
- National Institute of Justice: www.ojp.usdoj.gov/nij.
- National Institute of Justice, Office of Science and Technology: www.ojp.usdoj.gov/nij/sciencetech/welcome.html.
- National Telecommunications and Information Administration: www.ntia.doc.gov.
- Office for State and Local Domestic Preparedness Support: www.ojp.usdoj.gov/osldps.
- Office of Community Oriented Policing Services: www.usdoj.gov/cops.
- Office of Justice Programs: www.ojp.usdoj.gov.
- Office of Law Enforcement Standards: www.oles.org.

13. Biometric Identification

Biometric identification technologies use a particular biological aspect of the human body to recognize or confirm that person's identity. These technologies can be applied in the criminal justice system to enhance access control and identity verification in correctional facilities, and as an investigative tool for identifying missing and exploited children as well as criminals captured by surveillance systems. Technologies in the research stage, under development, and in use in the field include facial recognition technologies and biometrically enhanced smart cards.

Potential Funding Sources

[May be used for personnel, training, equipment, technical assistance, research, development, or implementation (see appendix C for details and contacts).]

- Edward Byrne Memorial State and Local Law Enforcement Assistance Formula Grants (Bureau of Justice Assistance).
- Edward Byrne Memorial State and Local Law Enforcement Assistance Discretionary Grants (Bureau of Justice Assistance).
- Innovative Community Policing Grants (Office of Community Oriented Policing Services).
- Local Law Enforcement Block Grants Program (Bureau of Justice Assistance).
- Office of Science and Technology general and directed solicitations (National Institute of Justice).
- Violent Offender Incarceration/Truth-in-Sentencing (VOI/TIS) Incentive Grants Program (Corrections Program Office).

Standards and Testing

At present, there are no standards related to biometric identification.

Research and Development Efforts

- **Algorithmic Image Matching: Police Technology R&D Project.** With COPS Office funding, the city of Santa Ana (California) has successfully developed, integrated, tested, and implemented face pattern recognition algorithms into its current generation automated mug shot system—MugMatch—to provide a real-time, face-to-face search capability from a PC.

The Office of Law Enforcement Technology Commercialization (OLETC) has developed a computer software program that lets investigators recreate the human head in three dimensions and then compare it to or search through 1 million faces in less than 1 second. The program does not require expensive

equipment; in fact, it will run on a PC equipped with a 200-MHz Pentium® processor. OLETC is currently working on commercialization of the technology.

- **Face Recognition and Intelligent Software Development Project.** This NIJ-funded project involves the development and integration of specialized software search agents with biometric identification “modules.” To date, the project has succeeded in integrating face recognition with still photographs, Web-searching agents, digital signature algorithm, and Internet-based utilities. Also under development is the integration of face recognition for video, age progression, newsgroup search agents, and text categorization.
- **Face Recognition Technology for Internet-Based Gang Tracking Project.** In addition to the previous project, a prototype system, funded by NIJ and the COPS Office, was developed to add the capability for face recognition to queries submitted to the Gang Reporting Evaluation and Tracking (GREAT) system using a photograph for matches. The prototype database matching software engine was integrated into the existing system so that it could be queried using photographs and thereby circumvent the false identity cards and information often presented by gang members.

Sources of Further Information

Contacts:

- National Institute of Justice, Office of Science and Technology: 202–307–0645.
- National Law Enforcement and Corrections Technology Center–National: 800–248–2742 or asknlectc@nlectc.org.
- Office of Law Enforcement Technology Commercialization: 888–306–5382 or oletc@nttc.edu.

Publications and Products:

- “Biometrics in Corrections.” *TechBeat*, NLECTC, Fall 2000.

Internet:

- Bureau of Justice Assistance: www.ojp.usdoj.gov/bja.
- JUSTNET (National Law Enforcement and Corrections Technology Center system): www.nlectc.org.
- National Institute of Justice: www.ojp.usdoj.gov/nij.
- National Institute of Justice, Office of Science and Technology: www.ojp.usdoj.gov/nij/sciencetech/welcome.html.
- Office of Community Oriented Policing Services: www.usdoj.gov/cops.
- Office of Justice Programs: www.ojp.usdoj.gov.
- Office of Law Enforcement Technology Commercialization: www.oletc.org.

14. Information Sharing and Analysis

Significant efforts are put into the collection of data by the criminal justice community. Data can come in the form of internal departmental memorandums, police arrest and court records, or crime statistics and trends. Data can also come from video cameras and audio recording devices often used in surveillance activities. However, for this information to be fully utilized, there must be a way to convey and analyze the information both internally, within a department, and externally, among agencies. In addition, data obtained from video and audio recordings may require enhancement and analysis to render it useful.

Potential Funding Sources

[May be used for personnel, training, equipment, technical assistance, research, development, or implementation (see appendix C for details and contacts).]

- Crime Identification Technology Act (CITA) Programs (OJP-wide).
- Drug Court Discretionary Grant Program (Drug Courts Program Office).
- Edward Byrne Memorial State and Local Law Enforcement Assistance Discretionary Grants (Bureau of Justice Assistance).
- Edward Byrne Memorial State and Local Law Enforcement Assistance Formula Grants (Bureau of Justice Assistance).
- Grants to Encourage Arrest Policies (Violence Against Women Office).
- Innovative Community Policing Grants (Office of Community Oriented Policing Services).
- Juvenile Accountability Incentive Block Grants (JAIBG) Program (Office of Juvenile Justice and Delinquency Prevention).
- Juvenile Justice Formula Grants Program (Office of Juvenile Justice and Delinquency Prevention).
- Local Law Enforcement Block Grants Program (Bureau of Justice Assistance).
- Making Officer Redeployment Effective (MORE) Grants (Office of Community Oriented Policing Services).
- National Criminal History Improvement Program (NCHIP) (Bureau of Justice Statistics).
- National Incident-Based Reporting System (NIBRS) Implementation Program (Bureau of Justice Statistics).

- Office of Science and Technology general and directed solicitations (National Institute of Justice).
- State Justice Statistics Program for Statistical Analysis Centers (Bureau of Justice Statistics).
- STOP Violence Against Women Formula Grants (Violence Against Women Office).
- Victims of Crime Act Victim Assistance (Office for Victims of Crime).
- Violence Against Women Discretionary Grants for Indian Tribal Governments (Violence Against Women Office).

Standards and Testing

At present, there are no standards related to information sharing and analysis.

Research and Development Efforts

- **E-Crime Clearinghouse.** NLECTC–Northeast has established a Cooperative Research and Development Center Agreement between the Air Force Research Laboratory/Information Directorate and Utica College’s Computer Forensics Research and Development Center. The Northeast facility is developing a Web-based clearinghouse for electronic crime and computer forensics contacts, tools, and training.
- **FALCON (Future Alert and Contact Network).** Using funding from NIJ and the COPS Office, the Charlotte-Mecklenburg Police Department will design and develop an information management system that will monitor incoming records for a particular series of officer-defined events and then notify that officer when the events occur. This project will analyze the preexisting database network system, design and develop the code for the FALCON system and the interface to the electronic mail and pager, and debug the system code as necessary during the eight-officer site pilot test.
- **InfoTech Program.** As part of the AGILE Program, NIJ, through JPSG, is developing an informational technology system providing interregional information sharing among law enforcement agencies (LEAs). This system allows LEAs to share information using existing systems and networks. Each agency decides what is to be shared and with whom. InfoTech is introducing new technologies and methods for ease of use, security and privacy, and information exchange—while minimizing cost and allowing agencies to set their own policies regarding sharing and security.

The demonstrations involving the sheriffs’ offices in Florida’s Monroe and Brevard Counties, initiated in May 1998, are now fully operational and being used by investigators and court personnel. Current efforts in FY 2000 include linking regional information systems in San Diego County, California; the addition of more agencies in Florida; the integration of statewide information systems in Oregon; and, through the COPS technology program, expansion into Virginia.

- **Vulnerability assessments.** NLECTC's Southeast facility is working with the South Carolina Research Authority and Oak Ridge National Laboratory to conduct vulnerability assessments of law enforcement agencies' information management systems. NLECTC is conducting a nationwide assessment of police and sheriffs' departments to determine current uses and practices, unsatisfied needs, and available information management systems.
- **Northeast Gang Information System (NEGIS).** NEGIS is a five-database computer system originally developed in Massachusetts and shared by and serving Connecticut, Massachusetts, New York, Rhode Island, and Vermont. The system allows jurisdictions to share information on gangs through e-mail, nonsensitive documents, an investigative lead database, and a gang intelligence database. The equipment was provided and the training was developed under an NIJ grant to the Police Executive Research Forum (PERF).

Sources of Further Information

Contacts:

- National Institute of Justice, Office of Science and Technology: 202-307-0645.
- Joint Program Steering Group: 703-351-8719.
- National Law Enforcement and Corrections Technology Center-National: 800-248-2742 or asknlectc@nlectc.org.
- National Law Enforcement and Corrections Technology Center-Northeast: 888-338-0584.
- National Law Enforcement and Corrections Technology Center-West: 888-548-1618.
- Office of Juvenile Justice and Delinquency Prevention (JAIBG funds): 202-307-5924 or ojjdp.ncjrs.org/jaibg.
- Police Executive Research Forum (PERF): 202-466-7820.

Publications and Products:

- "Coplink: Database Detective." *TechBeat*, NLECTC, Summer 1999.
- "Debugging the Millennium Bug." *TechBeat*, NLECTC, Spring 1999.
- "A FALCON'S Eye." *TechBeat*, NLECTC, Fall 1999.
- "Ganging Up on Gangs." *TechBeat*, NLECTC, Winter 1999.
- *A Guide for Applying Information Technology in Law Enforcement*. NLECTC, March 2001.
- "The IDENT System: Putting 'Structure to the Chaos of the Border.'" *NIJ Journal*, Issue 237, October 1998.

- “The LEO Link.” *TechBeat*, NLECTC, Summer 1999.
- “Making Information Technology Work.” *TechBeat*, NLECTC, Winter 2000.
- “Ohio Inmates Get ‘Carded.’” *TechBeat*, NLECTC, Summer 1998.
- *Police Department Information Systems Technology Enhancement Project (ISEP)*. COPS Report, October 1998.
- “Putting the Fire Out in Utica.” *TechBeat*, NLECTC, Fall 1998.
- “A Reach Across Jurisdictions.” *TechBeat*, NLECTC, Winter 2000.
- “Smart Cards: An Information Tool for the Future.” *NIJ Journal*, Issue 236, July 1998.
- *Survey of State Criminal History Information Systems, 1997*. Prepared by SEARCH for the U.S. Department of Justice, Bureau of Justice Statistics (NCJ 175041), April 1999.
- “Taking the Fight Out in Lakewood.” *TechBeat*, NLECTC, Fall 1998.
- “Thinking Globally to Act Locally: NIJ Improves Worldwide Access to Criminal Justice Information.” *NIJ Journal*, Issue 230, February 1996.
- “Wanted: Clinkers, Clunkers, and Lemons.” *TechBeat*, NLECTC, Summer 1998.
- “Where Users Aren’t Losers.” *TechBeat*, NLECTC, Summer 1999.

Internet:

- Bureau of Justice Assistance: www.ojp.usdoj.gov/bja.
- Bureau of Justice Statistics: www.ojp.usdoj.gov/bjs.
- JUSTNET (National Law Enforcement and Corrections Technology Center system): www.nlectc.org.
- Office of Community Oriented Policing Services: www.usdoj.gov/cops.
- Office of Justice Programs: www.ojp.usdoj.gov.
- Office of Juvenile Justice and Delinquency Prevention: www.ojjdp.ncjrs.org.

15. Crime Mapping

One of the most significant advances in the area of information technology in the criminal justice field has been crime mapping using geographic information systems (GIS). Crime mapping looks at the spatial and temporal dimensions of crime and enhances the ability of law enforcement agencies to analyze crime in the context of other social forces, such as the locations of various types of crimes, public benefit distribution, health care, and demographic patterns.

Potential Funding Sources

[May be used for personnel, training, equipment, technical assistance, research, development, or implementation (see appendix C for details and contacts).]

- Crime Mapping Research Center Fellowship Program (National Institute of Justice).
- Local Law Enforcement Block Grants Program (Bureau of Justice Assistance).
- Edward Byrne Memorial State and Local Law Enforcement Assistance Discretionary Grants (Bureau of Justice Assistance).
- Edward Byrne Memorial State and Local Law Enforcement Assistance Formula Grants (Bureau of Justice Assistance).
- Innovative Community Policing Grants (Office of Community Oriented Policing Services).
- Juvenile Justice Formula Grants Program (Office of Juvenile Justice and Delinquency Prevention).
- Juvenile Accountability Incentive Block Grants (JAIBG) Program (Office of Juvenile Justice and Delinquency Prevention).
- Making Officer Redeployment Effective (MORE) Grants (Office of Community Oriented Policing Services).
- Office of Science and Technology general and directed solicitations (National Institute of Justice).

Standards and Testing

At present, there are no standards related to crime mapping technologies.

Research and Development Efforts

The Crime Mapping Research Center supports the development of analytic mapping in criminal justice agencies. One area of interest is the use of GIS to support multijurisdictional data sharing projects—Strategic Approaches to Community Safety Initiative (SACSI) and the Community,

Mapping, Planning, and Analysis for Safety Strategies (COMPASS) initiative. A key component of both initiatives is the sharing of data across multiple agencies to promote collaborative problem solving. Another area of breaking research involves six grants that are moving beyond description and into prediction. For example, one grant is testing the “broken windows” hypothesis and another is examining the behavior of drug dealers in the creation of illegal drug markets. The drug market research attempts to predict where drug markets tend to form and where they are likely to be displaced if police action is taken.

Technology assistance for State and local law enforcement and corrections agencies is available through the NLECTC Crime Mapping and Analysis Program (CMAP). NLECTC will provide technology assistance, working directly with the requesting agency to determine the level and extent of service needed. Agencies may send their personnel to NLECTC offices to attend training, conduct research, assess software and hardware, and use the Center’s resources on a first-come, first-served basis.

Sources of Further Information

Contacts:

- The Crime Mapping Research Center, National Institute of Justice: 202–514–3431 or cmrc@ojp.usdoj.gov.
- Crime Mapping and Analysis Program, National Institute of Justice National Law Enforcement and Corrections Technology Center–Rocky Mountain: 800–416–8086 or nlectc@du.edu; or National Law Enforcement and Corrections Technology Center–Southeast: 800–292–4385 or nlectc-se@nlectc-se.org.
- National Institute of Justice, Office of Science and Technology: 202–307–0645.

Publications and Products:

- *Crime Mapping and Analysis by Community Organizations in Hartford, Connecticut*. NIJ Research in Brief (NCJ 185333), March 2001.
- *Integrating Community Policing and Computer Mapping: Assessing Issues and Needs Among COPS Office Grantees*. Police Foundation, COPS Office, February 2000.
- *Mapping Crime: Principle and Practice*. Research Report (NCJ 178919), December 1999.
- *Mapping Out Crime: Providing 21st Century Tools for Safe Communities*. Report of the Task Force on Crime Mapping and Data-Driven Management, U.S. Department of Justice, National Partnership for Reinventing Government. July 1999.
- “Problem Solving With Maps.” *NIJ Journal*, Issue 241, October 1999.
- *Users’ Guide to Crime Mapping Software for Police Agencies*. Police Foundation, COPS Office, February 2000.
- See the CMRC Web site for a list of the publications the Center offers: www.ojp.usdoj.gov/cmrc/pubs/welcome.html.

- Free crime mapping software is available through CMRC.
 - *CrimeStat 1.0*, a spatial statistics program for the analysis of crime incident locations, was developed under a grant from NIJ. The program provides supplemental statistical tools to aid law enforcement agencies and criminal justice researchers in their crime mapping efforts. The program is Windows based; interfaces with most desktop GIS programs; inputs incident locations in dBASE® dbf, shp, or ASCII format using either spherical or projected coordinates; calculates various spatial statistics; and writes graphical objects to ArcView®, MapInfo®, Atlas*GIS™, Surfer® for Windows, and ArcView Spatial Analyst®. Free download information is available at www.ojp.usdoj.gov/cmrc/tools/welcome.html.
 - *Community Policing Beat Book*, developed under a cooperative agreement between NIJ and the Environmental Systems Research Institute using MapObjects, is designed for use by officers on laptops in their cars or at substations. Free download information is available at www.ojp.usdoj.gov/cmrc/tools/welcome.html.
 - *Crime Analysis Extension for ArcView* is designed to provide easy-to-use tools for geographic crime analysis, data management, mapping, and reporting. The software was developed under a cooperative agreement between NIJ and the Environmental Systems Research Institute. Free download information is available at www.ojp.usdoj.gov/cmrc/tools/welcome.html.

Internet:

- Bureau of Justice Assistance: www.ojp.usdoj.gov/bja.
- Crime Mapping Research Center: www.ojp.usdoj.gov/cmrc.
- JUSTNET (National Law Enforcement and Corrections Technology Center system): www.nlectc.org.
- National Institute of Justice: www.ojp.usdoj.gov/nij.
- National Institute of Justice, Office of Science and Technology: www.ojp.usdoj.gov/nij/sciencetech/welcome.html.
- Office of Community Oriented Policing Services: www.usdoj.gov/cops.
- Office of Justice Programs: www.ojp.usdoj.gov.

16. Electronic Crime/Cybercrime

With the advent of the Internet has come a whole new category of crime that includes fraud; theft of services and data; copyright infringement; destruction of data through computer sabotage (viruses); and acts causing inconvenience to agencies or compromising sensitive, secret, or confidential government and business functions. Because electronic crime is technology driven, law enforcement agencies will encounter a wide variety of technologies and criminal tactics. Because these technologies can be expected to change rapidly, law enforcement agencies must be prepared to use technology, either directly or indirectly, to frustrate and apprehend offenders.

Potential Funding Sources

[May be used for personnel, training, equipment, technical assistance, research, development, or implementation (see appendix C for details and contacts).]

- Crime Identification Technology Act Programs (OJP-wide).
- Institute for Security Technology Studies, Dartmouth College (National Institute of Justice).
- Office of Science and Technology general and directed solicitations (National Institute of Justice).

Standards and Testing

Through the Office of Law Enforcement Standards (OLES), the National Institute of Justice is establishing the capability to validate computer forensic software and other computer software, including operating systems and various types of applications software. This capability is required to ensure that computer forensic software tools provide consistent, accurate, and objective test results. The validation capability will also establish software configuration standards against which various operating systems and software applications may be compared for their authenticity. Validation testing development work is being performed by the National Institute of Standards and Technology (NIST), and the Department of Defense Computer Forensics Laboratory is providing investigative expertise.

Research and Development Efforts

NIJ completed a comprehensive assessment of State and local law enforcement resources needed to combat electronic crime. This assessment was motivated by a similar assessment that was performed earlier by the National Cybercrime Training Partnership (NCTP). In the NIJ assessment, input was requested from 126 members of State and local criminal justice agencies representing all 50 States. Respondents were asked to indicate their current and near-future needs for combating electronic crime. Based on an analysis of the needs expressed by the State and local agency representatives, NIJ asked a panel of experts in the field of electronic crime to draw appropriate recommendations for the assessment. The full report of the needs assessment, *Electronic Crime Needs for State and Local Law Enforcement*, and a summary of the recommendations, *State and Local Law Enforcement Needs to Combat Electronic Crime*, are available (see listings under Publications and Products).

OLES and NIST have initiated efforts to create a National Software Library for NIJ. This library will initially contain known file filters (KFF) and other support software for the FBI's Automated Computer Examination System (ACES) forensic software tool. In time, the library may contain other computer forensic software tools, including commercial off-the-shelf versions, and software validation standards.

NIJ is working with OLES, the U.S. Secret Service (USSS), the FBI, NCTP, local and State agencies, and industry to produce a series of seven quick reference guides for handling electronic investigations. These guides will be derived from information provided by field investigators, crime lab analysts, litigation experts, and others, by way of a Technical Work Group (TWG) strategy employed by NIJ. Collectively, the series will cover the spectrum of evidence handling from crime scene awareness to courtroom presentation. The first volume, *Electronic Crime Scene Investigation: A Guide for First Responders*, is planned for publication in early 2001. Additional volumes will cover technology management, analysis of evidence, investigative use of technology, investigation of technology-based crime, forensic laboratory setup, and courtroom presentation of electronic evidence.

NIJ is also supporting a national cybercrime prevention education campaign for juveniles. The campaign will promote responsible computer and cyberspace behavior. NIJ will partner with the Information Technology Association of America (ITAA), the Bureau of Justice Assistance (BJA), the Office of Juvenile Justice and Delinquency Prevention (OJJDP), and the Computer Crime and Intellectual Property Section (CCIPS).

Sources of Further Information

Contacts:

- Institute for Security Technology Studies, Dartmouth College: 603-646-0698 or richard.a.scribner@dartmouth.edu.
- National Center for Forensic Science: 407-823-6469 or natlctr@mail.ucf.edu.
- National Forensic Science Technology Center: 727-549-6067 or admin@nfstc.org.
- National Institute of Justice, Office of Science and Technology: 202-307-0645.
- National Law Enforcement and Corrections Technology Center-National: 800-248-2742 or asknlectc@nlectc.org.
- National Law Enforcement and Corrections Technology Center-Northeast: 888-338-0584.
- National Law Enforcement and Corrections Technology Center-West: 888-548-1618.
- National Cybercrime Training Partnership: 304-366-9094 or 877-NCTP-ORG (877-628-7674).
- National White Collar Crime Center: 877-NCTP-ORG (877-628-7674).
- Office of Law Enforcement Standards: 301-975-2757 or oles@nist.gov.

Publications and Products:

- “Angels on the Internet.” *Techbeat*, NLECTC, Winter 2001.
- *Best Practices for Seizing Electronic Evidence*. A joint project of the International Association of Chiefs of Police and the U.S. Secret Service. Available at www.theiacp.org/pubinfo/pubs or www.ustreas.gov/usss.
- “Catching the Cyber Crook.” *TechBeat*, NLECTC, Summer 2000.
- *Electronic Crime Needs Assessment for State and Local Law Enforcement*. NIJ Research Report (NCJ 186276), March 2001.
- *Electronic Crime Scene Investigation: A Guide for First Responders*. NIJ Guide, available in late 2001.
- *Needs and Prospects for Crime-Fighting Technology: The Federal Role in Assisting State and Local Law Enforcement*, by William Schwabe. Prepared for the White House Office of Science and Technology Policy by RAND (publication MR-1101.0-OSTP), June 1999.
- “Policing Internet Use.” *TechBeat*, NLECTC, Summer 2000.
- *State and Local Law Enforcement Needs to Combat Electronic Crime*. NIJ Research in Brief (NCJ 183451), August 2000.
- “This Is One Crime That Didn’t Compute.” *TechBeat*, NLECTC, Winter 1999.

Internet:

- Bureau of Justice Assistance: www.ojp.usdoj.gov/bja.
- Computer Crime and Intellectual Property Section, U.S. Department of Justice: www.cybercrime.gov.
- Department of Defense Computer Forensics Laboratory: www.dcfll.gov.
- Institute for Security Technology Studies, Dartmouth College: www.ists.dartmouth.edu.
- JUSTNET (National Law Enforcement and Corrections Technology Center system): www.nlectc.org.
- National Center for Forensic Science: ncfs.ucf.edu.
- National Cybercrime Training Partnership: www.nctp.org.
- National Fraud Complaint Management Center-Internet Fraud Complaint Center (National White Collar Crime Center and the Federal Bureau of Investigation): www.ifccfbi.gov.
- National Institute of Justice: www.ojp.usdoj.gov/nij.
- National Institute of Justice, Office of Science and Technology: www.ojp.usdoj.gov/nij/sciencetech/welcome.html.

- National Institute of Standards and Technology: www.nist.gov.
- National White Collar Crime Center: www.nw3c.org and www.cybercrime.org.
- Office of Justice Programs: www.ojp.usdoj.gov.
- Office of Juvenile Justice and Delinquency Prevention: www.ojjdp.ncjrs.org.
- Office of Law Enforcement Standards: www.oles.org.
- U.S. Secret Service: www.treas.gov/usss.

SECTION

IV.

INVESTIGATIVE AND FORENSIC SCIENCES

Investigative and forensic sciences—those scientific disciplines, technologies, and methods supporting the investigation of crime and the prosecution of criminals—play a critical role in our Nation’s system of justice. High-profile cases seen in courts in recent years have highlighted the importance of such areas as DNA analysis; fingerprint comparison; trace evidence analysis; physical evidence identification, collection, and preservation; questioned document analysis; and eyewitness interviewing and identification. The Attorney General’s interest in the rightful conviction of criminals as well as the exoneration of innocent parties has prompted a significant investment in improving Office of Justice Programs (OJP) efforts in the area of investigative and forensic sciences. These efforts are managed primarily through the Investigative and Forensic Sciences Division, Office of Science and Technology, National Institute of Justice (NIJ), and focus on supporting State and local law enforcement agencies. NIJ works with other OJP Bureaus in administering programs in this area, including the Bureau of Justice Assistance (BJA) and the Bureau of Justice Statistics (BJS). NIJ’s work is also coordinated with other DOJ and Federal agencies concerned with forensic science and criminal investigation, including the Federal Bureau of Investigation, the Drug Enforcement Agency, the Bureau of Alcohol, Tobacco and Firearms, and the U.S. Secret Service, as well as the Departments of Defense, Commerce, and Energy.

This section describes areas in which OJP has made and continues to make significant investments toward improving forensic technologies and services and investigative procedures, including support to public crime laboratories (chapter 17), research and development in innovative and enhanced forensic technologies (chapter 18), and development of investigative protocols and recommended procedures for law enforcement practitioners (chapter 19).

17. Crime Laboratory Assistance

Public crime laboratories historically have suffered from low funding, understaffing, and high personnel turnover, leaving them in some cases with inconsistent standards, inexperienced personnel, and tremendous backlogs. Nevertheless, reliable and timely forensic analytical results from these labs are essential to solving crime. The equipment, training, and laboratory modifications required to increase State and local crime lab capacities and bring them up to national quality assurance standards come at a cost beyond the reach of most agencies. Federal funding support, in the form of grants to State and local agencies, is therefore critical to the improvement of crime laboratory services.

Potential Funding Sources

[May be used for personnel, training, equipment, technical assistance, research, development, or implementation (see appendix C for details and contacts).]

- Convicted Offender DNA Backlog Reduction Program (National Institute of Justice).
- Crime Identification Technology Act Programs (OJP-wide).
- Crime Laboratory Improvement Program (CLIP) (National Institute of Justice).
- DNA Five-Year Research and Development Program (National Institute of Justice).
- Edward Byrne Memorial State and Local Law Enforcement Assistance Discretionary Grants (Bureau of Justice Assistance).
- Edward Byrne Memorial State and Local Law Enforcement Assistance Formula Grants (Bureau of Justice Assistance).
- Office of Science and Technology general and directed solicitations (National Institute of Justice).

Standards and Testing

The National Institute of Justice (NIJ) has worked with the FBI's DNA Advisory Board and Technical Working Group on DNA Analysis Methods (TWGDAM, now known as SWGDAM—Scientific Working Group on DNA Analysis Methods) in recent years to advocate national standards for DNA testing and analyst training and education requirements. The concept of a national DNA database of convicted offenders, the FBI's Combined DNA Index System (CODIS), necessitates the implementation of statewide and nationwide standard testing methodologies. NIJ funds for DNA improvements are awarded only to laboratories certifying compliance with these standards. Quality standards are also in place for other forensic disciplines and must be met for laboratories to obtain accreditation in those areas.

Research and Development Efforts

No research and development projects are currently being pursued in this area.

Sources of Further Information

Contacts:

- Bureau of Justice Assistance Clearinghouse: 800-688-4252.
- Bureau of Justice Statistics Clearinghouse: 800-732-3277.
- National Center for Forensic Science: 407-823-6469 or natlctr@mail.ucf.edu.
- National Forensic Science Technology Center: 727-549-6067 or admin@nfstc.org.
- National Institute of Justice, Office of Science and Technology: 202-307-0645.
- National Law Enforcement and Corrections Technology Center-National: 800-248-2742 or asknlectc@nlectc.org.
- Office of Law Enforcement Standards: 301-975-2757 or oles@nist.gov.

Publications and Products:

- “Building A Forensic Laboratory.” *TechBeat*, NLECTC, Spring 1999.
- *Forensic Laboratories: Handbook for Facility Planning, Design, Construction, and Moving*. NIJ Research Report (NCJ 168106), April 1998.
- *Forensic Sciences: Review of Status and Needs*. NIJ Issues and Practices Report (NCJ 173412), 1999.

Internet:

- Bureau of Justice Assistance: www.ojp.usdoj.gov/bja.
- Federal Bureau of Investigation DNA Advisory Board: www.for-swg.org/swgdamin.htm.
- National Institute of Justice: www.ojp.usdoj.gov/nij.
- JUSTNET (National Law Enforcement and Corrections Technology Center system): www.nlectc.org.
- Office of Justice Programs: www.ojp.usdoj.gov.
- Office of Law Enforcement Standards: www.oles.org.
- Crime Identification Technology Act Programs (CITA): www.ojp.usdoj.gov/cita.

18. Forensic Technology Research and Development

Forensic science areas such as DNA, trace evidence, ballistics, toxicology, impression evidence (including fingerprints), and questioned documents must have demonstrated scientific foundations to yield strong evidence in court. Recent challenges to the admissibility of fingerprint and questioned document analyses underscore this need. Advances already made in the field of DNA testing are an example of the type of research, development, and validation needed in all forensic areas that can provide solutions allowing forensic practitioners with limited resources to work more economically while improving the quality of their analyses. Although the science of DNA has been able to overcome past court challenges with some success, advanced technology development in this area can further enhance the discriminatory power and speed of analysis while reducing cost.

Potential Funding Sources

[May be used for personnel, training, equipment, technical assistance, research, development, or implementation (see appendix C for details and contacts).]

- Crime Identification Technology Act Programs (OJP-wide).
- DNA Five-Year Research and Development Program (National Institute of Justice).
- Edward Byrne Memorial State and Local Law Enforcement Assistance Discretionary Grants (Bureau of Justice Assistance).
- Edward Byrne Memorial State and Local Law Enforcement Assistance Formula Grants (Bureau of Justice Assistance).
- Local Law Enforcement Block Grants Program (Bureau of Justice Assistance).
- Office of Science and Technology general and directed solicitations (National Institute of Justice).

Standards and Testing

Laboratory accreditation by the American Society of Crime Laboratory Directors–Laboratory Accreditation Board (ASCLD–LAB) in all areas of forensic science requires that quality assurance measures be in place at the lab. Quality assurance standards have been developed by the FBI’s DNA Advisory Board (DAB) for DNA analysis. The National Institute of Standards and Technology (NIST) has developed and tested DNA performance standards for the restriction fragment length polymorphism (RFLP), polymerase chain reaction (PCR) polymarker, short tandem repeat (STR), and mitochondrial DNA (mtDNA) analysis procedures. These performance standards are used to assess laboratories’ abilities to conduct these methods of DNA analysis. NIJ has supported the development of criteria for model external DNA proficiency testing for State and local DNA laboratories, the

development of certification exams for practicing firearm and tool mark examiners, and the establishment of a forensic accreditation board that will review and certify forensic specialty-certifying organizations, such as the American Board of Criminalistics (ABC).

At the National Institute of Standards and Technology, standard bullets and casings are being developed as reference standards for crime laboratories. The standard bullets and casings will help verify that the computerized optical imaging equipment used in those laboratories is operating properly (i.e., for ballistics measurement quality control). They will also provide a foundation for establishment of nationwide ballistics measurement traceability and unification.

Research and Development Efforts

- **Crime scene investigation technology.** NIJ has demonstrated the use of teleforensic technology as a means for communicating knowledge from forensic scientists in a crime laboratory to investigators at a crime scene. This joint project between NIJ, the National Aeronautics and Space Administration (NASA), and the New York State Police involves a panel of renowned forensic scientists, crime lab directors, law enforcement professionals, and attorneys exploring the use of NASA space technology and other remote sensing technologies for remote crime scene imaging. NIJ is also developing two highly technical tools for onsite crime scene investigation. The first is a tactical robot for archival crime scene evaluation, which will identify explosives and drugs and can be used to collect evidence. The other crime scene investigation technology is a fluorescence imaging tool that law enforcement investigators can use to identify fingerprints or biological evidence in natural lighting conditions.
- **DNA.** NIJ is supporting a 5-year effort to fund all areas of research and technology development to enhance the use of DNA in the criminal justice system. Projects include DNA chip technology, which can make DNA analysis portable for use at a crime scene; mass spectrometry technology, which offers great improvements in sample processing speed and throughput; and statistical modeling, which supports estimates of DNA profile rarity for reports and courtroom presentations.
- **Entomology.** NIJ is supporting research to validate a procedure for determining the post mortem interval (i.e., the elapsed time from death to discovery of body or “time since death”) using the science of entomology and DNA. One study is validating the reliability of using pigs of varying sizes as models for human decomposition. Another project is identifying the DNA of various larvae found on bodies, which entomologists have shown to be found at different stages of decomposition.
- **Firearms and ballistics.** NIJ supported the development and validation of a ballistics matching technology using three-dimensional images of bullets and cartridge cases. In addition, NIJ is working in partnership with the Royal Canadian Mounted Police to create a comprehensive Firearms Identification System (FIS) database that will be made available to all law enforcement agencies on a CD-ROM platform.

- **Questioned documents.** NIJ has initiated two major technology developments to provide a sound scientific basis for identifying the writer of a document. NIJ has funded research to validate the individuality of handwriting and to develop a computer-assisted procedure for comparing handwriting. The outcome of this study should be a technology that meets the standards for admissibility set by the Supreme Court in the *Kumho Tire* decision. NIJ is also supporting a project to develop and validate a linguistic method of distinguishing authors of electronically created documents. Both are showing promising success and will significantly influence document examination in the future.
- **Trace evidence.** NIJ is supporting a series of mass spectrometry research and validation studies using a number of trace evidence samples, including glass, fibers, hair, and chemicals (such as explosives trace chemicals). One of these studies uses the secondary ion mass spectrometry (SIMS) technology, a state-of-the-art instrumentation that has the potential to provide a chemical-specific characterization for automotive paint, nail polishes, and chemicals present on the surface of hair, such as those found in treatment or styling products.

Sources of Further Information

Contacts:

- National Center for Forensic Science: 407-823-6469 or natlctr@mail.ucf.edu.
- National Forensic Science Technology Center: 727-549-6067 or admin@nfstc.org.
- National Institute of Justice, Office of Science and Technology: 202-307-0645.
- National Law Enforcement and Corrections Technology Center–National: 800-248-2742 or asknlectc@nlectc.org.
- Office of Law Enforcement Standards: 301-975-2757 or oles@nist.gov.

Publications and Products:

- *Development of NIST Standard Bullets and Casings Status Report: NIJ Report 603-00.* November 2000.
- “Forensic DNA Evidence: National Commission Explores Its Future.” *NIJ Journal*, Issue 238, January 1999.
- *Forensic Sciences: Review of Status and Needs.* NIJ Issues and Practices Report (NCJ 173412), 1999.
- *The Future of Forensic DNA Testing: Predictions of the Research and Development Working Group.* NIJ Issues and Practices Report (NCJ 183697), November 2000.
- *NIST Random Profile Roughness Specimens and Standard Bullets: NIJ Report 601-00.* July 2000.
- “The Unrealized Potential of DNA Testing.” *NIJ Journal*, Issue 234, December 1997.

Internet:

- Bureau of Justice Assistance: www.ojp.usdoj.gov/bja.
- Federal Bureau of Investigation DNA Advisory Board: www.for-swg.org/swgdamin.htm.
- JUSTNET (National Law Enforcement and Corrections Technology Center system): www.nlectc.org.
- National Aeronautics and Space Administration: www.nasa.gov.
- National Commission on the Future of DNA Evidence: www.ojp.usdoj.gov/nij/dna.
- National Institute of Standards and Technology: www.nist.gov.
- Office of Justice Programs: www.ojp.usdoj.gov.
- Office of Law Enforcement Standards: www.oles.org.

19. Investigative Sciences

The need for sound, uniform investigative protocols and training for law enforcement and other public safety personnel has been demonstrated by a number of highly publicized cases. These cases have shown how faulty or careless evidence collection procedures or eyewitness interviewing techniques can lead to miscarriages of justice. The National Institute of Justice (NIJ) has taken a number of steps to make recommendations to the Attorney General and the criminal justice community on ways to improve the use and maximize the value of evidence in the criminal justice system. NIJ, in cooperation with numerous national organizations and agencies, has organized several panels of criminal justice practitioners and experts to do this work. The National Commission on the Future of DNA Evidence has made recommendations in the areas of postconviction DNA testing, laboratory funding, and crime scene DNA evidence collection. Technical Working Groups for Eyewitness Evidence, Crime Scene Investigation, Fire/Arson Scene Investigation, Bombing Scene Investigation, and Digital Evidence—each consisting of a geographical distribution of law enforcement investigators, prosecutors, defense lawyers, forensic scientists, and researchers—have developed or are in the process of developing recommended minimum investigative practices in these areas.

Potential Funding Sources

[May be used for personnel, training, equipment, technical assistance, research, development, or implementation (see appendix C for details and contacts).]

- Crime Identification Technology Act Programs (OJP-wide).
- Edward Byrne Memorial State and Local Law Enforcement Assistance Discretionary Grants (Bureau of Justice Assistance).
- Edward Byrne Memorial State and Local Law Enforcement Assistance Formula Grants (Bureau of Justice Assistance).
- Local Law Enforcement Block Grants Program (Bureau of Justice Assistance).
- Office of Science and Technology general and directed solicitations (National Institute of Justice).

Standards and Testing

No standards exist at this time in the area of investigative sciences.

Research and Development Efforts

- **Digital evidence/cybercrime.** NIJ is working with the Office of Law Enforcement Standards (OLES), the U.S. Secret Service, the FBI, the National Cybercrime Training Partnership (NCTP), local and State

agencies, and industry to produce a series of seven quick reference guides for handling electronic investigations. These guides will be derived from information provided by field investigators, crime lab analysts, litigation experts, and others, by way of a Technical Work Group (TWG) strategy employed by NIJ. Collectively, the series will cover the spectrum of evidence handling from crime scene awareness to courtroom presentation. The first volume, *Electronic Crime Scene Investigation: A Guide for First Responders*, is planned for publication in early 2001. Additional volumes will cover managing technology, analysis of evidence, investigative use of technology, investigation of technology-based crime, forensic laboratory setup, and courtroom presentation of electronic evidence.

Sources of Further Information

Contacts:

- National Center for Forensic Science: 407-823-6469 or natlctr@mail.ucf.edu.
- National Institute of Justice, Office of Science and Technology: 202-307-0645.
- National Commission on the Future of DNA Evidence: 202-616-8123.
- National Law Enforcement and Corrections Technology Center-National: 800-248-2742 or asknlectc@nlectc.org.
- Office of Community Oriented Policing Services: 202-514-2058 or www.usdoj.gov/cops.
- Office of Law Enforcement Standards: 301-975-2757 or oles@nist.gov.

Publications and Products:

- "Clearing the DNA Logjam." *TechBeat*, NLECTC, Fall 1998.
- *Convicted by Juries, Exonerated by Science: Case Studies in the Use of DNA Evidence to Establish Innocence After Trial*. NIJ Research Report (NCJ 161258), June 1996.
- *Crime Scene Investigation: A Guide for Law Enforcement*. NIJ Research Report (NCJ 178280), January 2000.
- *Death Investigation: A Guide for the Scene Investigator*. NIJ Research Report (NCJ 167568), reprinted November 1999.
- "A DNA Evidence Primer." *TechBeat*, NLECTC, Summer 2000.
- *Eyewitness Evidence: A Guide for Law Enforcement*. NIJ Research Report (NCJ 178240), October 1999.
- *Eyewitness Evidence: A Guide for Law Enforcement*. NIJ Trainer's Manual, available in summer 2001.
- *Fire and Arson Scene Evidence: A Guide for Public Safety Personnel*. NIJ Research Report (NCJ 181584), June 2000.
- *A Guide for Explosion and Bombing Scene Investigation*. NIJ Research Report (NCJ 181869), June 2000.

- “PDQ: Tracking Down a Vehicle.” *TechBeat*, NLECTC, Spring 2000.
- *Postconviction DNA Testing: Recommendations for Handling Requests*. National Commission on the Future of DNA Evidence, NIJ Issues and Practices Report (NCJ 177626), September 1999.
- *Protective Intelligence and Threat Assessment Investigations: A Guide for State and Local Law Enforcement Officials*. NIJ Research Report (NCJ 170612), July 1998.
- “Raising the Bar on Evidence.” *TechBeat*, NLECTC, Fall 1999.
- “Technology Tells of Torture.” *TechBeat*, NLECTC, Spring 2000.
- *What Every Law Enforcement Officer Should Know About DNA Evidence*. National Commission on the Future of DNA Evidence, NIJ pamphlet, 1999.
- *What Every Law Enforcement Officer Should Know About DNA Evidence: Best Practices for Identification, Preservation, and Collection of DNA Evidence at the Crime Scene*. Beginning Level Module, NIJ CD-ROM (NCJ 182992), September 2000.
- *What Every Law Enforcement Officer Should Know About DNA Evidence: Best Practices for Identification, Preservation, and Collection of DNA Evidence at the Crime Scene*. Advanced Level Module, NIJ CD-ROM (NCJ 184479), February 2001.
- “Who Wrote It? Steps Toward a Science of Authorship Identification.” *NIJ Journal*, Issue 232, September 1997.

Internet:

- Bureau of Alcohol, Tobacco and Firearms: www.atf.treas.gov.
- Bureau of Justice Assistance: www.ojp.usdoj.gov/bja.
- Federal Bureau of Investigation DNA Advisory Board: www.for-swg.org/swgdamin.htm.
- JUSTNET (National Law Enforcement and Corrections Technology Center system): www.nlectc.org.
- National Center for Forensic Science: ncfs.ucf.edu.
- National Commission on the Future of DNA Evidence: www.ojp.usdoj.gov/nij/dna.
- National Institute of Justice: www.ojp.usdoj.gov/nij.
- National Institute of Justice, Office of Science and Technology: www.ojp.usdoj.gov/nij/sciencetech/welcome.html.
- Office of Community Oriented Policing Services: www.usdoj.gov/cops.
- Office of Justice Programs: www.ojp.usdoj.gov.
- Office of Law Enforcement Standards: www.oles.org.
- U.S. Secret Service: www.treas.gov/uss.

APPENDIX

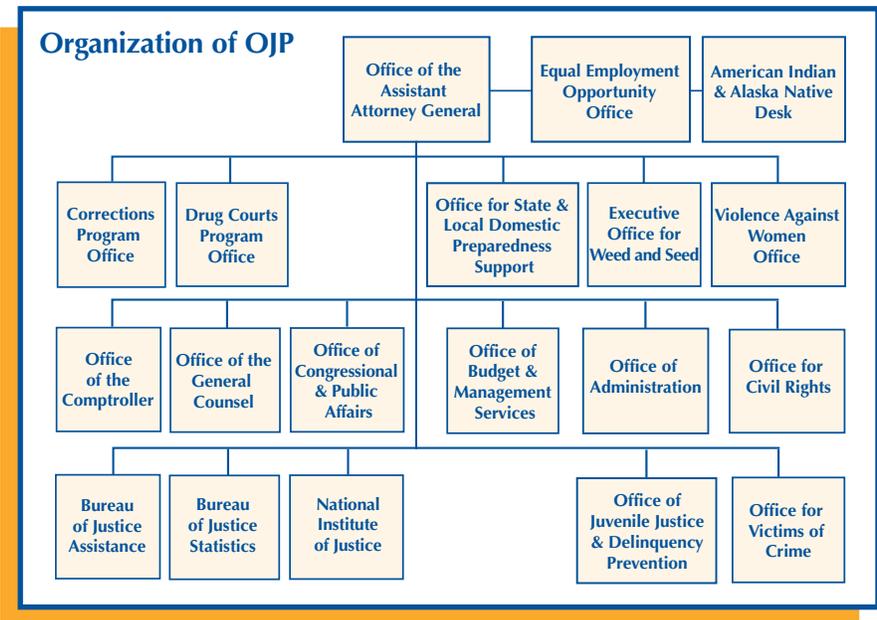


OFFICE OF JUSTICE PROGRAMS (OJP)

The mission of OJP and its Bureaus is to make our Nation’s criminal and juvenile justice systems more efficient and effective and to address problems relating to crime, delinquency, drugs, and violence. Dedicated to comprehensive approaches, OJP provides Federal leadership in the development of policy and allocation of resources. It consists of five Bureaus and six Offices that identify emerging criminal justice issues, develop new ideas and test promising approaches, evaluate program results, collect statistics, conduct analyses, and disseminate these findings and other information to State and local units of government, criminal justice practitioners, the media, and the public, as well as to other countries.

CONTACT OJP AT:

810 Seventh Street, N.W.
 Washington, DC 20531
 or by telephone at
 202-307-0703
 or on the Internet at
<http://www.ojp.usdoj.gov>.



Descriptions of and contact information for the five OJP Bureaus are presented below.

Bureau of Justice Assistance (BJA)

BJA supports innovative programs that strengthen the Nation's criminal justice system by assisting State and local governments in combating violent crime and drug abuse. Established by the Omnibus Crime Control and Safe Streets Act of 1968, as amended, BJA accomplishes its mission by providing funding, evaluation, training, technical assistance, and information support to state and community criminal justice programs, thus effectively forming partnerships with State and local jurisdictions.

Contact: 202-616-6500 or www.ojp.usdoj.gov/BJA.

Bureau of Justice Statistics (BJS)

BJS is the Nation's primary source for criminal justice statistics. BJS collects, analyzes, publishes, and disseminates information on crime, criminal offenders, victims of crime, and the operation of justice systems at all levels of government. These data are critical to Federal, State, and local policy-makers in combating crime and ensuring that justice is both efficient and evenhanded. BJS also provides financial and technical support to State governments in developing State capabilities in criminal justice statistics, improving criminal history records, and implementing crime identification technology systems.

Contact: 202-307-0765 or www.ojp.usdoj.gov/bjs.

National Institute of Justice (NIJ)

NIJ is the research and development agency of the Department of Justice (DOJ). NIJ was created by Congress (via the Omnibus Crime Control and Safe Streets Act of 1968, as amended) to prevent and reduce crime and to improve the criminal justice system by sponsoring research projects and development programs, developing new technologies to fight crime, evaluating the effectiveness of criminal justice programs, and identifying and recommending programs that have been successful or are promising. NIJ publishes materials that allow criminal justice research professionals, practitioners, policymakers, and researchers to stay abreast of the latest Institute research and the results of program evaluations. As a result of the Violent Crime Control and Law Enforcement Act of 1994 (the Crime Act), NIJ has greatly expanded its initiative to include partnerships with other Federal agencies and private foundations, advances in technology, and a new international focus.

Contact: 202-307-2942 or www.ojp.usdoj.gov/nij.

Joint Program Steering Group (JPSG)

Some of DOJ's research and development work overlaps work being pursued by certain agencies of the Department of Defense (DoD). JPSG was established to coordinate these efforts. Staffed by representatives from DoD and DOJ, JPSG is located at the Defense Advanced Research Projects Agency (DARPA).

Contact: 703-351-8719 or www.darpa.mil.

Office of Juvenile Justice and Delinquency Prevention (OJJDP)

Created by Congress in 1974 to help communities and States prevent delinquency and improve their juvenile justice systems, OJJDP is the primary Federal agency responsible for addressing the issues of juvenile crime and delinquency. In 1984, Congress added the problem of missing and exploited children to OJJDP's legislative mandate. OJJDP administers the Missing and Exploited Children's program, four programs under the Victims of Child Abuse Act, and the Coordinating Council on Juvenile Justice and Delinquency Prevention. OJJDP provides Federal leadership by providing grants and contracts to States, local communities, and Indian tribes to help improve their juvenile justice systems and by sponsoring innovative research, demonstration, evaluation, statistics, and technical assistance and training programs to improve the Nation's understanding of and response to juvenile violence and delinquency.

Contact: 202-307-5911 or www.ojjdp.ncjrs.org.

Office for Victims of Crime (OVC)

OVC was established by the Victims of Crime Act (VOCA) in 1984 to oversee diverse programs that benefit victims of crime. OVC provides substantial funding to State victim assistance and compensation programs—the lifeline services that help victims heal. The agency also supports training designed to educate criminal justice and allied professionals regarding the rights and needs of crime victims.

Contact: 202-307-5983 or www.ojp.usdoj.gov/ovc.

Four OJP Offices administer major programs authorized under the 1994 Crime Act.

Corrections Program Office (CPO)

CPO provides financial and technical assistance to State and local governments to implement corrections-related programs, including correctional facility construction and corrections-based drug treatment programs. CPO was established in 1995 to implement the correctional grant programs created by the Crime Act. CPO administers the Violent Offender Incarceration and Truth-in-Sentencing (VOI/TIS) Incentive formula grant program, the Residential Substance Abuse Treatment for State Prisoners

formula grant program (RSAT), and the Facilities on Tribal Lands discretionary grant program. CPO has developed a comprehensive technical assistance program that includes conferences, workshops, training programs, and onsite technical assistance.

Contact: 202–307–3914 or 800–848–6325; www.ojp.usdoj.gov/cpo or askcpo@ojp.usdoj.gov.

Drug Courts Program Office (DCPO)

DCPO administers the Crime Act’s discretionary drug courts grant program. This program provides support for the development, implementation, and improvement of drug courts through grants to local and State governments, courts, and tribal governments, and through technical assistance and training.

Contact: 202–616–5001 or www.ojp.usdoj.gov/dcpo.

Violence Against Women Office (VAWO)

VAWO coordinates DOJ’s legislative and other initiatives relating to violence against women, including research and public education, and administers programs designed to help detect, prevent, and stop violence against women, including domestic violence, sexual assault, and stalking. VAWO administers formula and discretionary grant programs authorized by the Violence Against Women Act, part of the 1994 Crime Act. In FY 1998, these grant programs were administered by the Violence Against Women Grants Office, which merged with the Violence Against Women Office in March 1999.

Contact: 202–307–6026 or www.ojp.usdoj.gov/vawo.

Office of the Police Corps and Law Enforcement Education (OPCLEE)

OPCLEE, which was transferred in November 1998 from DOJ’s Office of Community Oriented Policing Services (COPS) to the Office of Justice Programs, provides college educational assistance to students who commit to public service in law enforcement, and scholarships—with no service commitment—for dependents of law enforcement officers who died in the line of duty.

Contact: 202–353–8953 or 888–942–6777; www.ojp.usdoj.gov/opclee.

Two additional Offices are located within OJP.

Executive Office for Weed and Seed (EOWS)

EOWS helps communities build stronger, safer neighborhoods by implementing the Weed and Seed strategy, a community-based, multidisciplinary approach to combating crime. Weed and Seed involves both law enforcement and community-building activities, including economic development and support services.

Contact: 202–616–1152 or www.ojp.usdoj.gov/eows.

Office for State and Local Domestic Preparedness Support (OSLDPS)

OSLDPS, created by OJP in April 1998, is responsible for enhancing the capacity and capability of State and local jurisdictions to prepare for and respond to incidents of domestic terrorism involving chemical and biological agents, radiological and explosive devices, and other weapons of mass destruction. It awards grants for equipment and provides training and technical assistance for State and local first responders.

Contact: 202-305-9887 or www.ojp.usdoj.gov/osldps.

APPENDIX

B.

OFFICE OF COMMUNITY ORIENTED POLICING SERVICES (COPS)

In fall 1994, Congress passed the Violent Crime Control and Law Enforcement Act (VCCA). VCCA authorizes \$8.8 billion over 6 years for grants to add an additional 100,000 community policing officers to the Nation's streets and to advance community policing nationwide. Funding for the initiative comes from the Violent Crime Reduction Trust Fund, which redirects the money saved by the reduction of the Federal workforce and invests it in crime-fighting programs.

Charged with fulfilling the mission of adding 100,000 officers to the beat and advancing community policing, Attorney General Janet Reno created the COPS program. The COPS program began operations in the fall of 1994 and the first COPS grants were awarded shortly thereafter—392 State, municipal, county, and tribal law enforcement agencies received \$200 million in funding and became the first agencies in the Nation to receive COPS grants. These grants made it possible for agencies to hire more than 2,700 officers.

Each year, the COPS program receives appropriations through the annual Commerce-Justice-State Appropriations bill. Between fiscal year 1995 and fiscal year 1999, the COPS program received approximately \$1.4 billion annually to carry out its mission and on May 12, 1999, the COPS program announced the funding of its 100,000th police officer. With that important milestone reached, COPS continues to focus its funds on projects to advance community policing practices.

APPENDIX



OFFICE OF JUSTICE PROGRAMS AND OFFICE OF COMMUNITY ORIENTED POLICING SERVICES: FUNDING AND OTHER RESOURCES

Office of Justice Programs (OJP) funding programs are divided into two main categories: formula grants and discretionary grants.

Formula grants are awarded to State and local governments based on a predetermined formula that might be dependent on a jurisdiction's crime rate, population, or other factors. States are generally required to pass a significant portion of formula grants through to local agencies and organizations in the form of subgrants. OJP's formula grant programs related to technology include:

- **Edward Byrne Memorial State and Local Law Enforcement Assistance Formula Grant Program.** Provides funds to assist States and units of local government in controlling and preventing drug abuse, crime, and violence, and in improving the functioning of the criminal justice system. Byrne funds are awarded for projects in fields that include law enforcement, adjudication, community crime prevention, and the development of criminal justice information systems. The grants can be used to provide additional personnel, equipment, facilities, and training. For further information, contact the Office of Justice Programs, Bureau of Justice Assistance (BJA), at 202-514-6638 or access the BJA Web site at www.ojp.usdoj.gov/bja.
- **Juvenile Accountability Incentive Block Grants (JAIBG) Program.** Created in fiscal year 1998 and administered by the Office of Juvenile Justice and Delinquency Prevention (OJJDP), the JAIBG program addresses the growing problem of juvenile crime by encouraging accountability-based reforms at the State and local levels. Funds are awarded to States based on their juvenile population. Units of local government receive 75 percent of the amount awarded to States based on a combination of law enforcement expenditures and the FBI's Uniform Crime Report (UCR) data on Part 1 violent crimes, unless the State can demonstrate that it bears the primary financial burden for juvenile justice within the State. Funds may be used for 12 purposes, including information sharing. For more information, call 202-307-5924 or visit the JAIBG Web site at www.ojjdp.ncjrs.org/jaibg.
- **Juvenile Justice Formula Grants Program.** Through its Juvenile Justice Formula Grants Program, OJJDP provides grants to States to assist State and local jurisdictions in preventing and treating

delinquency and improving their juvenile justice systems. Each State and territory is required to develop and implement a comprehensive juvenile justice plan that sets priorities for the expenditure of OJJDP formula grant funds. For more information, visit OJJDP's Web site at www.ojjdp.ncjrs.org/grants/grants.html.

- **Local Law Enforcement Block Grants (LLEBG) Program.** Awards block grants to local units of government to reduce crime and enhance public safety. Grants must be used for one or more specified purposes, including hiring law enforcement personnel, purchasing law enforcement equipment, enhancing school security, establishing or operating drug courts, adjudicating violent offenders, operating multijurisdictional task forces, and implementing crime prevention programs. The Technical Assistance and Training Allocation of LLEBG supports investigative personnel in using surveillance equipment and information systems applications. The program also provides for technology training. For further information, call the Department of Justice Response Center at 800-421-6770 or access the Bureau of Justice Assistance Web site at www.ojp.usdoj.gov/bja.
- **STOP Violence Against Women Formula Grants.** Established for creating a coordinated, integrated strategy involving all elements of the criminal justice system to respond to violent crimes against women. The program's broad purposes include training for law enforcement and developing and implementing services to effectively address violent crimes against women. For more information, contact the Violence Against Women Office (VAWO), Office of Justice Programs, U.S. Department of Justice, at 202-307-6026.
- **Victims of Crime Act Victim Assistance.** The Office for Victims of Crimes (OVC) Victims of Crime Act Victim Assistance formula funds have been awarded for automated victim notification systems. These systems connect with local, State, and national criminal justice information systems to provide information to law enforcement and corrections agencies and victims on certain events in a case such as, arrest, hearings, disposition, and release. For more information, visit the OVC Web site at www.ojp.usdoj.gov/ovc/fund.
- **Violent Offender Incarceration/Truth-in-Sentencing (VOI/TIS) Incentive Grants Program.** The VOI/TIS programs help States build or expand correctional facilities for adult or juvenile offenders. These funds can be used to build, renovate, or "harden" a facility. Funding for the addition or improvement of surveillance, locating and tracking, or contraband detection technologies can be included under these grant programs. The Violent Offender Incarceration grant program is administered on a three-tiered formula basis, while Truth-in-Sentencing awards are distributed as an incentive to States to enact sentencing reforms and thus ensure that violent offenders serve at least 85 percent of their sentences. For further information, contact the Corrections Program Office (CPO) at 800-848-6325, access the CPO Web site at www.ojp.usdoj.gov/cpo, or send e-mail to askcpo@ojp.usdoj.gov.

Discretionary grants are awarded on a competitive basis to public and private agencies and private nonprofit organizations. OJP's grant programs, provided through the Bureau of Justice Assistance, Bureau of Justice Statistics (BJS), Corrections Program Office, Drug Courts Program Office (DCPO),

National Institute of Justice (NIJ), Office of Community Oriented Policing Services (COPS), Office of Juvenile Justice and Delinquency Prevention, and Office for State and Local Domestic Preparedness Support (OSLDPS), are listed below in alphabetical order.

- **Bulletproof Vest Partnership Grant Program.** Established in 1998 and administered by BJA, this program provides funding assistance to State, local, and tribal governments for the purchase of body armor. BJA will match up to 50 percent of the cost of the armor, including the cost of shipping and taxes. Vests must meet the NIJ standard (see chapter 1). For further information, see www.vests.ojp.gov or contact the Department of Justice Response Center at 800-421-6770.
- **Convicted Offender DNA Backlog Reduction Program.** Administered by NIJ, this program provides assistance to States that have a backlog of convicted offender samples waiting for DNA analysis. Funding is provided to perform rapid DNA analysis on the unanalyzed samples in order to be uploaded into the National DNA Index System (NDIS) through the Combined DNA Index System (CODIS). Contact the Justice Response Center at 800-421-6770.
- **Crime Identification Technology Act (CITA) Programs.** Administered OJP-wide, this initiative provides assistance to States in establishing or upgrading criminal justice information systems and identification technologies and provides assistance for virtually every technology-based, criminal justice information, identification, and communications need. In the FY 2000 appropriations, funds were earmarked for the National Criminal History Improvement Program (NCHIP), which in turn provides grants to States; for NIJ's Crime Laboratory Improvement Program (CLIP); and for the development of new, more effective school safety technologies. OJP also will use CITA funds to support projects related to the forensic sciences; to communications and information systems technology interoperability (under NIJ's Advanced Generation of Interoperability for Law Enforcement (AGILE) Program); and to building and developing standards for State information and common integration programs. CITA funds also will be used for enhancing the BJS NCHIP-2000 program (to support sex offender registry upgrades, enhance protection and domestic violence-related files, and assist States in implementing the National Crime Prevention and Privacy Compact) and for supporting the FBI's new approach to uniform crime reporting, the National Incident-Based Reporting System (NIBRS). For more information, visit the CITA Web site at www.ojp.usdoj.gov/cita.
- **Crime Laboratory Improvement Program (CLIP).** Administered by NIJ, this joint program with the FBI provides assistance to State and local crime laboratories both to improve and expand their analysis capabilities, including their online capabilities, and to reduce their backlog of convicted offenders' DNA samples with CODIS, the national DNA database. Contact the Department of Justice Response Center at 800-421-6770. (Also see the listing for the Crime Identification Technology Act Programs above.)
- **Crime Mapping Research Center (CMRC) Fellowship Program.** Provided through NIJ, CMRC supports training in crime mapping for law enforcement personnel and provides crime mapping software that is compatible with most mapping programs. CMRC serves as a clearinghouse for crime

mapping research and development in the United States. It coordinates its efforts with the Crime Mapping Technology Center at the National Law Enforcement and Corrections Technology Center–Rocky Mountain. Funding is available for both research and training. Contact CMRC at 202–514–3431 or cmrc@ojp.usdoj.gov, or access the CMRC Web site at www.ojp.usdoj.gov/cmrc.

- **DNA Five-Year Research and Development Program.** The goal of this NIJ program is the development of cutting edge molecular biology methods and tools to achieve highly discriminating, reliable, economic, and rapid DNA testing approaches appropriate for forensic identity testing. Major objectives for the period from 1999 to 2003 include reducing DNA testing costs by more than 98 percent, from \$700 per test to less than \$10 per test; reducing analysis time from hours to minutes; developing inexpensive, portable, disposable DNA test kits for field use; increasing the reliability and legal credibility of DNA testing through the development of a dual testing approach using two different methodologies (microchip devices and mass spectrometry); developing standard materials for population databases; and developing markers or techniques to be used in the unique identification of individuals.
- **Drug Court Discretionary Grant Program.** Administered by DCPO, this program provides financial and technical assistance to States and localities to develop and implement drug treatment courts that use a mix of treatment, testing, incentives, and sanctions to remove nonviolent offenders from the cycle of substance abuse and crime. Grant recipients can use funds to support the development of information management systems and accompanying software. Data sharing among drug courts is a primary focus of the program. Contact the Drug Courts Program Office at 202–616–5001 or at www.ojp.usdoj.gov/dcpo.
- **Edward Byrne Memorial State and Local Law Enforcement Assistance Discretionary Grants.** These grants, provided through BJA, are awarded to State and local law enforcement, as well as private entities, for crime control and violence prevention projects. The program focuses specifically on education and training for criminal justice personnel, technical assistance, multijurisdictional projects (e.g., State records integration), and program demonstrations. Grants also support research and development projects. Contact the Bureau of Justice Assistance at 202–514–6638 or access the BJA Web site at www.ojp.usdoj.gov/bja.
- **Grants to Encourage Arrest Policies.** These grants, provided through VAWO, encourage States and localities to increase law enforcement attention to domestic abuse. They can support development of integrated computer tracking systems and provide training for police to improve tracking of domestic violence cases. Contact the Violence Against Women Office, Office of Justice Programs, U.S. Department of Justice, at 202–307–6026 or access the VAWO Web site at www.ojp.usdoj.gov/vawo.
- **Innovative Community Policing Grants.** Administered by the COPS Office, these grants assist State and local law enforcement in further developing community policing infrastructures. The funding can be used to purchase technology and equipment, statistical and crime mapping software, and training services. Also, grants can be used to help law enforcement agencies overcome organizational

obstacles and to establish demonstration centers that model current community policing methods. For further information, contact the Department of Justice Response Center at 800-421-6770 or visit the COPS Web site at www.usdoj.gov/cops.

- **Making Officer Redeployment Effective (MORE) Grants.** These grants, provided through COPS, serve the broad purpose of increasing the deployment of law enforcement officers devoted to community police work by expanding available officer time without hiring new officers. The grants (which cover 75 percent of the cost of equipment and technology, with a 25-percent local match) can be used to make purchases that will make community police resources more available. For more information, contact the Department of Justice Response Center at 800-421-6770 or access the COPS Web site at www.usdoj.gov/cops.
- **National Criminal History Improvement Program (NCHIP).** NCHIP, administered by BJS, helps States upgrade the quality and completeness of criminal records and provides increased compatibility with and access to national crime information databases. A priority is to ensure that State criminal history records are complete and ready for access through the National Instant Criminal Background Check System. NCHIP funding also supports the Firearms Inquiry Statistics (FIST) Program and the National Sex Offender Registry Assistance Program (NSOR-AP). Contact the BJS Clearinghouse at 800-732-3277 or visit the BJS Web site at www.ojp.usdoj.gov/bjs. (Also see the listing for the Crime Identification Technology Act Programs, above.)
- **National Incident-Based Reporting System (NIBRS) Implementation Program.** The National Incident-Based Reporting System, representing the next generation of crime data from Federal, State, and local law enforcement agencies, is designed to replace the Uniform Crime Reporting Program initiated by the FBI in 1930. The development of the new system is a joint effort of BJS and the FBI and has the goal of encouraging the presentation of higher quality data on a wider variety of crimes. BJS funds the operation of a dedicated Web site and the formulation of model analytic strategies. For more information, contact the BJS Clearinghouse at 800-732-3277 or visit the BJS Web site at www.ojp.usdoj.gov/bjs.
- **Office of Science and Technology general and directed solicitations.** Administered by NIJ, this initiative supports technology research and development for law enforcement, corrections, and the forensic sciences. Contact the Department of Justice Response Center at 800-421-6770, the National Institute of Justice's Web site at www.ojp.usdoj.gov/nij, or the National Law Enforcement and Corrections Technology Center's Web site at www.nlectc.org.
- **State Domestic Preparedness Equipment Support Program.** Administered by OSLDPS, this program provides formula grants to the 50 States, District of Columbia, and U.S. Territories to plan for and execute a comprehensive threat and needs assessment for developing a 3-year plan to enhance first responder capabilities and acquire specialized equipment for State and local agencies. Contact the Office of Justice Programs at 202-305-9887.

- **State Justice Statistics Program for Statistical Analysis Centers.** This program, administered by BJS, provides financial support to supplement State funding of a central State criminal justice statistics capability to conduct data collection and research that can benefit both the State and the Nation. Grants are awarded to State statistics centers for data collection and analysis relating to identifiable themes. Such themes include technology-based research focusing on the analysis and use of machine-readable criminal history record data for tracking of case-processing decisions, evaluation of record systems management, or studies related to the use of records to limit or control firearms acquisition by ineligible individuals. Contact the BJS Clearinghouse at 800-732-3277 or visit the BJS Web site at www.ojp.usdoj.gov/bjs.
- **Violence Against Women Discretionary Grants for Indian Tribal Governments.** Provided through VAWO, these grants serve as a complement to the formula grants program designed to assist tribal governments in developing and strengthening effective law enforcement and prosecution strategies to combat violent crimes against women and in developing and strengthening victim services in cases involving crimes against women. For example, this funding could be used to create an automated communication system to connect tribal courts, police officers, and victim service providers. Contact the Violence Against Women Office, Office of Justice Programs, U.S. Department of Justice, at 202-307-6026 or access the VAWO Web site at www.ojp.usdoj.gov/vawo.

Other Resources, Including Training and Technology Assistance

- **Crime Mapping Analysis Program (CMAP).** NIJ's National Law Enforcement and Corrections Technology Center (NLECTC) system offers crime mapping training and assistance to State and local law enforcement and corrections agencies. Crime analysts from across the country attend the 5-day training program that covers concepts and terms in geographic information systems (GIS), offers demonstrations on available software, and features hands-on, interactive exercises. CMAP is headquartered at NLECTC-Rocky Mountain in Denver, Colorado. Currently, classes are offered at the Denver facility as well as NLECTC-Southeast in Charleston, South Carolina. Crime mapping has been successfully used to identify suspects, analyze crime hot spots for directed patrol, identify crime patterns, and aid in jury indictments. For class registration, call 800-416-8086 or download a registration form from www.nlectc.org.
- **Electronic Crime Clearinghouse.** NLECTC's Northeast facility has established a Cooperative Research and Development Center Agreement between the Air Force Research Laboratory/Information Directorate and Utica College's Computer Forensics Research and Development Center. The Northeast center is developing a Web-based clearinghouse for electronic crime and computer forensics contacts, tools, and training.
- **Institute for Security Technology Studies.** The Institute serves as a national center for counterterrorism technology research, development, and assessment. It is funded by the U.S. Justice Department's National Institute of Justice, Office of Science and Technology. The Institute studies and develops

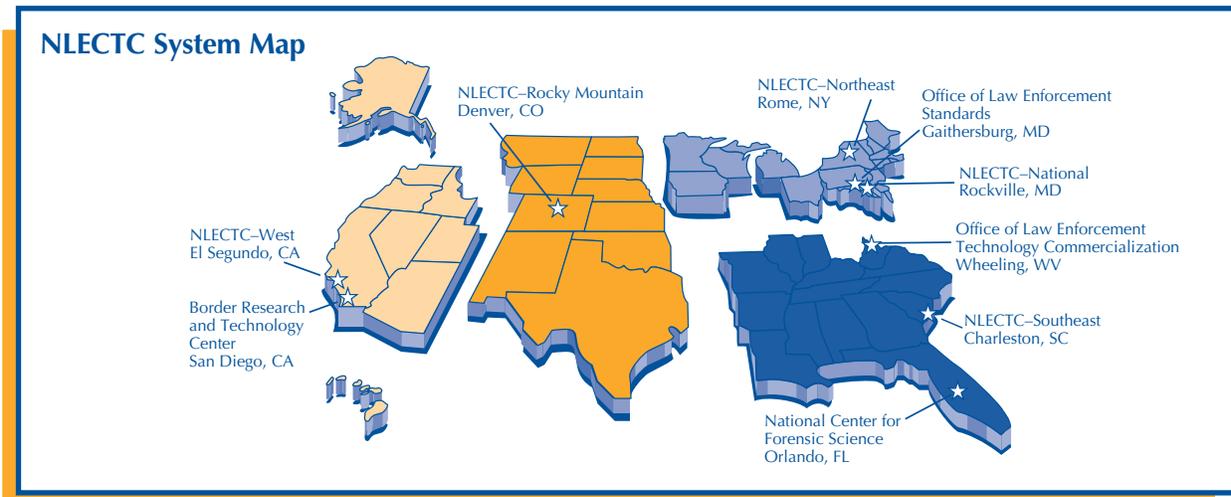
technologies addressing counterterrorism, including counter-cyberterrorism issues in the areas of threat and intelligence, threat detection and interdiction, preparedness and protection, response, and recovery. Contact the Institute of Security Technology Studies at 603-646-0698 or visit its Web site at <http://www.ists.dartmouth.edu/>.

- **Municipal Fire and Emergency Management Services (EMS) Equipment and Training Program.** The Office for State and Local Domestic Preparedness Support (OSLDPS) provides jurisdictions technical training in handling equipment purchased under the OSLDPS equipment grant programs. This training is available upon the jurisdiction's request through onsite visits and long-distance learning and by hosting responders at training facilities around the country, including the Equipment Training Center at Pine Bluff Arsenal, Arkansas.
- **National Cybercrime Training Partnership.** To address the changing role of computers and the Internet in the commission of crimes, this Partnership was established to support all levels of law enforcement with "cybertools," research, and development. The Partnership is developing a nationwide communications network to serve law enforcement by providing secure "interconnectivity" over the Internet. Also, the Partnership focuses on training by (1) developing a cadre of instructors capable of training law enforcement; and (2) distributing curriculums via nontraditional formats, including CD-ROMs. In addition, the Partnership plans to serve as a clearinghouse for information and experts available to law enforcement. For further information, contact the BJA Clearinghouse at 800-688-4252 or visit the Web site at www.nctp.org.
- **National Law Enforcement and Corrections Technology Center (NLECTC) System.** NLECTC was created by the National Institute of Justice, Office of Science and Technology, to respond to tremendous growth in the need for technology information and assistance within the Nation's law enforcement and corrections community. The NLECTC system currently consists of a national center, four regional centers, and four specialty offices located in various parts of the country. In addition, a rural law enforcement technology center is being created to address the technology needs of rural law enforcement agencies.

The core mission of the NLECTC system is to serve as the objective source or "honest broker" of criminal justice technology information and scientific and engineering advice and support for all criminal justice professionals. The information and assistance includes technology identification, technology and technical information dissemination, technology introduction, and technology commercialization. The regional centers and specialty offices are colocated or supported by federally funded technology partners that can provide unique science and engineering advice and support to the law enforcement and corrections communities.

- **NLECTC-National.** Located in Rockville, Maryland, NLECTC-National acts as the hub for the network and as the "virtual" headquarters for LEACTAC, the Law Enforcement and Corrections Technology Advisory Council. NLECTC-National manages the voluntary equipment standards and testing program that tests and verifies the performance of body armor; metallic handcuffs; shotguns;

and police vehicles, vehicle tires, and more. NLECTC–National also operates as an information clearinghouse, with a toll-free hotline and a World Wide Web site (the Justice Technology Information Network, or JUSTNET, at www.nlectc.org) that serves as the gateway to technology information and services of interest to the law enforcement and corrections community. JUSTNET also provides a database of commercially available products and technologies and can be used to access NIJ and NLECTC publications such as *TechBeat*, a periodical reporting the latest technology developments for law enforcement, corrections, and forensics. Contact NLECTC–National at 800–248–2742 or 301–519–5060 or via e-mail at asknlectc@nlectc.org.



- **NLECTC–Northeast.** Located in Rome, New York, at the U.S. Air Force (USAF) Research Laboratory-Information Directorate (formerly Rome Laboratory), NLECTC–Northeast leverages work already conducted by the USAF in command, control, communications, computing, and intelligence technologies. One of the main focuses of NLECTC–Northeast is concealed weapons detection. Other areas of research include computer crime, audio/video enhancement, voice stress analysis, and spoken language translation. NLECTC–Northeast serves Connecticut, Delaware, Iowa, Maine, Maryland, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, and Wisconsin. Contact NLECTC–Northeast at 888–338–0584 or via e-mail at nlectc_ne@rl.af.mil.
- **NLECTC–Rocky Mountain.** Located at the University of Denver, NLECTC–Rocky Mountain takes advantage of many of the university’s existing capabilities to offer information and training in crime analysis. It is also the home of NLECTC’s work in communications interoperability problems, research in the area of explosives detection and remediation. The Center serves Colorado, Kansas, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, and Wyoming. Contact NLECTC–Rocky Mountain at 800–416–8086 or via e-mail at dri@du.edu.
- **NLECTC–Southeast.** Located near Charleston, South Carolina, NLECTC–Southeast focuses, along with its partners (South Carolina Research Authority, Space and Naval Warfare Systems Center–Charleston, Oak Ridge National Laboratory, and the Savannah River Technology Center),

on corrections technologies, information technology, training systems, and school safety. NLECTC–Southeast is also the lead center for the Excess Equipment Program and offers crime mapping training. NLECTC–Southeast serves Alabama, Arkansas, Florida, Georgia, Illinois, Indiana, Kentucky, Louisiana, Mississippi, Missouri, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia. Contact NLECTC–Southeast at 800–292–4385 or 843–760–4626 or via e-mail at nlectc-se@nlectc-se.org.

- **NLECTC–West.** Headquartered in El Segundo, California, on the campus of The Aerospace Corporation, the primary scientific and systems engineering entity for the military space program. This center’s focus is on computer-based image enhancement of video evidence; system engineering and management expertise in the area of pursuits; evidence collection and communications interoperability; and sensor technologies that can be used in drug investigations. NLECTC–West serves Alaska, Arizona, California, Hawaii, Idaho, Nevada, Oregon, Utah, and Washington. Contact NLECTC–West at 888–548–1618 or 310–336–2222 or via e-mail at nlectc@law-west.org.

Specialized NLECTC System Facilities

- **Border Research and Technology Center (BRTC).** Located in San Diego, California, BRTC has the special mission of advancing technologies that provide improved capabilities in border surveillance, security, and identifications. BRTC coordinates its efforts closely with the Immigration and Naturalization Service, the U.S. Customs Service, the U.S. Border Patrol, and local law enforcement agencies concerned with border matters—illegal immigration, drug trafficking, and smuggling. Contact BRTC at 888–656–2782 or 619–232–1726 or via e-mail at info@brtc.nlectc.org.
- **National Center for Forensic Science (NCFS).** Colocated with the University of Central Florida in Orlando, NCFS is focused on research and training in the areas of arson and explosives. Its goals include development of a restricted-access electronic library for forensic and law enforcement professionals; support for the development of standard protocols for collecting and analyzing fire and explosion debris; supplemental training via the Internet, distance education, and professional seminars; and fundamental research to scientifically validate evidence collection and analysis procedures. Contact NCFS at 407–823–6469 or via e-mail at natlctr@mail.ucf.edu.
- **National Forensic Science Technology Center (NFSTC).** Established in 1995 by the American Society of Crime Laboratory Directors (ASCLD), the Center’s members include the American Board of Criminalistics; FBI Forensic Science Laboratory; American Academy of Forensic Science; International Association for Identification; University of Central Florida; University of Southern Florida; South Eastern Public Safety Institute of St. Petersburg Junior College; Florida International University; Bureau of Alcohol, Tobacco and Firearms; and Drug Enforcement Administration. The Center is dedicated to supporting forensic laboratories in achieving the highest possible quality of operations. Contact NFSTC, Allstate Center, at 727–549–6067 or visit its Web site at www.nfstc.org/home.htm.

- **Office of Law Enforcement Standards (OLES).** Supported by NIJ, the Office of Law Enforcement Standards applies science and technology to the needs of the criminal justice community. Although its major objective is to develop minimum performance standards for equipment and technology, which NIJ promulgates as voluntary national standards, OLES also undertakes studies leading to the publication of technical reports and user guides. Its areas of research include clothing, communications systems, emergency equipment, investigative aids, protective equipment, security systems, vehicles, and weapons. It also develops measurement methods for analytical techniques and standard reference materials for forensic scientists and crime labs. Since the program began in 1971, OLES has coordinated the development of nearly 200 standards, user guides, and advisory reports. Housed at the National Institute of Standards and Technology in Gaithersburg, Maryland, OLES works closely with NLECTC–National to conduct tests and to guarantee the performance and quality of equipment used by police and corrections.
- **Office of Law Enforcement Technology Commercialization (OLETC).** Located at Wheeling Jesuit University in Wheeling, West Virginia, this part of the NLECTC system is responsible for fostering commercial development and manufacture of promising, innovative technologies. It operates by providing technology commercialization support and technology transfer information to law enforcement organizations, other criminal justice organizations, and the manufacturing and technology communities. In addition, OLETC sponsors a yearly mock prison riot at the former West Virginia Penitentiary in Moundsville, West Virginia, during which special operations teams from correctional facilities from across the country observe and take part in training scenarios that include cell extractions, inmate fights, and hostage situations. The mock prison riot also provides a showcase for new and emerging technologies for corrections in the areas of facial identification, night vision, officer protection, less-than-lethal technologies, prisoner restraint, communications, training devices, drug/explosive detection, see-through wall and see-through smoke devices, and location and tracking systems. Contact OLETC at 888–306–5382 or via e-mail at oletc@nttc.edu.
- **National White Collar Crime Center (NW3C).** The mission of NW3C is to support law enforcement’s ability to prevent, investigate, and prosecute economic crime. NW3C provides case funding for strategy meetings, expert witnesses, document recovery, and investigator travel as long as the case is interjurisdictional. This nonprofit organization is funded through a Bureau of Justice Assistance grant. Located in Fairmont, West Virginia, it supports free programs and provides assistance for State and local law enforcement. NW3C programs and services include an information services section that provides analytical and intelligence support. To access the analytical section, an agency must join NW3C at no charge. The intelligence services include free access to databases, NEXIS-LEXIS, financial analysis, event charts, and investigative surveys. Contact NW3C toll free at 877–NCTP–ORG (877–628–7674) or through the following Web sites: www.nw3c.org and www.cybercrime.org.
- **Oklahoma City National Memorial Institute for the Prevention of Terrorism (MIPT).** The Institute is dedicated to preventing and reducing terrorism and mitigating its effects. It is funded by the Office of Science and Technology, National Institute of Justice, U.S. Department of Justice. The Institute is mandated to conduct research on the social and political causes and effects of terrorism

and the development of technologies to counter biological, nuclear, and chemical weapons of mass destruction as well as cyberterrorism. The focus of Institute studies is the research and development of technologies for first responders—police officers, firefighters, emergency medical technicians, and others who are first on the scene in the aftermath of terrorist activity. The Institute sponsors research to identify equipment, training, and procedures to help prevent and respond to terrorism. Contact the Memorial Institute for the Prevention of Terrorism at 405–232–5121 or visit its Web site at <http://www.mipt.org>.

- **Regional Information Sharing Systems (RISS) Program.** The RISS Program is composed of six regional centers that share intelligence and coordinate efforts against criminal networks that operate in many locations across jurisdictional lines. Typical targets of RISS activities are drug trafficking, violent crime and gang activity, and organized criminal activities. Each of the centers, however, selects its own target crimes and the range of services provided to member agencies. RISS serves more than 4,700 member law enforcement agencies in 50 States, two Canadian provinces, and the District of Columbia. Each RISS center has from 350 to 1,000 member agencies. The vast majority of member agencies are at the municipal and county levels, but more than 250 State agencies and 600 Federal agencies are also members. The RISS programs operate under the general policy and program guidance of BJA. The Drug Enforcement Administration, Federal Bureau of Investigation, Internal Revenue Service, U.S. Secret Service, U.S. Customs Service, and Bureau of Alcohol, Tobacco and Firearms participate in the program. Visit the RISS Program Web site at <http://www.iir.com/riss>.

- **Middle Atlantic–Great Lakes Organized Crime Law Enforcement Network (MAGLOCLEN)**

140 Terry Drive, Suite 100

Newtown, PA 18940

800–345–1322

Serving Delaware, the District of Columbia, Indiana, Maryland, Michigan, New Jersey, New York, Ohio, and Pennsylvania. The center also has member agencies in the Canadian provinces of Ontario and Quebec.

- **Mid-States Organized Crime Information Center (MOCIC)**

1610 East Sunshine, Suite 100

Springfield, MO 65804–1313

800–846–6242

Serving Illinois, Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, and Wisconsin. The center also has member agencies in Canada.

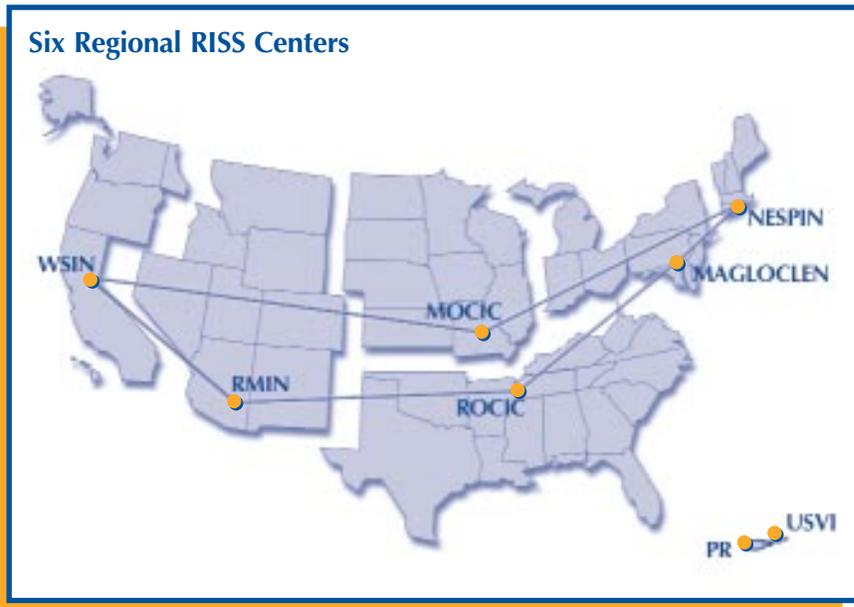
- **New England State Police Information Network (NESPIN)**

124 Grove Street, Suite 305

Franklin, MA 02038

800–343–5682

Serving Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont. The center also has member agencies in Canada.



■ **Regional Organized Crime Information Center (ROCIC)**

545 Marriott Drive, Suite 850
Nashville, TN 37214
800-238-7985

Serving Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia, plus Puerto Rico and the U.S. Virgin Islands.

■ **Rocky Mountain Information Network (RMIN)**

2828 North Central Avenue, Suite 1000
Phoenix, AZ 85004-1027
800-821-0640

Serving Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming. The center also has member agencies in Canada.

■ **Western States Information Network (WSIN)**

P.O. Box 903198
Sacramento, CA 94203-1980
800-952-5258

Serving Alaska, California, Hawaii, Oregon, and Washington. The center also has member agencies in Australia, Canada, and Guam.

State and local law enforcement support services and systems include an Intelligence Pointer Database, a National Gang Database (under development), and a secure intranet. All six centers are

electronically connected, and State and the local members are provided with access to the secure intranet, which facilitates secure e-mail transmissions and access to other databases. The centers sponsor technical training conferences. For further information, contact the BJA Clearinghouse at 800-688-4252 or access the BJA Web site at www.ojp.usdoj.gov/bja.

- **SEARCH, The National Consortium for Justice Information and Statistics.** SEARCH has been conducting a project to identify the most significant impediments to incorporation of the National Incident-Based Reporting System (NIBRS) in large local law enforcement agencies nationwide and promising and cost-effective approaches to encourage wider adoption of NIBRS by these agencies. Initiated in 1995 with BJS funding, the first phase identified the most important impediments to full NIBRS participation and the most promising and cost-effective approaches to encouraging wider and more rapid adoption of full NIBRS participation. Phase II focused on analyzing NIBRS data, identifying operational impediments to NIBRS implementation in a dozen key agencies located throughout the Nation, assessing the potential impact and benefits of limited changes in NIBRS reporting requirements, and continuing technical assistance to State and local agencies. SEARCH is now in the third phase of the project, which will provide extensive technical assistance concerning NIBRS implementation. Through SEARCH, the Bureau of Justice Assistance funds training and technical assistance to help State and local agencies develop systems that permit sharing of relevant information among police, courts, prosecutors, and corrections. Contact SEARCH at cheryl@search.org or access the SEARCH Web site at www.search.org.

- **Southwest Border States Anti-Drug Information System (SWBSADIS).** SWBSADIS, sponsored by NIJ, is a secure law enforcement information-sharing system that connects the intelligence databases in the four U.S.-Mexico southwest border States: Arizona, California, New Mexico, and Texas; the El Paso Intelligence Center; and certain components of the Regional Information Sharing System.

- **The State and Local Anti-Terrorism Training (SLATT) Program.** SLATT is funded through a grant to the Institute for Intergovernmental Research (IIR) by BJA. SLATT is a training and research program that provides pre-incident awareness, pre-incident preparation, prevention, and interdiction training and information to State and local law enforcement personnel in the areas of domestic anti-terrorism and extremist criminal activity. The Federal Bureau of Investigation's National Security Division Training Unit is a partner with IIR in providing SLATT training nationally. The SLATT law enforcement training program focuses on the detection, investigation, and prosecution of extremist-based crimes, criminals, and criminal activity, including those that may be foreign inspired. This focus distinguishes SLATT training from postincident "first responder" or other related weapons of mass destruction/nuclear, biological, and chemical response training provided to emergency service personnel. For additional information about the SLATT Program or upcoming training classes, please call 850-385-0600 and ask for the SLATT Program representative, send an e-mail to slatt@iir.com, or access the SLATT Web site at <http://www.iir.com/slatt/default.htm>.

Equipment Purchase and Transfer Programs

- **1033 Program—Excess Defense Personal Property.** Under Section 1033 of the National Defense Authorization Act, effective October 1, 1996, the Secretary of Defense has the authority to transfer to State and local agencies of law enforcement activities a wide variety of equipment—for example, weapons, vehicles, and aircraft—excess to the needs of the Department of Defense. The Secretary assigned this “1033 Program” to the Defense Logistics Agency, which created the Law Enforcement Support Office (LESO) at Fort Belvoir, Virginia, to administer the transfers through State officials (who are called State 1033 Coordinators). Law enforcement agencies have access to the program through these officials. Access by corrections agencies is limited, but available. The operation of the program is described in more detail in the *Federal Property and Equipment Manual*—available on JUSTNET (www.nlectc.org) and from NLECTC (800-248-2742)—and includes a complete list of State 1033 Coordinators. Information is also available directly from LESO at 800-532-9946 or the LESO Web site at www.leso.hq.dla.mil.
- **Federal Surplus Real Property Transfer Program.** Administered by the Bureau of Justice Assistance (BJA), this program recommends transfer or conveyance of surplus real properties, such as lands and buildings, that are determined by the U.S. Attorney General to be required for correctional facility use to State and local governments at no cost. The program is designed to alleviate crowding at State and local correctional facilities through transfer of suitable Federal land and buildings for new construction or renovation. For more information, contact BJA at 202-616-3214.
- **1122 Program—State and Local Law Enforcement Equipment Procurement Program.** The National Defense Authorization Act (Section 1122), dated November 10, 1993, established the requirement for procedures to be developed by the Department of Defense that would enable State and local governments to buy law enforcement equipment suitable for counterdrug activities through Federal procurement channels. Native-American tribes that perform law enforcement functions as determined by the Secretary of the Interior are also eligible. The Department of Defense designated the Department of the Army as the Executive Agent. The Defense Logistics Agency, U.S. Department of Justice, and General Services Administration are active participants in execution of the program. The “1122 Program” allows State and local governments to maximize their use of taxpayer dollars by taking advantage of the purchasing power of the Federal Government to receive discounts commensurate with large-volume purchases. More information on the 1122 Program can be found on JUSTNET at <http://www.nlectc.org> or in the *Federal Property and Equipment Manual*.

Further Information on OJP Grant Programs, Including Funding Guidelines and Application Forms

For detailed information about any OJP program, or for a referral to the appropriate contact in the administering State office, call the Department of Justice Response Center at 800-421-6770, or visit OJP’s Web site at <http://www.ojp.usdoj.gov>. Other useful and informative resources include the following:

- **Justice Grants site.** Maintained by NIJ's National Law Enforcement and Corrections Technology Center, this site includes an overview of all DOJ grant programs. Access the site at www.nlectc.org/grants.
- **Justice Information Center.** Operated by NIJ's National Criminal Justice Reference Service, the Center offers funding guidelines and application forms for DOJ grants. Access the site at www.ncjrs.org/fedgrant.htm.
- **JUSTNET (Justice Technology Information Network).** JUSTNET is NLECTC's World Wide Web/Internet site for publishing and otherwise sharing research and development information. Access the site at www.nlectc.org.
- **National Criminal Justice Reference Service (NCJRS).** NCJRS serves as OJP's clearinghouse for information and publications on the subjects of criminal and juvenile justice, law enforcement, and public safety. By calling NCJRS toll free at 800-688-4252, users can speak with an information specialist who can conduct individualized research and provide copies of OJP publications. NCJRS also has a home page on the World Wide Web that contains the full text of most OJP publications in a searchable format as well as links to other relevant sites. Access the site at www.ncjrs.org.
- **Office of Justice Programs Fiscal Year 2001 Program Plan: Resources for the Field.** Available from the National Criminal Justice Reference Service at 800-851-3420 or 301-519-5500 or access the OJP Web site at www.ojp.usdoj.gov.

Miscellaneous Sources of Grant Information and Assistance

The following resources might be of use to anyone applying for funding from the Federal Government:

- **Catalog of Federal Domestic Assistance (CFDA).** A governmentwide compendium of Federal programs, projects, services, and activities that provide assistance or benefits to the American public. Access this information at www.cfda.gov.
- **Criminal Justice Funding Report: Federal and Private Funding for Law Enforcement, Courts, and Corrections.** A biweekly newsletter published by Capitol City Publishers. Contact at 703-525-3080 or access the publisher's Web site at www.capitolcitypublishers.com.
- **Foundation Center Online.** The mission of the Foundation Center is to foster public understanding of the foundation field by collecting, organizing, analyzing, and disseminating information on foundations, corporate giving, and related subjects. Access its Web site at www.fdncenter.org.
- **Funding Law Enforcement Hotline.** A monthly newsletter that reports on grants and funding opportunities as they are announced. Contact at Quinlan Publishing Company, 617-542-0048 or access the information on the Web site at www.policecenter.com.

- **Fundsnet Online Services Home Site.** This privately owned Web site was created in 1996 to assist nonprofit organizations in finding funding resources on the Internet. Access the Web site at www.fundsnet services.com.
- **Government Information Services/Education Funding Research Council Grant and Funding Sources.** Provides information on Federal, corporate, foundation, and private funding. Access the Web site at www.thompson.com/tpg/fed_gts.
- **Notices of Funding Availability (NOFAs).** These announcements appear in the *Federal Register*, printed each business day by the U.S. Government, inviting applications for Federal grant programs. This Web site allows users to generate a customized listing of NOFAs. Access the site at ocd.usda.gov/nofa.htm.
- **The Grantsmanship Center (TGCI).** Founded in 1972, TGCI offers grantsmanship training and low-cost publications to nonprofit organizations and government agencies. Access its Web site at www.tgci.com.
- **Tips for Getting the Grant.** Some general guidelines for writing grant applications are available from the Corporation for Public Broadcasting. Access the information at the Web site www.cpb.org/grants/grantwriting.html.

APPENDIX



ABBREVIATIONS AND ACRONYMS

ABC	American Board of Criminalistics
ACES	Automated Computer Examination System
AGILE	Advanced Generation of Interoperability for Law Enforcement Program
APPA	American Probation and Parole Association
ASCLD	American Society of Crime Laboratory Directors
ASCLD-LAB	American Society of Crime Laboratory Directors-Laboratory Accreditation Board
ATF	Bureau of Alcohol, Tobacco and Firearms
AVIAN	Advanced Vehicle Interrogation and Notification System
BJA	Bureau of Justice Assistance
BJS	Bureau of Justice Statistics
BRTC	Border Research and Technology Center (an office in the NLECTC system)
BTTS	Bomb Threat Training Simulator
C/B	chemical and biological
CBRN	chemical, biological, radiological, or nuclear material
CCIPS	Computer Crime and Intellectual Property Section
CD	compact disc

CD-ROM	compact disc–read-only memory
CFDA	Catalog of Federal Domestic Assistance
CIS	Cops in Schools Grant Program
CITA	Crime Identification Technology Act
CLIP	Crime Laboratory Improvement Program
CMAP	Crime Mapping and Analysis Program
CMRC	Crime Mapping Research Center
CODIS	Combined DNA Index System
COMPASS	Community, Mapping, Planning, and Analysis for Safety Strategies
COPS	Office of Community Oriented Policing Services
CPO	Corrections Program Office
DA	Department of the Army
DAB	DNA Advisory Board (a program of the FBI)
DARPA	Defense Advanced Research Projects Agency
DCFL	Defense Computer Forensics Laboratory
DCPO	Drug Courts Program Office
DLA	Defense Logistics Agency
DNA	deoxyribonucleic acid (the basic genetic material found in all living cells and used to identify distinct individuals)
DoD	U.S. Department of Defense
DOE	U.S. Department of Energy
DOJ	U.S. Department of Justice

EM	electromagnetic
EMS	emergency medical services
EOD	explosive ordnance demolition
EOWS	Executive Office for Weed and Seed
EPA	U.S. Environmental Protection Agency
FBI	Federal Bureau of Investigation
FCC	Federal Communications Commission
FDLE	Florida Department of Law Enforcement
FEMA	Federal Emergency Management Agency
FIS	Firearms Identification System
FIST	Firearms Inquiry Statistics
GIS	geographic information system
GREAT	Gang Reporting Evaluation and Tracking
GSA	General Services Administration
HAT	Hazardous Access Training
HAZMAT	hazardous materials
HHS	U.S. Department of Health and Human Services
IAFIS	Integrated Automated Fingerprint Identification System (a component of the FBI)
IED	improvised explosive device
ILTSTC	International Land Transportation Security Technology Conference

IT	information technology
ITAA	Information Technology Association of America
IVVVS	In-Vehicle Voice Verification System
JAIBG	Juvenile Accountability Incentive Block Grants program
JPSG	Joint Program Steering Group
JUSTNET	Justice Technology Information Network (a communication tool of NLECTC; see the Web site at http://www.nlectc.org)
KFF	known file filters
LEA	law enforcement agency
LECTAC	Law Enforcement and Corrections Technology Advisory Council
LESO	Law Enforcement Support Office
LLEBG	Local Law Enforcement Block Grants
LTL	less than lethal
MAGLOCLEN	Middle Atlantic–Great Lakes Organized Crime Law Enforcement Network
MHz	megahertz
MIPT	Oklahoma City Memorial Institute for the Prevention of Terrorism
MMW	millimeter wave
MOCIC	Mid-States Organized Crime Information Center
MORE	Making Officer Redeployment Effective
mtDNA	mitochondrial DNA
NASA	National Aeronautics and Space Administration
NCFS	National Center for Forensic Science

NCHIP	National Criminal History Improvement Program
NCIC	National Crime Information Center (a program of the FBI)
NCJRS	National Criminal Justice Reference Service
NCTP	National Cybercrime Training Partnership
NDPO	National Domestic Preparedness Office
NEGIS	Northeast Gang Information System
NESPIN	New England State Police Information Network
NFSTC	National Forensic Science Technology Center
NIBRS	National Incident-Based Reporting System
NIJ	National Institute of Justice
NIST	National Institute of Standards and Technology
NISTIR	National Institute of Standards and Technology Interagency Report
NLECTC	National Law Enforcement and Corrections Technology Center
NOFA	Notice of Funding Availability
NRA	National Rifle Association
NSOR-AP	National Sex Offender Registry Assistance Program
NTIA	National Telecommunications and Information Association
NW3C	National White Collar Crime Center
OJJDP	Office of Juvenile Justice and Delinquency Prevention
OJP	Office of Justice Programs
OLES	Office of Law Enforcement Standards
OLETC	Office of Law Enforcement Technology Commercialization (an office in the NLECTC system)

OPCLEE	Office of the Police Corps and Law Enforcement Education
OSLDPS	Office for State and Local Domestic Preparedness Support
OS&T	Office of Science and Technology (an office of the National Institute of Justice)
OVC	Office for Victims of Crime
PAM	personal alarm monitoring
PCR	polymerase chain reaction
PERF	Police Executive Research Forum
RFLP	restriction fragment length polymorphism
RISS	Regional Information Sharing Systems
RMIN	Rocky Mountain Information Network
ROCIC	Regional Organized Crime Information Center
RSAT	Residential Substance Abuse Treatment for State prisoners
RTDD	Research and Technology Development Division
SASP	State Agency for Surplus Property
SCBA	self-contained breathing apparatus
SIMS	secondary ion mass spectrometry
SIS	State Identification System
SLATT	State and Local Anti-Terrorism Training Program
SRID	software radio interoperation device
STR	short tandem repeat
SWBSADIS	Southwest Border States Anti-Drug Information System

SWGDM	Scientific Working Group on DNA Analysis Methods
TGCI	The Grantsmanship Center
TSWG	Technical Support Working Group
TWG	Technical Working Group
TWGDAM	Technical Working Group on DNA Analysis Methods
UCR	Uniform Crime Report
URL	uniform resource locator (an Internet address)
USAF	U.S. Air Force
USSS	U.S. Secret Service
VAWO	Violence Against Women Office
VOCA	Victims of Crime Act
VOI/TIS	Violent Offender Incarceration/Truth-in-Sentencing Incentive Grants Program
VRT	voice response translator
WMD	weapons of mass destruction
WSIN	Western States Information Network
WTET	Weapons Team Engagement Trainer

The Office of Community Oriented Policing Services (COPS) is an agency within the Department of Justice, created by the Violent Crime Control and Law Enforcement Act of 1994 that responded to a rash of violent crime. COPS promotes a community-based approach to law enforcement that encourages preventing crime rather than responding once crime has been committed. The aim of COPS is to improve public safety by addressing both the roots of crime and the culture of fear created by crime, a culture which perpetuates criminal activity. The concept of acting locally and addressing the roots of crime i

- A. Community Oriented Policing 1. Program Description 2. Performance Tables 3. Performance, Resources, and Strategies a. Performance Plan and Report for Outcomes b. Strategies to Accomplish Outcomes c. Priority Goals. V. Program Increases by Item. VI.Â I. Overview of the Office of Community Oriented Policing Services. Introduction. In Fiscal Year (FY) 2017, the Office of Community Oriented Policing Services (COPS) requests a total of \$286,000,000, 188 positions and 124 FTE to further the Department of Justiceâ€™s (DOJâ€™s) goal to assist state, local, and tribal law enforcement agencies in their efforts to prevent crime, enforce laws, and represent the rights and interests of the American people. Program Title. Community Oriented Policing Services. Department Name. Department of Justice. Agency/Bureau Name. Office of Justice Programs. Program Type(s). Competitive Grant Program.Â Examples of COPS teaching strategies include Problem Oriented Policing guides, and the Regional Community Policing Institutes. COPS has not been able to define or quantify the remaining unmet "need" for community policing beyond the number of grant applications it receives. NO.