Christopher Gardner was a bright, 3-year-old little boy. Like most toddlers, he was the picture of wide-eyed innocence, with light brown hair falling in soft curls around a pair of enormous blue eyes.

Christopher Gardner was also the victim of what Sullivan County, New York, District Attorney Stephen Lungen called “one of the most horrifying cases of child abuse this State has ever seen.”

Christopher died at the hands of his mother and two of her friends while living in a small bilevel house in Bloomingburg, New York. According to Lungen, the trio kicked, hit, scalded, punched, sodomized, and twice threw the child down a flight of stairs in a brutal and ultimately fatal 3-hour torture session. Christopher’s mother and a male companion were sentenced to life without parole. The third attacker, a woman, pleaded guilty to felony assault.

There was one positive note in this otherwise tragic case: Christopher’s mother and her companion pleaded guilty to first-degree murder after seeing a computer-generated demonstration of the progression of the child’s injuries—a demonstration created by the National Law Enforcement and Corrections Technology Center (NLECTC)-Northeast Law Enforcement Analysis Facility (LEAF).

Lungen got the idea for such a demonstration while trying to find a way to successfully use New York’s relatively new capital punishment law.

“Our death penalty law is very technical,” Lungen says. “It has a provision for torture, but the problem was how to prove torture under the statute. To ask for the death penalty, I had to prove the death was intentional and was caused by torture . . . that it was caused by the mother and her codefendant, both with low IQs.”

Lungen tasked his investigative staff with identifying resources that could assist in implementing technology to address these issues. One of his staff recalled a recent conference during which NLECTC-Northeast conducted an outreach forum. Lungen contacted NLECTC-Northeast and was put in touch with Chris McAleavey, a project manager at the facility.

In his initial conversation, Lungen says that he told McAleavey that he “wanted to do a computer-generated presentation where we could progressively overlay injury by injury, starting with the scalp and working from head to toe. That way we could lay in each injury as we talked. It would let us show that he was tortured to death over a period of 3 to 4 hours, rather than in one brief attack. We had to show that even with their diminished mental capacity, these people at some point knew or should have known the ultimate outcome.”

McAleavey put together a team built on the expertise at LEAF to address the technical aspects of Lungen’s request. Roy Ratley, a program manager at LEAF, designed the demonstration.

Taking the Stab Out of Stabbings

The safety of America’s corrections officers is about to be augmented by efforts to keep British police officers safe while on duty.

One of the major hazards encountered by every corrections officer in the United States is an attack by an inmate armed with a sharp-edged or pointed object. In England, where criminal use of handguns is not prevalent, it is the police officer who also faces assaults by individuals wielding knives, ice picks, and the like.

Although the National Institute of Justice (NIJ) has led the way in establishing body armor standards relating to ballistics, its work with stab-resistant body armor NIJ got a helping hand from the Police Scientific Development Branch (PSDB) of the Home Office in the United Kingdom.

According to Kirk Rice, program manager of weapons and protective systems at the National Institute of Standards and Technology’s Office of Law Enforcement Standards, NIJ became involved with PSDB through an initiative of the U.S. Secret Service, which also has a keen interest in standards for stab-resistant vests.
Researchers developed an “instrumented” knife blade—that is, a knife blade that could measure the thrust and energy of a stab. To their surprise, PSDB researchers found that the energies delivered were higher than expected. They suspected the higher numbers could be due to the knife’s large built-in handguard, which was incorporated into the knife for safety reasons.

PSDB looked at the actual mechanics of stabbing, Rice says. Researchers developed an “instrumented” knife blade—that is, a knife blade that could measure the thrust and energy of a stab. In the first series of tests, 500 young, healthy male recruits tried out the blade, stabbing from a variety of directions and using a number of techniques: roundhouse, overhead, jab, and double- and single-handed stab. Using information from the instrumented blade, researchers could determine the kind of energy a human being was capable of delivering.

By watching high-speed videotapes of the stabs and by examining data collected from the knife, PSDB found that, in the act of stabbing, each subject’s hand slipped on the handle, toward the handguard. “In the act of stabbing, the human hand will slip a bit,” Rice says. “And as you bear down on the target, you have even more slippage. The handguard the PSDB employed allowed more energy to be delivered. But, in reality, a knife is not going to have such a large handguard.”

Through the second series of tests the energy load applied to the handguard was measured and then discounted. The resulting “stab energy” number was calculated to be 43 joules.

According to Rice, one joule is roughly the equivalent of 1 foot-pound of energy (a 1-pound weight dropped from a height of 1 foot delivers 1 foot-pound of energy). PSDB, he says, determined that for the highest level of protection, a vest should be able to withstand 43 joules of energy, allowing no more than 7 millimeters, or about one-fourth inch, of penetration. PSDB also required a 50-percent overtest, in which the same vest was tested at 65 joules and allowed no more than 20 millimeters of penetration.

Rice says that in 1999, PSDB issued a stab-resistant standard for vests to be worn by its law enforcement officers. The agency defined two types of blades—both of which are professionally engineered and made of good quality steel, like a kitchen knife—as being representative of the typical threat on the streets of England. The NIJ stab-resistant body armor project looked at the PSDB research and its standard and adopted the segments that represented the threat to American law enforcement and corrections officers.

The NIJ standard, which will be published this year under the title NIJ Standard-0115.00: Stab Resistance of Personal Body Armor, puts stab-resistant vests into two categories. What differentiates each category is the kind of threat it is designed to stop, Rice says, not the amount of energy it takes to deliver it.

One category of protection stops “engineered,” or high-quality blades, such as kitchen knives or those purchased at sporting goods stores or gun shows. This category represents the threat typically found on the street. The second category is specific to vests that stop the type of improvised weapons commonly found in correctional facilities, those of lower quality material that have been sharpened on concrete or some other type of rough surface.

Within each category are three levels of protection: the first level stops 23 joules of energy; the second stops 33 joules of energy, and the third stops 43 joules of energy.

For example, Rice says, a prison administrator might wear a vest designed to stop improvised weapons and wear the 23-joule vest, while a corrections officer on a high-security unit would probably wear a 43-joule vest.

Although NIJ relied heavily on PSDB’s research, the new standard also has the input of the National Armor Advisory Board and the Law Enforcement and Corrections Technology Advisory Council, both of which are advisory groups to NIJ’s National Law Enforcement and Corrections Technology Center (NLECTC) system.

To receive a copy of the upcoming standard, NIJ Standard-0115.00: Stab Resistance of Personal Body Armor, contact NLECTC—National, 800–248–2742. For more detailed information relating to the development of the NIJ standard, contact Kirk Rice at the National Institute of Standards and Technology, Office of Law Enforcement Standards, 301-975-2757.
LEAF, admits neither he nor his engineers had ever undertaken a project like this. According to Ratley, LEAF typically works with audiocassettes, using U.S. Air Force computer technology to identify and reduce background noise and facilitate the identification of dialects, languages, words, or speakers. For more than 2 years, Ratley says, LEAF has evaluated and tested technologies in these areas and found ways to adapt these technologies for use by law enforcement.

But despite their lack of direct experience, Lungen says, the NLECTC–Northeast/LEAF team bought the idea “hook, line and sinker.” “We didn’t even know if it would be admissible in court,” he says. “But those fellas and gals took that idea and put it into pictures . . . and it was just unbelievable.”

The team chose 38 of the prosecutor’s hundreds of crime scene and autopsy photographs that depicted the boy’s more than 98 separate injuries. After scanning the photos into a computer, the team methodically removed the injuries and manipulated the photographs to look like natural, uninjured skin. Then they put the injuries back in.

For example, one photograph showed an uninjured arm, while the next showed the grisly bite mark of one of Christopher Gardner’s attackers.

“It was very time-consuming,” Ratley says. “The biggest impact was that each of our engineers took a body part. One individual worked only on the arms, another only on the back. I got the facial area. It didn’t really hit me until I started pulling the injuries off that what emerged was a child’s face.”

At first, although one of the suspects pleaded guilty to felony assault, the boy’s mother and male companion maintained their innocence even in the face of first-degree murder charges—charges that carried the death penalty.

“I was definitely going to get murder two,” Lungen says. “Could I get it to murder one? The defense said, ‘No.’ But our evidence came about pretty well. This display helped push it over the top.”

The Gardner case was an opportunity to demonstrate a new technology, one that ultimately helped lead to the passage by the New York State Assembly of the Christopher Gardner Memorial Act which, if passed by the New York State Senate and enacted into law, will toughen penalties against those convicted of child abuse. It also saved Sullivan County a significant expenditure of money by keeping the case out of court.

The Law Enforcement Analysis Facility, Ratley says, offers demonstrations to the criminal justice community in a unique way. “We adapt military technology, testing and evaluating it for use by law enforcement. We don’t build products for sale,” he says. “We build ideas.”

For more information about the National Law Enforcement and Corrections Technology Center–Northeast or the Law Enforcement Analysis Facility, call 888–338–0584. For additional information relating to the Christopher Gardner case, call Sullivan County District Attorney Stephen Lungen, 914–794–3344.
4

The technological revolution that has swept society as a whole in recent years has also affected the criminal justice system. Some technologies that not long ago seemed advanced—vests that can stop bullets and electronic monitoring of prisoners—that not long ago seemed advanced—vests that can stop bullets and electronic monitoring of prisoners—today seem commonplace. But the revolution continues apace, with ever more spectacular advances now being made, or in the testing stages, or on the drawing board.

As the research arm of the U.S. Department of Justice, the National Institute of Justice (NIJ) has, since its founding 30 years ago, been in the forefront in sponsoring the development, testing, and demonstration of technology to improve the justice system. The development of DNA testing standards, soft body armor, and improved fingerprint evidence collection are some of the many areas in which NIJ has played a leading role.

More recently, with strong support from the Administration and Congress, NIJ has accelerated the pace of its efforts. Less-than-lethal technologies to minimize the use of force, computerized mapping to pinpoint and analyze crime patterns, concealed weapons detection to prevent violence, methods of stopping fleeing vehicles to apprehend suspects, and improvements in DNA laboratories to aid in evidence testing—all these capabilities, and others, are now being explored by NIJ. Their application can mean even greater transformations in law enforcement operations.

TechBeat plays an important role as an essential link communicating the latest information about these developing technologies from the National Law Enforcement and Corrections Technology Center. By keeping law enforcement, courts, and corrections personnel current about the tools they can use, the newsletter makes a difference in controlling crime and ensuring justice.

From the Director,
Office of Science and Technology

Law enforcement, courts, and corrections officials and officers working in the field know how crucial technology is to their day-to-day operations. In some circumstances, having the right tool can even mean the difference between life and death.

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David G. Boyd, Ph.D.
Director
Office of Science and Technology
National Institute of Justice

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The National Institute of Justice is a component of the Office of Justice Programs, which also includes the Bureau of Justice Assistance, Bureau of Justice Statistics, Office of Juvenile Justice and Delinquency Prevention, and Office for Victims of Crime.
LTL  It means less than lethal. It means not using deadly force to bring a violent or noncompliant individual into custody. It, however, does not always mean that the individual is subdued without trauma or injury.

So just how safe, how effective, are LTL devices?

The National Institute of Justice (NIJ) is trying to take some of the guesswork out of the use of LTL devices, specifically incapacitating, nonpenetrating projectiles, also known as blunt trauma weapons.

"It's called our Blunt Trauma Program, part of our Less-Than-Lethal Technology Program," says Sandy Newett, NIJ program manager. "We have funded studies that are examining the effectiveness of blunt trauma projectiles and the physiological impact they have on the human body."

There are a number of LTL devices on the market, but manufacturers do not always include scientific validation of the effectiveness or safety of their devices, Newett says. One reason is that these types of studies can add considerable development time and money to a device, sometimes delaying its entrance into the commercial market for years. Newett says, however, that, according to anecdotal information and some preliminary operational data, most blunt trauma instruments, such as rubber bullets or bean bag rounds, work well. NIJ wants to add to that level of confidence with the addition of studies that provide scientific, statistical, and operational verification.

In one of these LTL studies, Sgt. Ken Hubbs of the San Diego Police Department's (SDPD's) Special Response Team is looking at the types of incidents in which the subjects were armed with something other than a firearm, such as a baseball bat, knife, stick, shovel, or some other type of nontraditional weapon. SDPD wanted to find a way to disarm these suspects without the use of deadly force. After much research, testing, and study, the department determined the type of low-lethality munition it preferred.

Hubbs, however, continued his LTL research. With the help of NIJ funding, he teamed up with a criminology researcher and has been collecting data from agencies around the country to study the use and effectiveness of blunt impact projectiles. With data from more than 600 incidents, this study will provide a database of information, everything from the type of incident to the kind of projectile used, to whether or not it worked, to type and extent of injuries.

"They're looking at whether the suspect was a 250-pound man or a 100-pound woman, what happened during the incident, whether alcohol or drugs were involved, along with a variety of other factors," Newett says. "Preliminary data have revealed that about 61 percent of the incidents in which a blunt impact (LTL) projectile was used involved 'suicide by police.' This is when a suspect attempts to force police [to use lethal means] to kill him. More information will be available when the study is published."

In another study, a biomechanical surrogate developed by the automobile industry is being modified and validated for LTL blunt trauma. NIJ is focusing specifically on the chest area to determine the level of trauma caused by relatively high-velocity, low-mass blunt-impact projectiles (automobile tests look at low-velocity, high-mass impacts). In addition, research from the sports arena, specifically baseball, is adding to the knowledge base.

"You can calculate the kinetic energy of a device," she says. "However, this may only give you a clue as to what kind of injury you might get. And even then, it's not been validated scientifically or operationally."

The biomechanical surrogate will provide that information at a level of confidence for blunt trauma weapons that hit the chest. We can then provide the information to law enforcement and corrections."

Another NIJ-funded study is looking at the various empirical and theoretical models that have been previously used to predict the probability of injury. This study is building on similar work already done by the military and will examine the strengths and weaknesses of each model.

The final component to the Blunt Trauma Program, Newett says, is the development of the ring airfoil projectile (RAP). (See "NIJ Takes the RAP," in TechBeat, Winter 1998.)

Created more than 30 years ago by a U.S. Army engineer, this 2½-in., 1-ounce rubber ring flies straight at about 200 feet per second. Its impact on the body has the feel of being hit by a fastball thrown by a major league pitcher. The ring has cavities that can be filled with pepper powder, which is expected to make the device much more effective.

In its initial incarnation, the RAP was fired by a launcher-adapter that fit over the barrel of a M16A-1 rifle and was propelled by a 5.36mm low-grain blank cartridge. NIJ's work has been to create a new kind of launch device. According to Newett, the engineering on a pistol-grip launch system that fires the RAP from a single-use cartridge is nearly complete and will be ready for demonstration sometime this summer.

For more information on NIJ's Less-Than-Lethal Technology Program or the Blunt Trauma Program, contact Sandy Newett, 202–616–1471. For a copy of "NIJ Takes the RAP," call the National Law Enforcement and Corrections Technology Center, 800–248–2742, or log on to the center's Web site, JUSTNET, at www.nlectc.org.
Camera Enforcement To Catch Red-Light Runners
Business Wire

In a number of States, including New York and California, tests involving automatic camera use have yielded positive results in regard to reducing the number of drivers who run red lights. The Federal Highway Administration (FHA) has found that when law enforcement uses automatic cameras to track the license plates of offenders, the rate of red-light running declines. FHA believes using this method could lead to a 20-percent to 60-percent decrease in red-light running.

Video Visiting Is Latest Jail Trend
Los Angeles Times

Jail facilities across the United States are turning to video set-ups as a solution to security and smuggling risks associated with visits to inmates. While the Federal prison system has not installed video systems and only the Hawaii State prison system uses one, numerous county jails in Florida, California, and other States are replacing face-to-face visits with safer, cheaper video conferences. The Santa Clara County, California, Department of Corrections public information officer, Bryan Peretti, predicts that the trend will increase despite complaints from inmates and the American Civil Liberties Union's National Prison Project that the system practically eliminates the purpose of a visit. In most jails that use video visits, the inmate and the visitor are in separate rooms or even buildings, which does away with the need to search for either person before and after a visit, which in turn reduces the burden on prison staff. Cutting staff is one way the system saves money, but another source for cost savings through video visits is that jails do not need to erect expensive security facilities for visitors. In all, about 12 jails in the United States have instituted video as an option or a requirement, says Michael Black of Datapoint Corp., which manufactures the systems. John Boston, a prisoner rights advocate, decried the trend and suggested that inmates who cannot see their families face-to-face are more apt to commit more crimes when they are freed.

A New Look at Old Crimes
Los Angeles Times

The recent fall in the homicide rate in Los Angeles has allowed detectives to take another look at older unsolved homicide cases for which they did not have enough time when the murder rate was higher. In addition, there are new technologies today, such as computer databases and DNA tests, that help police solve crimes that were committed before the technology was available. According to the Los Angeles Police Department (LAPD), homicides are down in the city, from 1,092 in 1992 to 424 in 1999, and the reduction in murders is area-wide, allowing detectives to solve older crimes on their downtime. LAPD has said that the work has been the decisions of the detectives and officers involved, and there has been no special directive from the department itself. The new technology available to detectives forces has put the burden on the LAPD Scientific Investigation Division (SID) to determine DNA evidence from genetic material collected at older crime scenes that has had no use until recently. The older cases, however, must wait while evidence from newer ones is analyzed, as SID is limited in its resources as well. Greg Matheson, assistant director of the SID crime lab, believes that in addition to the DNA samples analyzed for 550 cases in 1998, the unit has a backlog of 200 cases waiting to be investigated. Besides DNA and ballistic analysis machines, fingerprinting has improved due to the advent of a machine in 1986 to scan fingerprints in terms of geometric patterns, a much quicker and more accurate method than used before. But the most important factor has been increased time for detectives to spend investigating old murders through interviews and examining old evidence that has lain dormant while the homicide rates were at their highest in the early 1990s. Although the cases are usually more expensive and time consuming to investigate, all involved believe that the moral necessity of the work precludes any thought of economics.

State Will Expand DNA Sampling of Felons at Start of 2000; Any Felon Released or on Probation Will Have To Submit to a DNA Test
Wisconsin State Journal

As of January 1, 2000, every felon released or on probation will be forced to submit DNA samples for Wisconsin's DNA databank. Wisconsin is expanding the use of DNA because the "technology is more affordable," according to Wisconsin's State Attorney General Jim Doyle. Doyle proposed the expansion earlier in 1999, and his idea was supported by the State government with an allotment of $1.25 million in the 1999–2001 State budget to be used specifically for this task. Wisconsin has been collecting all sex offender DNA since 1993, and Doyle says that adding all felons will more than double the DNA database, increasing convictions of repeat offenders. Over the last 6 years, the DNA database has helped solve approximately a dozen sexual assault or homicide cases. In several of the cases, the perpetrators would have remained unknown because of the lack of any other evidence.

Deputies To Test Tiny Videocams
Los Angeles Times

The Los Angeles County Sheriff's Department has implemented a trial period for the latest law enforcement technology: body-mounted cameras. Fourteen deputies have been equipped with special vests outfitted with a black box visible on the chest, which houses a camera, a power source, and an antenna that transmits to a recorder in the trunk of their cruisers. If the pilot program proves a success, Sheriff Lee Baca will make them mandatory throughout the depart- ment. Some issues still need to be worked out, among them, privacy rights, the possibly overwhelming production of tapes (up to 295,000 per year), and that the cameras are only used at the deputies' discretion. But the department hopes that the tapes will be useful in court, boost public awareness of what the deputies are doing, and allay fears of racial profiling. "This system will ensure we're stopping people for the right reasons," says Baca.

Digital Video for ATM Security Catching On
American Banker

Banks are increasingly tanking their videotape systems and replacing them with digital video storage

(See TechShorts, page 10)
Tracking Down a Vehicle

PDQ: Proven and popular, PDQ is the paint identification database of choice for investigators and practitioners across North America. PDQ was instrumental in solving a Washington State hit-and-run accident. Lamoureux says, "Because we don’t have every make, model, and year, we ask agencies to try to target those holes when they collect samples. Our requirement is that agencies or lab systems collect 60 samples every year, but that may change. In the beginning, we only had 14 agencies using PDQ. But now we’ve trained 50 agencies in the U.S. and all the labs in Canada, and interest is growing. We have tons of samples, so we’re being a little picky so we can fill the holes in the database. As we train more agencies, we may change the number of samples we require. This is a decision that will probably be made by SWGMAT in conjunction with the RCMP and the FBI.”

Agencies have to pay for a Munsell color system, which is a book of color chips with numbers assigned to each color. The Munsell system allows investigators to compare the chips to a sample of the undercoats and assign a number to it that corresponds with the samples in the database. As we train more agencies, we may change the number of samples we require. This is a decision that will probably be made by SWGMAT in conjunction with the RCMP and the FBI.”

For more information about the PDQ database and its components, call 888-841-5111 in the United States or 613-998-6844 in Canada. Or, e-mail Lynne Lamoureux at Lynne.Lamoureux@rcmp-grc.gc.ca.
The National Institute of Justice (NIJ), responding to recommendations by the law enforcement and corrections community, created its Technology Assessment Program Information Center (TAPI) into the National Law Enforcement and Corrections Technology Center (NLECTC) system. Created in 1994 as a component of NIJ’s Office of Science and Technology, NLECTC’s goal, like that of NIJ, is to gather support, research findings, and technological expertise to help State and local law enforcement and corrections personnel do their jobs more safely and efficiently.

NIJ’s NLECTC system consists of facilities located across the country that are colocated with an organization or agency that specializes in one or more specific areas of research and development. Although each NLECTC facility has a different technology focus, they work together to form a seamless web of support, technology development, and information.

NLECTC–National
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The National Center, located just 30 minutes north of Washington, D.C., is the hub of the NLECTC system. It provides information and referral services to anyone with a question about law enforcement and corrections equipment or technology. Its staff manage the voluntary equipment standards and testing program that tests and verifies the performance of body armor, metallic handcuffs, shotguns, and police vehicles and tires. This office produces consumer product lists of equipment that meets a specific set of performance standards and also operates JUEST (Justice Technology Information Network), an Internet World Wide Web site that provides links to the entire NLECTC system and other appropriate sites, as well as assistance to those seeking information about equipment, technology, or research findings.

NLECTC–Rocky Mountain
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NLECTC–Rocky Mountain is located at The Aerospace Corporation, a nonprofit corporation that provides technical oversight and engineering expertise to the Air Force and the U.S. Government on space technology and space security systems. NLECTC–West draws on The Aerospace Corporation’s depth of knowledge and scientific expertise to offer law enforcement and corrections the ability to analyze and enhance audio, video, and photographic evidence. In cooperation with The Aerospace Corporation, this NLECTC facility also has available an extensive array of analytic instrumentation to aid in criminal investigations, such as a scanning electron microscope, an x-ray microscope, and a mass spectrometer, all of which are used to process trace evidence. Its other areas of expertise include computer architecture, data processing, communications systems, and identifying technologies to stop fleeing vehicles.

Border Research and Technology Center (BRTC)
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Supported by NIJ, the Office of Law Enforcement Standards applies science and technology to the criminal justice community. 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 research and standard reference materials for forensic science 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, 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 (OLECT)
225 Broadway, Suite 740 • San Diego, CA 92101
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The Office of Law Enforcement Technology Commercialization, a program of OLES, is located at Wheeling Jesuit University (OLECT’s mission is to work with industry manufacturers, and laboratories to facilitate the commercialization of technologies for the law enforcement and corrections marketplace. OLECT provides special services and assistance to innovators, entrepreneurs, universities, Federal and other laboratories, and U.S. manufacturers nationwide in commercializing technologies that will enhance the effectiveness of law enforcement and corrections practitioners. A national partnership is being developed to provide a continual pipeline of products, concepts, and standard references that will expedite the commercialization of new products and services needed for State and local law enforcement and corrections communities. OLECT has directly assisted in commercializing several innovative products, including the RoadSlate®, a novel vehicle-stopping device; Tiger Vision®, a special low-cost, handheld night vision device; an Explosive Ordnance Disposal Technician Training Kit; and the Counterpoint Stab and Slash Protective Vest. OLECT has identified more than 70 additional emerging technologies and concepts that are currently being evaluated for possible commercialization.

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The newest addition to the NLECTC system, this facility is housed in the University of Central Florida and initially will focus on arson and explosives research. Its mission is to conduct fundamental research into the basic nature of fire and explosives phenomena, provide the support to develop standard protocols for analyzing arson and explosion debris, promote the use of electronic media to access and exchange information about the forensic sciences, and provide educational opportunities to practicing professionals and full-time students. This new facility will draw on the experience and expertise of the university, which houses a forensic science program with an active research program, as well as the Institute of Simulation and Training, which is currently exploring ways to simulate explosive reactions to study various chemical processes.
In addition to funding the National Law Enforcement and Corrections Technology Center, NIJ supports the National Criminal Justice Reference Service (NCJRS), an international clearinghouse on crime and justice information. NCJRS staff respond to reference questions, provide referrals to other resources, distribute NIJ and other Office of Justice Programs (OJP) documents, and maintain a mailing list of more than 45,000 registered users. In addition, NCJR S sponsors the NIJ Criminal Justice Conference Calendar at http://www.ncjrs.org/calendar, which lists conferences and meetings of interest to the criminal justice community. If you are interested in signing up for the NCJRS mailing list, you may request a registration form using any of the following methods:

- **Fax-on-Demand**: Dial 800–851–3420, select option 1, then option 2. The registration form is #1 on the document index. The form will be faxed to you immediately.
- **Fax**: You may fax your request for a registration form to 410–792–4358. You will receive a form promptly in the mail.
- **E-mail**: Send an e-mail to askncjrs@ncjrs.org and request a registration form. It will be sent to you in the mail.
- **Write**: Send a written request to NCJRS, P.O. Box 6000, Rockville, MD 20849–6000.
- **Call**: You may call an NCJRS information specialist and request a registration form. The number is 800–851–3420.

As a registered user, you will receive the bimonthly NCJRS Catalog, the quarterly NIJ Journal, and selected reports based on your criminal justice interests. For more information about NIJ and NCJRS, visit their Web sites: http://www.ojp.usdoj.gov/nij and http://www.ncjrs.org.
The Problem: Pay $2,000 to $5,000 for a quality night vision device (NVD) and hope it doesn’t break. Repairs can range from $500 to $2,000. Or purchase a less expensive NVD and sacrifice quality, plus face the possibility of having to send it out of the country for repairs.

The Solution: A loan-lease program for night vision devices at a yearly cost of $300 per unit.

Law enforcement and corrections agencies now have the opportunity to acquire NVDs with a commercial price of $4,300 for just $300 per year under a loan-lease program sponsored by the Crane, Indiana, Naval Surface Warfare Center (NAVSURWARCENDIV Crane). Called the Night Vision Systems Law Enforcement Support Program, this initiative puts high-quality night vision goggles (model AN/PVS–5) refurbished to military standards into the hands of departments large and small. These goggles are excellent for incidents where suspects are hiding in wooded areas at night.

If the goggles need to be repaired at any time, NAVSURWARCENDIV Crane will immediately ship a replacement at no additional cost, resulting in minimum downtime for the department. As new versions of the goggles become available, the center will replace the AN/PVS–5s with upgrades at no additional cost. In addition, the center has included in the program the repair of agency-owned night vision and thermal imaging equipment at actual repair cost. In the future, NAVSURWARCENDIV Crane plans to extend the program to include light-intensifying handheld night vision scopes and pocket scopes. The $300 fee covers refurbishing and administrative costs.

Who To Contact: Preferably, requests for enrollment in the Night Vision Systems Law Enforcement Support Program should be faxed on department letterhead to Steve Roberts, Crane Naval Surface Warfare Center, 812–854–1701. The fax should include the number of officers in the department, number of goggles requested, and a point-of-contact and phone number. For program-specific information, call Steve Roberts at 812–854–5847.

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