Putting the Fire Out in Utica

At its worst, Utica firefighters battled two to three fires a night. The city’s arson rate was twice that of the national average, with 45 percent of all structure fires ruled arson. The national average for arson case closures was 15 percent, but Utica only closed 2 percent of its cases. Structure fires numbered more than 250 in 1997—far too high for this town of 65,000 people living in 9 square miles.

Although many Utica neighborhoods remained strong during the city’s economic downturn, its inner city bore the brunt of the arson-related crimes. But it was here, right in the middle of what looked like a war zone, that hope was born. With $10,000 in funding from the Federal Emergency Management Agency (FEMA), the city of Utica, several surrounding local agencies, and a number of Federal agencies formed the Utica Arson Strike Force in April 1997. From each participating agency, the strike force tapped experts in all facets of arson investigation and housed them in an abandoned firehouse in the heart of the most fire-ravaged section of the city.

Although in existence a relatively short time, the strike force has turned around what had become a serious and dangerous trend. Since its inception, arson has dropped by 50 percent, closure rates now stand at 52 percent, and the conviction rate is 100 percent, according to Utica Police Department Capt. Claude DeMetri, who heads the strike force. Not only did the strike force investigate current fires, DeMetri says, it opened more than 120 old cases dating back to 1991. Nineteen of those have since been closed by arrest.

Taking the Fight Out in Lakewood

The Lakewood Police Department is proving that when it comes to domestic violence, technology not only saves lives, it also simplifies and speeds the handling of cases. This Colorado agency used computer technology to take a closer look at how it handles domestic violence calls. By implementing a program that uses “process mapping,” it has dramatically changed the structure of its domestic violence response system—so much so that it became one of the reasons Good Housekeeping magazine named the Lakewood Police Department one of the top eight law enforcement agencies in the country.

Lakewood’s program started in 1995 as a spinoff of a project that involved the city of Chicago and Motorola, Inc. Motorola had used a process mapping program to improve its overall performance, and offered the program to the Chicago Police Department for the same purpose. The project paired the Performance Learning Corporation, which had expertise in process mapping, with the Police Executive Research Forum. With sponsorship from Motorola, the project expanded to include six other U.S. cities: Lakewood, Colorado; Phoenix, Arizona; Charlotte-Mecklenburg, North Carolina; West Palm Beach, Florida; Arlington, Texas; and Naperville, Illinois, as well as the Thames Valley Constabulary in the United Kingdom.

Process mapping is an alternative to traditional,
DeMetri believes this success lies in the cooperation that exists among the participating agencies. The strike force, he says, consists of a commander, a deputy commander, a technical resource coordinator, an operations officer, three fire marshals, an arson detection K-9 and handler, a forensic technician, a special agent from the Bureau of Alcohol, Tobacco and Firearms (ATF), an assistant district attorney on call 24 hours a day, and six investigators. Participating agencies include the Utica Police Department, Oneida County Sheriff’s Department, Utica Fire Department, New York State Office of Fire Prevention and Control, and New York State Police. Part-time members come from the U.S. Marshals Service, the New York State Insurance Fraud Bureau, and the National Institute of Justice’s (NIJ’s) National Law Enforcement and Corrections Technology Center (NLECTC–Northeast).

NLECTC–Northeast got involved in the strike force at the request of FEMA, which was responding to an appeal by U.S. Representative Sherwood Boehlert (R-NY), for help with the growing problem of arson. Utica was designated as the fourth pilot city in FEMA’s National Arson Prevention Initiative. FEMA asked NLECTC–Northeast, located in Rome, New York, to assess and provide for the team’s technology requirements.

“They needed a digital camera, a color scanner, printers, and funding to build a custom database, which we provided,” says John Ritz, director of NLECTC–Northeast. “They also needed a local area network, which we designed, built, and implemented. This network gives them the capability to send and receive information over the Internet and to share information with other agencies.”

Through the U.S. Air Force’s Law Enforcement Analysis Facility, also located in Rome, NLECTC–Northeast also cleaned up audiotapes taken from body wires and enhanced the quality of surveillance audio and videotapes.

“The actual number of dollars invested has not been that much,” Ritz says. “The task force had substantial manpower and expertise in every area of arson investigation. We provided the technology that supports what they do. With the digital camera, they can develop high-quality investigative documents, which increases their conviction rate. It also lets them e-mail suspect photos to other agencies, which has helped them arrest arsonists in New York City, North Carolina, Nevada, and Florida.”

In addition to accessing state-of-the-art technologies and expertise, the arson strike force changed the basic structure of the typical arson investigation. Instead of waiting for the fire marshal to investigate and rule on a particular blaze, the strike force assumed every fire was arson and treated the area as a crime scene. Investigators and fire marshals rolled alongside the fire department at the moment the fire alarm sounded. They watched how the structure burned, canvassed the crowd for suspects and witnesses, conducted on-scene interviews, and took photographs of the crowd and fire scene. If the fire marshal decided it was arson after the fire was out, the strike force simply continued their investigation.

The strike force also took advantage of cooperation, donations, and funding from the community: A local communications company provided intercoms for the strike force offices; a cell phone company supplied cell phones to investigators free for 6 months; local businesses, agencies, and colleges donated office furniture, computers, and supplies; area insurance companies donated money and camera equipment; the Utica Fire Department donated pagers with group paging capabilities; the ATF provided a radio base station, portable radios, surveillance equipment, and a van; the sheriff’s department provided two computers and three vehicles seized from drug investigations, while its offender work program supplied manpower for construction, remodeling, and cleanup of the strike force offices; and the U.S. Marshals Service provided prisoner transport services.

The strike force has been such a success that it is expanding to cover the entire county and is being used as a model for an area drug task force. And, even more important to the city’s economic welfare is that downtown business owners are starting to rebuild, remodel, and restore their properties. Utica is truly rising from the ashes.

For more information about the Utica Arson Strike Force and its operations, contact John Ritz or Dave Hallett at NLECTC–Northeast, 888-338-0584; or Capt. Claude DeMetri, 315-732-7260. You can also access the strike force’s World Wide Web site at www.borg.com/~uticapba/arson.

At its worst, Utica firefighters battled two to three fires a night. The city’s arson rate was twice that of the national average, with 45 percent of all structure fires ruled arson.
the practice of applying restraining devices to individuals once they are subdued is common throughout the country. However, with extraordinarily violent or delirious individuals, the procedure of connecting the handcuffs to secured ankles—frequently referred to as “hogtying”—may be the only way to physically immobilize them so they are no longer a threat.

But due to the potential risk of an “in-custody sudden death” and its association with a restraining factor that has come to be known as “positional asphyxia,” the option of applying a new or Tourniquet Apprehension Restraint Procedure (TARP) has been eliminated by many law enforcement and corrections agencies. So the issue police and corrections agencies need to confront and resolve when formulating policies and procedures for restraining violent persons is, “Will this procedure be considered excessive or unreasonable force because it is considered some as potentially lethal?” It will come as a surprise to learn that the experts are not unanimous.

A correlation between an “in-custody sudden death” and “positional asphyxia” was hypothesized by Dr. Robert Neuman, a consultant for the University of California, San Diego, in 1988 based on a study he conducted to determine the oxygen recovery rate of the body when influenced by extreme exertion. After exercise (such as a violent struggle with law enforcement or a restraining officer), does the blood oxygen level decrease? More significantly, what effect does applying an extremally weight on the chest and stomach, have on one’s ability to recover to a normal rate of heart and blood oxygen level? Furthermore, could the physical restraint and the position of the body impair the mechanical respiratory process of inhaling and exhaling?

Contemporary policies and procedures adopted by law enforcement and corrections agencies across the country have been based on these findings. In fact, most court-recognized experts refer to Reay’s study as the acknowledged standard. However, Reay’s methodology and logic were never critically examined by his peers or examined by the court itself, the restraining procedures adopted by law enforcement and corrections community’s options and procedures in light of these developments.

A point to remember is that control refers to the force necessary to “stop the fight” (as in gain control) as opposed to restraint, which is the method by which the individual is immobilized using some type of device, such as handcuffs and/or hobbles. Stopping the threat should be the first concern, then the method or device used for restraining the individual and preventing the need for more vigorous control can be considered. Once the person is “adequately” restrained, the physical condition of the person should be carefully monitored and any critical condition immediately addressed. Departments should consider all factors (including alternatives if any exist) when determining revisions for methods of effectively restraining violent individuals.

The National Institute of Justice reported in the Winter 1998 edition of TechBeat that an informational videotape would soon be released to address this critical issue for law enforcement and corrections. It has since been delayed in order to accurately include the latest information about positional asphyxia. The videotape is being revised and edited and will be released in the near future. For more information, please contact the National Law Enforcement and Corrections Technology Center-National at 800-248-2742, or visit the center’s World Wide Web site, JUSTNET, at www.nieic.org for updated information.

This article was written by Michael Grossman, Director, Technology Assistance Division, Office of Science and Technology, National Institute of Justice, and Sgt. Gilbert Aguilar, Los Angeles County Sheriff’s Department.
The National Institute of Justice (NIJ), responding to recommendations by the law enforcement and corrections community, converted its Technology Assessment Program Information Center (TAPIC) 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 offer support, research findings, and technological expertise to help State and local law enforcement and corrections personnel more safely and more efficiently do their jobs.

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 of the NLECTC facilities face a different technology focus, they work together to form a seamless web of support, technology development, and information to help the law enforcement and corrections communities do their jobs more safely and efficiently.

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 manages 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 specific to NLECTC, performance standards and also operates JUSTNET (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–Northeast
1360 Bedstone Parkway • Rome, NY 13441
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NLECTC–Northwest is located at the Air Force Research Laboratory, Rome Research Site (formerly Rome Laboratory), on the grounds of the Griffiss Business and Technology Park. The center sponsors research and development efforts into technologies that address access control, control, communications, computers, and intelligence. This center draws on the expertise of Air Force scientists and engineers in its development of technologies that can be used to detect concealed weapons on individuals, an effort that is expected to yield stationary equipment for use in buildings and handheld devices for field and patrol officers. Other areas of research and development include through-the-wall sensors, audio processing, image processing, timeline analysis, computer forensics, secure communications, and command/control.

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Two of the focus areas of NLECTC–Southeast are corrections technologies and surplus property acquisition and distribution for law enforcement and corrections. The center facilitates the acquisition and redistribution of Federal surplus/cessp property to State and local law enforcement and corrections agencies. The equipment must be used for law enforcement purposes only. Utilizing the JUSTNET Web site, the center educates law enforcement and corrections professionals about Federal surplus and purchasing programs. The efforts of NLECTC–Southeast have resulted in agencies receiving equipment they would not ordinarily have access to or might not have been able to afford due to budgetary constraints. This facility also studies the needs of corrections facilities. It is working in collaboration with a committee of criminal justice, law enforcement, and corrections practitioners that identifies requirements and sets priorities for research and development. NLECTC–Southeast is allied with the South Carolina Research Authority (SCRA) and the Naval Command, Control and Ocean Surveillance Center In Service Engineering, East Coast Division (NINE East). NLECTC–Southeast’s other areas of focus include information management and technologies, simulation training, and designated special projects.

NLECTC–Rocky Mountain
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Located at the University of Denver, NLECTC–Rocky Mountain focuses on communications interoperability and the difficulties that often occur when different agencies and jurisdictions try to communicate with one another. This facility works with law enforcement agencies, private industry, and national organizations to implement projects that will identify and field test new technologies to help solve the problem of interoperability. NLECTC–Rocky Mountain also houses the newly created Crime Mapping Technology Center, the training and practical application arm of NIJ’s Crime Mapping Research Center, which is staffed by NIJ social scientists and scholars who utilize crime analysis research to improve police operations and develop mapping software for small, medium, and large departments. The Rocky Mountain facility also conducts research into ballistics and weapons technology, as well as information systems. Sandia National Laboratory has been designated as a satellite of NLECTC–Rocky Mountain. The laboratory works in partnership with NLECTC–Rocky Mountain and focuses on technology for detecting and neutralizing explosive devices (Operation Albuquerque).

NLECTC–West
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NLECTC–West is housed on the grounds of 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 a recent effort to identify technologies to stop fleeing vehicles.

Office of Law Enforcement Standards (OLES)
National Institute of Standards and Technology, Building 225, Room A233 • Gaithersburg, MD 20899
Phone: 301–975–2757 • Fax: 301–948–0798 • E-mail: oles@nist.gov

Supported by NIJ, the Office of Law Enforcement Standards applies science and technology to the needs of the criminal justice community. While its major objective is to develop minimum performance standards for equipment and technology, which NIJ promotes 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 and implementation of nearly 200 standards, a number of which have been used by local, State, and Federal agencies.

Office of Law Enforcement Technology Commercialization (OLETC)
Wheeler Jnlt University • 316 Washington Avenue • Wheeling, WV 26003
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Housed at Wheeler Jnlt University, the Office of Law Enforcement Technology Commercialization provides one of the NLECTC system’s most important services, that of bringing research and private industry together to put new technologies into the hands of law enforcement and corrections. OLET actively solicits manufacturers to fabricate the technologies based on requirements identified by law enforcement and corrections practitioners. For example, it is currently seeking companies interested in commercializing technologies already developed by the U.S. Department of Energy’s Los Alamos National Laboratory, such as a device that lets police officers detect crack houses from a distance, microphone and acoustic sensors, and advisory reports. Housed at the National Institute of Standards and Technology, OLET works closely with NLECTC–National to conduct tests and to guarantee the performance and quality of equipment used by police and corrections.

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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 explosion reactions, provide the support for developing 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 education opportunities to practicing professionals and full-time students. This new facility will draw on the expertise and experience 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.
he National Institute of Justice (NIJ) has long believed that one of the most vital aspects of its program is the solicitation of ideas and suggestions of criminal justice practitioners. It is this information that helps form the framework of NIJ’s work. NIJ’s Office of Science and Technology and its National Law Enforcement and Corrections Technology Center (NLECTC) system get this information through conferences, regional workshops, and most especially through a series of advisory groups. These groups are composed of representatives from all areas of law enforcement, corrections, and the forensic sciences, and focus on everything from operational technological needs to liability issues and public acceptance of these new technologies.

One such group, the Law Enforcement and Corrections Technology Advisory Council (LECTAC), is a group of law enforcement, corrections, and forensics practitioners who serve as advisers to the NLECTC system and recommend program priorities. Because LECTAC’s members are also the end users of new technologies, they keep the NLECTC system in touch with the realities of the street by bringing the immediate needs of police and corrections officers to the attention of staff, who then pass them on to researchers, scientists, and engineers.

LECTAC’s current research priorities include the development of technologies in the areas of concealed weapons detection and control, vehicle stopping, enhanced DNA testing, officer protection, less-than-lethal tools, information management, counterterrorism, location and tracking, secure communications, and noninvasive drug detection. Following are updates on several sample projects that fall under these headings, many having both law enforcement and corrections applications.

National Guidelines for Death Investigation. The purpose of this project was to identify, delineate, and assemble a set of investigational tasks that should and could be performed at every death scene. These guidelines are designed to provide those responsible for death investigation with the information and tools to identify, collect, preserve, and present evidence crucial to death scene investigation. In addition, the guidelines are designed to offer the courts a way to assess whether or not evidence in question was collected and preserved in a thorough and systematic fashion to maintain the chain of custody and prevent contamination. The National Guidelines for Death Investigation were developed and approved by the National Medicolegal Review Panel, a multidisciplinary group of nationally recognized experts from the medical, forensic, law enforcement, and legal communities. The 144-member Technical Working Group for Death Investigation also contributed to the project by providing a national perspective in its review of the report. Copies can be obtained through the National Criminal Justice Reference Service’s World Wide Web site at www.ncjrs.org or by calling 800-851-3420.

Rapid DNA Identification Using Microchip-Based Genetic Detectors. This project is expected to result in a field-ready, laptop analysis unit capable of receiving and analyzing biological samples at the crime scene. DNA profiles can be displayed onsite or electronically transferred to a database. The technology comes from the diagnostic field where microchips are used to help identify certain genetic diseases. Modified for forensic use, the chips will contain an array of microelectrodes that are individually electronically controlled to transport, concentrate, and hybridize DNA through manipulation of electric fields. Separation of the DNA molecules to reveal individually discriminating markers is controlled by a programmable power supply. This system is so sensitive that it can identify several genetic markers at once, resolving each of them to their most basic units by fluorescent signal. Present efforts include increasing the number of genetic markers to include all DNA sites identified for inclusion in the Combined DNA Index System (CODIS) and further development of a field-ready portable unit.

Electric Stun Projectile. The electric stun projectile is a wireless less-than-lethal weapon that uses stun gun technology to temporarily incapacitate a person at a standoff range of 30 feet. It is fired from compressed gas or powder launchers. It sticks to the target with a glue-like substance or with short, clothing-attachment barbs. On impact, the device will impart a short burst of high-voltage pulses capable of penetrating several layers of clothing. It will instantly and temporarily disable individuals or cause extreme discomfort. The projectile can be used in any standoff encounter where an individual needs to be temporarily incapacitated without exposing law enforcement or corrections officers to unnecessary risk. A prototype has been developed and demonstrated; the next step is to complete a safety certification and a limited bioefficacy tests.

Pepper Spray Projectile/Disperser. This project will yield an improved, less-than-lethal projectile capable of dispersing oleoresin capiscum (pepper spray) launched from a standoff position. It can be used in hostage, barricade, and tactical assault situations. The projectile specifications include a 100-foot minimum launch range with delivery through a plate glass or household window having a screen or blind in place. It will deliver a fine, atomized spray of OC (oleoresin capiscum) sufficient to fill a room at least 10 feet by 10 feet by 9 feet within 1 second of penetrating the glass targets, or on striking an internal wall or ceiling if entry is achieved through an open door or window. The end product for this project will be a reproducible device, detailed drawings and specifications, and a final report describing the in-house testing results and field evaluation trials. A proof-of-concept device for carrying the pepper spray has been developed.

Weapons Team Engagement Trainer. The Weapons Team Engagement Trainer (WTET) is an interactive team trainer that simulates hostage rescue, assistance of force, and room-clearing scenarios. Scenarios are played on large screens with trainees providing realistic aggressor response, branching, and shootback. The WTET simulation was originally developed by the military for use by special forces teams. The chips will contain four levels of training. The Naval Air Warfare Center Training Systems Division saw that this technology could also apply to law enforcement. NIJ is participating in the commercialization of the WTET by supporting the prototype installation and evaluation at the Naval Training Center in Orlando, Florida. NIJ is also supporting the installation and testing of the first production version of the system at the Los Angeles County Sheriff’s Department Laser Village training site.

General Revision of Ballistic Resistance of Police Body Armor, NIJ Standard–0101.03. NIJ is currently revising its 0101.03 body armor standard. As part of this effort, the agency is undertaking tests to determine if newer combinations of ammunition and weapons present threat levels outside the range of values currently used in its Ballistic Resistance of Police Body Armor, NIJ Standard–0101.03. NIJ will also assess the existing and candidate ammunition for its effect on armor; perform validation and comparison tests; develop a forecasting process, including a performance-assurance program; survey armor manufacturers on the subject of service life; evaluate a modified form of V50 testing as a means of determining the service life of soft body armor; and survey agencies to determine what threat levels are commonly used and how the users would respond to a simplified level designation system. The projected date of completion for this project is late 1998.

Development of a Standard for Stab- and Puncture-Resistant Body Armor. While the most common type of threat faced by a police officer is a ballistic threat, the most common threat faced by correctional officers is from sharp-edged and pointed weapons. In response to the needs of the correction communities, NIJ is working to develop a test standard for stab- and puncture-resistant body armor. NIJ, through the Office of Law Enforcement Standards and Research, has partnered with the U.S. Secret Service and the NIJ’s partnership with the Police Scientific Development Branch (PSDB) in the United Kingdom to conduct research that will ultimately lead to a new stab and puncture-resistant body armor standard. The research being conducted by PSDB is anticipated to be completed in early 1999 and the new NIJ standard completed by the fall of 1999.

Development of a Testing Program for Protective Gloves. In response to a LECTAC request to assist the law enforcement and corrections community in acquiring better, cut- and puncture-resistant protective gloves, NIJ is currently developing a comparative evaluation test protocol and a testing program for protective gloves. After reviewing input from police and correctional officers and consulting with leading companies in the protective garment manufacturing industry, it was determined that pathogenic protection, cut and puncture resistance, tactility, dexterity, and affordability were the primary criteria for evaluation and comparison. Through this new testing program, protective gloves will be evaluated and data will be provided for each of the priority requirements in a comparative report that will enable law enforcement and corrections professionals to make better choices for the best combination of characteristics versus price for all gloves tested. It is currently anticipated that the final report will be available by July 1999.
It’s ironic that a computer search—so simple it can be accomplished by the average second grader—could almost instantly solve some of the Nation’s most heinous crimes. Yet this computer search, which involves the analysis and matching of DNA (deoxyribonucleic acid) samples, is rarely used in those cases having no suspects. Why? Because currently waiting to be tested are an estimated 500,000 blood samples that have been drawn from prisoners, probationers, and parolees, as well as samples taken in cases where there are no suspects. Add to that another 500,000 samples that need to be drawn. Ironically, if all these million samples were analyzed and entered into a database, police could take DNA evidence from a crime in which there is no suspect, run it through the database, and stand a good chance of coming up with a match.

“DNA analysis is the most efficient way to narrow down the list of suspects,” says Chris Asplen, Executive Director of the National Institute of Justice’s (NIJ’s) National Commission on the Future of DNA Evidence. “Imagine—if you get a hit, your investigative search is significantly narrowed.”

But as popular and as widely accepted as the use of DNA analysis is for cases where there is a suspect, Asplen says, it is not typically used in cases in which there is no suspect (nonsuspect cases). One reason is because the Nation’s crime laboratories are already overwhelmed by the task of analyzing evidence in cases having suspects. To engage in the lengthy and expensive process of analyzing samples from felons, convicts, and jail inmates, just to build a database for future reference, is beyond current capabilities of most jurisdictions. And although some States have started sending database samples to outside labs, it becomes an expensive proposition and one whose importance is often eclipsed by current cases, especially those that involve violent crime.

The DNA commission, however, sees it differently, according to Asplen. The commission has made addressing the DNA backlog one of its highest priorities. Created by Attorney General Janet Reno in August 1997 and made up of scientists, policymakers, and representatives of the criminal justice system, the commission looks at ways to maximize the value of DNA evidence. Its five committees focus on postconviction release, laboratory funding, crime scene investigation, and evidence collection, legal issues, and science and technology. To help alleviate the DNA backlog, the committee examining laboratory funding has proposed that the U.S. Department of Justice set up a grant program that would provide funding to help States send DNA database samples to private laboratories. That proposal is now under consideration by the full commission.

“This backlog is a crisis, especially when you consider the fact that we’re drawing blood primarily for sex-related crimes, which are highly recidivistic in nature,” Asplen says. “If we arrest a serial rapist after crime number four, we can probably look back and see we have a sample from a previous attack that was never tested. If that DNA profile had been put in the system, we would have caught him after the earlier offense and prevented the subsequent rapes.”

Police in the United States will certainly look to the British as an example of law enforcement taking an aggressive stance on DNA analysis, Asplen notes. In the United Kingdom, police take samples on arrest and for a wide range of offenses, including nonviolent crimes. The United Kingdom’s database includes almost 200,000 samples; authorities say they expect to add 5 million more in the next few years.

According to Asplen, the British have switched to a fully automated analysis system—short tandem repeats, or STR—which is faster and a more discriminatory identifier. The British also have a different attitude toward DNA analysis, treating it as a primary investigative tool and using it to do mass screening in specific geographic areas or among certain groups of suspects.

In comparison, Asplen says, American police agencies are bound by State laws, many of which limit sampling to those who commit sex-related offenses. Also, American agencies tend to take samples on conviction or release. With the current backlog, it could be 2 to 4 years before the sample is analyzed, which potentially gives an offender 2 years or more of freedom to commit more crimes.

The difference between the two countries is evidenced by the number of “cold hits” for each system. A cold hit is one in which a sample in a case with no suspect is run through the system and produces a match. U.S. authorities have scored a little more than 200 cold hits on the FBI’s CODIS (Combined DNA Index System) database since it came online. In the United Kingdom, cold hits number into the thousands.

Although the numbers for the United States are comparatively low, some individual States fare much better. States having extensive databases average about 1 hit to every 250 to 500 attempts. Virginia, for example, has one of the country’s largest databases. Although it is still behind on its testing—gathering 160,000 samples but having tested only about 10,000—more than half of Virginia’s cold hits on violent crimes have come from its DNA database. Paul Ferrara, of the Virginia Division of Forensic Science, makes the point that those hits frequently identified people previously convicted of nonviolent crimes, such as burglary or breaking and entering.

Asplen estimates that with Federal funding and outsourcing of DNA samples, it will take 2 years to unclog the system, instead of the currently estimated 6 years. “That’s a lot of people who may be victimized unnecessarily. In my mind there is no more important issue in criminal justice right now,” he says.

The DNA commission, he says, is also addressing the legal issues that are integral to DNA database sampling, including questions about privacy, civil liberties, and allegations that taking blood samples from prison inmates, probationers, and parolees is an illegal search and seizure. Most States to date have successfully dealt with such challenges.

“Ironically, not only does DNA testing and analysis have the power to convict, it has the power to exonerate—a very important aspect of the commission’s studies,” Asplen says. More than 50 people have been set free as a result of analyzing old evidence, and he expects that trend to continue. “We have innocent people in jail and we need to get them out,” he says. “The commission is drafting a set of guidelines that will help prosecutors handle these cases.”

For more information about any of the NLECTC’s areas of study, contact Chris Asplen, 202–616–8123; Dr. Richard Rau, 202–307–0648; Dr. Lisa Forman, 202–307–6608; or access the DNA commission’s Web site at www.ojp.usdoj.gov/nij/dna/welcome.html to obtain the minutes of the commission’s meetings.
top-down methods of analysis. It takes a more hori-
zontal view of the system and involves personnel at
every level. Process mapping visually depicts how
information and materials flow in an organization and
how work is handed off from one unit to another.
In addition, it identifies breakdowns and barriers in the
process. The end product is a series of flowcharts, or
maps. The first map is an “as is” map that shows the
current process. The second map is a “should be”
map that shows the process if interim changes were
made to reduce waste and error. The third map is the
“could be” map that depicts the process if it were
permanently and significantly altered.

Interestingly, process mapping can be used with
almost any police investigation function, from bur-
glary to homicide. The Lakewood department decided
to employ process mapping in its domestic violence
cases to better understand them and to streamline their handling, from the initial call to final
disposition. According to Lakewood Police Depart-
cent, Al Youngs, it was the perfect way to separate fact from fiction.

“It examines what is really happening,” Youngs says, “not what everyone thinks is happening. We
mapped the process from the time the 911 call came in,
all the way to the end, which is at the municipal or county court level. From the detective to the D.A.,
we found out how we respond to domestic violence calls.”

Lakewood looked at the 12 components of a typi-
cal domestic violence case—suspect, victim, citizen,
communication, patrol, victim advocates, investiga-
tions, criminalistics, records, property, prosecution,
and courts—and then mapped the route of each
through the criminal justice system. The mapping
project involved everyone who had any connection with handling a domestic violence call.

“It forced all of the components of the system to
sit down together and examine, criticize, critique,
and hypothesize how the system could be made bet-
et,” Youngs says. “We were then asked to go beyond
that, with the idea that if we had all kinds of technol-
gy, money, and all kinds of people power, what
would we do and how would we do it?”

Although Colorado has some of the toughest
domestic violence laws in the country, it does not
mean there are not weaknesses in the systems of its
police agencies, Youngs says. Lakewood identified
several of its weaknesses and changed the system to
better accommodate the needs of victims and fami-
lies, as well as the department. Youngs adds that as
part of this new system, the department now has a
“fast track” program, which means judicial proceed-
ings occur more swiftly. Unless the incident occurs
on a weekend, when there is no provision for bond,
batterers generally appear before a judge within 24
hours, he says. Such rapid processing often means a
guilty plea the next day.

In addition, more information than ever before
is now fed into the department’s database, which in
turn provides a thorough history via laptop comput-
er to the patrol officer at the scene. Officers now
know the history of the location, how many calls
have been made from there and why, who made the
call, and the disposition of previous cases.

The Lakewood domestic violence program
includes a cadre of victim/witness advocates who
provide support to the officer at the scene. Five full-
time civilian employees and a group of trained volun-
teers respond to each domestic violence call. After the
officer stabilizes the scene, they step in, provid-
ing immediate crisis intervention and freeing the offi-
cer to return to the street. Victim/witness advocates
use a mobile unit that is available for calls around the
clock. It provides a safe place to interview victims
and witnesses, and can be used to transport victims
to safe locations.

The Lakewood Police Department advocates
provide continuing support as the case proceeds
through the judicial system. They follow up with chil-
dren who have witnessed violence to ensure that the
children’s needs are met. They are also the conduit
through which the family can take advantage of the
State’s victim compensation program, which pays for
mental health counseling, medical expenses, and the
repair of property damaged during a violent incident.
If long-term protection for the victim is necessary,
the advocates can arrange for assistance through the
State’s victim protection program.

“Our process mapping program identified areas
where we could improve our delivery of services.
We’ve also hired another victim advocate, which
gets us increased coverage on the street. Also, citi-
en satisfaction is rising, based on the feedback
we’ve received,” Youngs says.

Through the program, the police department has
benefited almost as much as have victims of domes-
tic violence. Handling cases is more efficient and
the process clearly defined. Even better, though, is that
the program has resulted in a cooperative effort
between sworn officers and civilian employees, who
have successfully completed the project through

Lakewood has used the same mapping process
on sex offender registration, burglary, and its county
juvenile assessment center. The department also has
been asked to share its experience with other depart-
ments. It was one of the cities highlighted in a 2-hour
training telecourse on community policing and
domestic violence produced by the California and
Arizona P.O.S.T. (Police Officer Standards and
Training). The film is currently being beamed via
satellite to officers in both States.

For additional information about the
Lakewood Police Department’s program for
domestic violence, contact Capt. Al Youngs,
303-987-7201.

The following publications/ videos are available from the National
Law Enforcement and Corrections Technology Center—National:

TechBeat, Summer 1998. This issue of TechBeat examines commu-
nications interoperability among law enforcement and other public safety
agencies, smart card technology being used in corrections facilities, and
vehicle-stopping technology.

TechBeat, Spring 1998. This issue of TechBeat features the use of
telemedicine in corrections facilities, facial recognition technology, and
thermal-imaging night vision devices.

Selection and Application Guide to Police Body Armor. While body
armor is a household word in the law enforcement community, ques-
tions about its selection and use are frequently asked. This guide
responds to commonly expressed concerns and provides information to
help determine the level of protection required by officers. Excellent com-
nunication publication to Police Body Armor Consumer Product List Update
Fall 1997.

Pursuit Management Task Force Report. In August 1996, the National
Institute of Justice’s Office of Science and Technology created the
Pursuit Management Task Force (PMTF) to conduct a multidisciplinary
effort to define police practices and the role of technology in pursuit
situations. Federal agencies and law enforcement national associations were
involved. The report presents the current technologies and techniques
related to pursuits and provides recommendations on technology develop-
ment and commercialization, an overview of legal issues related to pur-
suits and related technologies, and information obtained from surveys
completed by agencies, line officers, and the public related to pursuits
and technology.

Michigan State Police Tests 1995 Patrol Vehicles. Every year, the
Michigan State Police tests new patrol vehicles as part of their procure-
ment policy. This bulletin summarizes test results of the 1995 patrol
vehicles.

Why Can’t We Talk? When Lives Are at Stake. This videotape
examines the issues and problems surrounding interoperability and
public safety radio communications. Learn why planning, designing,
and funding public safety wireless communications systems are critical
activities for ensuring the public welfare.

The following publications/ videos will be
available soon:

Survey of Commercially Available Explosives Detection Technol-
gegies and Equipment. This document provides a comprehensive
overview of currently available explosives detection methods and
technologies. It is intended to inform law enforcement agencies about
relevant aspects of explosives detection and provide them with a basis
for making procurement decisions.

Federal Property and Equipment Manual. In a time of tight budgets,
State and local law enforcement agencies are sometimes hard pressed to
outfit their personnel with the equipment they need to do their jobs
safely and effectively. This manual describes Federal sources of per-
sonal property for law enforcement. Through these programs, agencies
can obtain high-quality, high-value, excess property at little or no cost.

Positional Asphyxia Videotape. This informational videotape, target-
ed to the many smaller county and municipal jail facilities throughout
the United States, details actions to prevent in-custody deaths related to
positional asphyxia. The video highlights the correct procedures to
use when restraining a violent prisoner and safety precautions to fol-
low to help jail personnel prevent medical problems.

To obtain any of the above publications or videotapes or to
receive additional copies of the TechBeat newsletter, write NLECTC,
P.O. Box 1160, Rockville, MD 20849-1160; telephone 800-248-2742.
Publications can also be downloaded from J USTNET at
Try our Web site, JUSTNET, for:

- **Information** on new technologies, equipment, and other products and services available to law enforcement, corrections, and the criminal justice communities, including access to a database of over 4,000 available products and technologies.
- **Breaking News** from printed media, the Internet, individual facilities of the NLECTC system, and the Nation’s Capital.
- **Publications** from NIJ and NLECTC that you can view or download to your system.
- **Interactive Topic Boards** that allow you to post questions and exchange information with hundreds of professionals in their specialty areas.
- **Frequently Asked Questions** that offer detailed information based on thousands of calls to our information specialists.
- **Calendar of Events** that lists the latest upcoming meetings, seminars, and training.
- **Links** to other important law enforcement and corrections Web sites.

For help in establishing an Internet connection, linking to JUSTNET, or finding needed technology and product information, call the NLECTC Information Hotline at 800–248–2742.

To receive future issues of the TechBeat newsletter at no charge, call 800–248–2742 or e-mail asknlectc@nlectc.org.

In addition to funding the National Law Enforcement and Corrections Technology Center, NIJ also 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 over 45,000 registered users. 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, 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.

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