Counting on Biometrics

In November 1987, 1,400 exiled Cubans burned building after building at the Atlanta Federal Penitentiary. The riot was not the spontaneous combustion of tensions among rivals, but a simmering anger sparked by a Federal Government plan to return those who had arrived from Cuba 7 years earlier in the Mariel boatlift. It was the longest prison riot in U.S. history, taking 11 days to resolve through negotiations.

Reporters were frustrated in trying to cover the siege, primarily because they were given only meager information about the more than 100 hostages. "Officials wouldn't tell us anything," one opined in a later story. But there was a reason for this lack of information. Nobody knew who the hostages were.

“We were trying to identify the people who were in the facility at the time, but it was based on a chit system where you turned in your chit and got your keys when you came to work and returned the keys when you left," says Al Turner, a former warden with the U.S. Bureau of Prisons who was sent to Atlanta to work alongside the facility’s warden during the riot. “Like every other similar system, it was subject to human error and people forgetting to turn in their keys. So we had no accurate way of knowing who was inside the penitentiary when the hostages were taken. It became a difficult and time-consuming process of elimination. We called families to locate staff, put pictures on boards to try to identify potential hostages, and identified some through our negotiations with the Cubans.”

Fifteen years later, a project underway at the Prince George’s County Department of Corrections (DOC) in Maryland may help solve the problem of tracking staff in correctional facilities. It uses facial recognition technology for employee verification and access control.

The system employs a camera and computer to create a mathematical algorithm, or formula, of an employee’s face. When each employee is enrolled in the system, this unique formula is transferred to a chip that is embedded in a proximity card the employee must carry. On arriving at or leaving work, the employee places the card in a card reader and stands in front of a camera. In seconds, the employee’s picture pops up on a computer screen. Although the employee’s identity can be confirmed by an attending officer, the computer scans the employee’s face and compares the resulting mathematical formula to the original. It takes only a few seconds, says DOC Deputy Director Milton Crump.

The project is the result of a coalition among the National Institute of Justice (NIJ), the Defense Advanced Research Projects Agency, and the U.S. Department of Defense (DoD) Counterdrug Terminals.

Making TraCS With Traffic Safety

Time has become a precious resource. Everyone is looking for ways to save it, and law enforcement is no exception.

The State of Iowa has come up with a way to save time—not just minutes, but hours, even days and weeks.

It’s an electronic reporting program known as TraCS (Traffic and Criminal Software) that is available at no cost to law enforcement across the country.

In 1994, in an effort to cut down on paperwork, the Iowa Department of Transportation (DOT) took the lead in developing TraCS. At that time it took up to 24 months for data collected in paper reports to be received, manually entered into a database, validated, and made available. By using TraCS, agencies can now create their own local databases in addition to transmitting reports electronically to the Iowa DOT, making the information available the next day. Use of electronic reporting eliminates duplicate data entry, cuts down on keying errors and problems caused by poor handwriting, and reduces time spent on the scene.

“When I first came in contact with the project in its infancy, I was able to bring the time it took to make an accident report on the scene down from 2 hours to 10 minutes,” says Rich Conner, Iowa DOT’s agency training specialist for TraCS. (From 1994 to 1997, Conner helped field test the software as a member of the West Des Moines Police Department.) “It is customized to be user friendly. In 25 years in law enforcement, I’ve never seen anything else like it for ease of use.”

Conner explains that before TraCS, if a jurisdiction wanted a new traffic safety device, such as a traffic light, staff could take months to compile the data needed to justify it. Now, the Iowa DOT can quickly analyze the electronic accident reports and the safety modifications can be put into effect much sooner. “There is potential to prevent accidents and even save lives,” he says.

In addition to saving time and increasing safety, TraCS has the potential to generate enormous savings for other departments. The State owns the source code for the software, which eliminates vendor licensing fees.
and enables Iowa to provide TraCS to other States and agencies within those States at no charge.

“If they developed electronic reporting systems on their own, it would be very expensive,” says Mary Jensen, TraCS program manager. “This is literally saving millions of dollars.”

Although the software is free, agencies still must purchase the hardware needed to run the program, which Jensen acknowledges is a struggle for many departments. But, she adds, TraCS will run on laptops that agencies may already be using for other purposes.

More than 15 additional States are in the process of implementing TraCS for some or all of their law enforcement agencies. TraCS’ design allows it to generate electronic forms identical to the paper forms an agency now uses, so no department needs to change its forms or procedures. The only change for officers is learning to input data electronically. Jensen says that New York has progressed the farthest of any participating state. Although Iowa developed the software for free, it was licensed to the National Model, visit www.dot.state.ia.us/natmodel. According to the website, the National Model project seeks to “bridge the gap between state-of-practice (paper forms) and state-of-the-art.”

At approximately the same time the National Model effort began, Conner retired from his law enforcement job and joined the TraCS team. As part of the Iowa DOT, this four-person team provides training and support to States throughout Iowa. Conner adds that users from other States have signed up for the discussion forum on the team’s website (www.iowatracs.org), and he has provided them technical assistance. The website also contains extensive support documentation and software upgrades that registered users can download.

“This is our best means of support. We try to get an agency to become pretty self-sufficient,” Conner says. He also provides technical assistance over the phone and via e-mail and gives both system administrator and user training throughout the State. He adds, however, that the software is so user friendly that a computer-literate person could figure it out without training. Conner also points Iowa agencies toward potential resources for grants, reduced-price hardware, or other forms of assistance.

“It’s kind of interesting to see the e-mails we get from hardware vendors that refer to ‘this TraCS that’s sweeping across the country,’” Conner says. Sharing the software with other States has been Iowa’s goal from the beginning, Jensen adds.

“IT just makes sense and it’s a good way to do business. We’ve come to earn our dollars if everybody acted independently,” Jensen says. “Certainly the opportunity is out there for every State to use it that wants it. Although some States have already developed similar programs on their own, if at some point it is in all 50, that would be great.”

TraCS’ combination of current technology and ease of use has earned it several awards. These include the Federal Highway Safety Administrator’s Award in 1996, Vice President Al Gore’s National Partnership for Reinventing Government Hammer Award in 1999, and first place in the Best Practices Competition sponsored by the National Safety Council in 2000.

For more information about TraCS, log on to www.dot.state.ia.us/natmodel; contact Program Manager Mary Jensen at 515-257-3235, e-mail Mary.Jensen@dot.state.ia.us; contact Rich Conner at 515-237-3051, e-mail Rich.Conner@dot.state.ia.us.

Technology Development Program. It has been in place for a little more than a year. Those months have been spent adapting to the new system and learning the capabilities and limitations of facial recognition technology, Turner says. For example, lighting is important. The Prince George’s facility set up the system in an area where natural light that shone in through side windows created shadows on the subject’s face. To remedy this problem, the windows were covered with adjustable shades and track lighting was installed to put light directly on the subject.

Periodic steering committee meetings, in which representatives of all participating States gather to discuss modifications, bring this cooperation to the national level. According to Jensen, although Iowa developed the software and owns it, future development priorities are decided by consensus. At the four steering committee meetings held thus far, States’ needs have proven remarkably similar. A combination of funding from various States (including Iowa) and Federal dollars pays for the enhancements. For more information on this cooperative project, known as the National Model, visit www.dot.state.ia.us/natmodel.
Columbine has become synonymous with the Nation’s most infamous school shooting. But school resource officers (SROs) and other law enforcement professionals know that in spite of the notoriety received by the shootings at Columbine and other schools, they must deal daily with such “lesser” crimes as knifings, beatings, fistfights, and bullying.

Eight school shootings in 1998—a year before Columbine—prompted Congress to create the Safe Schools Initiative. This initiative directs the National Institute of Justice (NIJ) to “develop new, more effective safety technologies such as less obtrusive weapons detection and surveillance equipment and information systems that provide communities with quick access to information they need to identify potentially violent youth.”

NIJ responded to this mandate by searching for ways that existing or emerging technologies could make the Nation’s schools safer and by creating new applications for those technologies that target school safety. Four years later, NIJ’s School Safety Program continues to work with other government agencies, oversees research and development projects, and offers technology assistance as part of an effort to provide SROs and others in the field with tools to help them deal with criminal activity.

Ray Downs, past manager of NIJ’s School Safety Program, says a more peaceful school environment should reduce the probability of violent crime. “You reduce motivation for weapons to get in. You shouldn’t just be looking at homicides alone, but at what can be done to make students safer overall. You need to prevent students from being intimidated, bullied, and insulted.”

NIJ is helping schools create more peaceful environments by developing, testing, and evaluating technologies to ensure that they are safe, effective, appropriate, and affordable. Downs notes, however, that schools and SROs need to keep in mind that technology only complements the non-technical components of a comprehensive school safety program: planning, policy, and procedures; committed and trained SROs and other school security staff; information sharing; and crisis management planning and training. The NIJ School Safety Program applies a three-pronged approach to school safety, using needs assessment and partnership development; technology research, development, and evaluation; and technology assistance.

When Congress called on NIJ in 1998, it also called on other government departments and agencies, primarily the U.S. Department of Education, to participate in the Safe Schools Initiative. Staff from the Department of Education’s Safe and Drug-Free Schools Program and NIJ’s School Safety Program routinely exchange information and jointly participate in safe school meetings and conferences.

In addition, NIJ formed a relationship with the U.S. Secret Service early in the development of the safe schools program. Following Columbine and other school shootings, the Secret Service and the Federal Bureau of Investigation received many calls from schools looking for advice and technical assistance. NIJ provided funding for a report by the U.S. Secret Service National Threat Assessment Center in collaboration with the Department of Education. That report, An Interim Report on Prevention of Targeted Violence in Schools, was published in October 2000. The Final Report and Findings of the Safe School Initiative: Implications for Prevention of School Attacks in the United States came out in 2002. This work led to another joint publication of the Secret Service and the Department of Education, Threat Assessment in Schools: A Guide to Managing Threatening Situations and to Creating Safe School Climates.

NIJ’s School Safety Program also seeks input from the more than 100 local, State, Federal, and international criminal justice professionals who make up the National Law Enforcement and Corrections Technology Centers’ (NLECTC’s) Law Enforcement and Corrections Technology Advisory Council (LECTAC). NIJ staff periodically brief LECTAC members on school safety initiatives and ask for their ideas on technology use, research needs, and school safety issues. NIJ then uses these ideas to help identify and assess problems faced by SROs and others in the field.

The technology research, development, and evaluation component of the NIJ School Safety Program also has three components: crime prevention, information and communication, and incident management. Many of these projects build on NIJ’s established technology-related initiatives for law enforcement, corrections, and the forensic sciences.
NIJ is exploring and evaluating crime prevention technologies that include concealed weapons detection, drug detection, and surveillance cameras. Information and communication technologies include "swipe" and other identification cards; language translation devices; school/police information sharing networks; and software for incident reporting, mapping and analysis, critical incident planning, and self-paced, computer-based training. In the area of incident management, NIJ awards have given private companies the chance to develop or enhance interactive learning tools that simulate real-life events and train SROs and other school safety personnel on how to handle them.

NIJ is now in the early stages of feasibility testing for two new technology applications that involve biometrics for access control. One uses iris scan technology; the other, facial recognition technology. Biometrics may have advantages over card systems. There is no chance of forgetting to bring cards and staff monitoring requirements may be reduced. The technologies being tested are non-invasive and present no health risks.

New incident management tools in development include templates for vulnerability assessments and incident planning that any school can use. "This will give schools tools, put together by experts, that they can use to customize a plan that will best fit their individual needs," Downs says. "If they already have a plan, they can use this to evaluate or improve it."

Sandia National Laboratories in Albuquerque, New Mexico, is updating the NIJ publication, The Appropriate and Effective Use of Security Technologies in U.S. Schools. A planned second volume will cover drug and alcohol detection, sensors and alarms, bomb threat awareness, deterring false fire alarms, communications for crisis response, and deterring crime.

School bus security is an area of increasing public and parental concern. Technology can now produce checklists of students who have boarded buses and instantly transmit those checklists back to school offices. Technologies that track the locations of buses and trains for public transit systems also can be applied to school buses.

NIJ recommends that school systems begin their efforts to improve school safety by assessing the level of risk and deciding whether a small, focused effort might be enough to make the schools safer. "If your patient isn’t bleeding to death, you don’t need a tourniquet; that is, if your school situation isn’t that bad, you don’t need x-ray machines and metal detectors," Downs says. "Maybe you should consider an ID card system. Some ID systems could also make it easier to take attendance and keep truancy records. If the kids are bringing guns and knives and razors to school, you need more."

According to Downs, most schools already have conducted safety assessments as part of crisis management planning for fires or natural disasters. Also, the "No Child Left Behind" legislation requires that school safety plans include a crisis management section. Because most school districts have limited resources, they need guidelines on how to build the most effective school safety and security plan. NIJ’s School Safety Program includes the following components that can provide detailed technology assistance:

• The School Security Technologies and Resource Center (SSTAR) at Sandia National Laboratories serves as a national school security and safety technology resource for schools and police agencies. SSTAR tests and evaluates technology and provides technology assistance.

• All NLECTC system facilities have a staff member designated as a school safety resource. NLECTC–Southeast is the lead center for school safety, but all centers provide technology assistance on school safety and several have participated in specific efforts.

• The NIJ School Safety Program cosponsored a School Safety Conference in January 2002. Conference topics included current research, existing commercial technologies, and case studies of successful approaches used by schools.

For more information about NIJ’s School Safety Program initiatives, log on to www.ojp.usdoj.gov/nijscience-tech/sst.htm. Or, contact Steve Schuetz, NIJ program manager, 202-335-6857; e-mail schuetzso@jgs.usdoj.gov.

CAUSE FOR ALARM

At Washington Irving High School in New York City, a weapons detection system detects a razor blade hidden inside a student’s mouth. Had the blade gone undetected, it might have been used in another student slashing. To prevent more slashings, the New York City Police Department (NYPD) and the city’s school district teamed up with the National Institute of Justice (NIJ) and its National Law Enforcement and Corrections Technology Center (NLECTC–Northeast) in Rome, New York, to identify equipment to detect razor blades and other small cutting instruments and keep them out of schools.

In 2000, NYPD began receiving weekly calls that reported slashing incidents with possible connections to gang activities, says Osborne Frazier, administrative manager of NYPD’s School Safety Division. "My team and I started to investigate the reported incidents."

Twenty to 30 student slashings a month were occurring in schools citywide. Razor blades, knives, and other weapons were sneaked into schools, threatening safety.

Early detection of these weapons was of primary importance. The School Safety Division evaluated current technologies that could detect weapons at a safe distance. Standard metal detectors used in high schools had high sensory levels that led to false detection, requiring more hand searches. Belt buckles, watches and other jewelry, and coins were being detected instead of razor blades and other weapons. Because razor blades have a small quantity of ferrous metal (metal that is attracted to a magnet), students with razor blades often bypassed the metal detector.

To help combat the rise in student slashings, NYPD asked NIJ if any of its research and development projects would detect those weapons from a safe distance, Frazier says. (NLECTC–Northeast has a Memorandum of Understanding with the NYPD School Safety Division to facilitate transfer of technologies to detect concealed weapons.)

"NLECTC came to our aid in more ways than one: They served as our consultants, helped with our concepts, and obtained what we needed—The SecureScan 2000," Frazier says. "The SecureScan 2000 looks only for ferrous metals. Its computer interface shows the exact location of the metal weapon, and it can be operated remotely."

"After the first month of use, it already proved extremely beneficial," Frazier says. "The device does not react to jewelry, has an increased effectiveness, and does not give false alarms. Deployment of the SecureScan 2000 helped to cut slashings in half. "The possibilities are endless. NLECTC truly came through for us by pushing the device to its full capabilities."

"On one occasion, we were sending students through the SecureScan 2000 and suddenly the alarm sounded and the computer screen indicated that there was something in a student’s mouth," Frazier says. "We conducted a thorough check and found that he had hidden a 4-inch razor blade in the upper palate area of his jaw. This incident showed us what this sophisticated device could really do.”

The technology behind SecureScan 2000 was developed by the U.S. Department of Energy’s Idaho National Engineering and Environmental Laboratory, with funding provided by NIJ. It also has been evaluated in other law enforcement settings.

For more information about the SecureScan 2000 evaluation project, contact Chris McAleavey, National Law Enforcement and Corrections Technology Center–Northeast, at 888-338-0584 or chris.mcaleavey@lj.com.
**A “NORMAL” SCHOOL DAY**

Responses to past criminal acts committed by elementary, middle, and high school students against classmates, faculty, and staff have taught law enforcement that communication and early detection and intervention are key in heading off future school shootings and other violent incidents.

“The National Law Enforcement and Corrections Technology Center (NLECTC)—Southeast and the National Institute of Justice approached the issue with their sleeves rolled up,” says Gary Speers, assistant chief of police in Normal, Illinois. “They funded the School-Based Virtual Private Network (VPN) and chose our department here as a test site.” The network is a secure, limited-access e-mail network that allows authorized users, such as local schools, law enforcement, and other agencies that serve young people, to share information.

“NLECTC designed and engineered the software and provided advanced technology to help support the system,” Speers says. “Working alongside NLECTC with the VPN has been a tremendous success. The network links school to school and agency to agency, ensuring timely and secure sharing of school safety information among designated school and agency staff.”

This system’s effectiveness was shown in September 2000, when a Normal student with access to weapons threatened other students, according to Speers. The threats became known to a VPN participant and were disseminated on the network to the pertinent agencies, which took appropriate action.

“The School-Based Virtual Private Network enables us to bring all players to the table and do proper intervention.” Speers says. “With the help of technical experts, we have been able to link numerous pieces of existing equipment (hardware and software systems), which has allowed for its success. I believe that this type of [secure] e-mail system can be used to decrease the escalating amount of school violence because it can be used for early intervention and prevention of incidents.”

**MAKING AN SRO**

School-based policing is one of the fastest growing areas of law enforcement. The key figure is the school resource officer (SRO), a police officer assigned full-time to a school. SROs play three roles. They are policemen whose beat is the school. They visit classrooms and make presentations on school safety, traffic laws, general law, and crime prevention. They confer with students, parents, and family members on legal problems and crime prevention. They confer with students, parents, and family members on legal problems and crime prevention. According to NASRO’s Executive Director, Curtis Lavarello, a former SRO with 20 years’ experience, school-based policing is “the best example of community policing that exists today.”

With more than 9,000 national and international members, the National Association of School Resource Officers (NASRO) is the Nation’s first, largest, and most recognized organization of school-based law enforcement officers. Since its founding in 1989, NASRO has trained SROs to do their jobs better. The organization offers basic and advanced training for SROs and managers and specialized training in legal issues affecting school safety. “We’ve trained over 15,000 officers from every 1 of the 50 States and from Canada,” says Lavarello. “We assist officers in making the transition from street police officer to school-based officer. We teach them what school-based law is about, help them understand what it’s like to be in an educational setting, and provide them with resources, including sample lesson plans that can be downloaded from our website.”

**IN THE CAMERA’S EYE**

When Patrick Fiel was hired as executive director of school security for the Washington, D.C. public school system 5 years ago, he became responsible for the safety of approximately 70,000 students and 11,000 teachers and administrators at 163 facilities. Almost all the school buildings are old (the average building age is 80 years). In 2001, D.C. built its first new school since the early 1970s. Add to this the district’s demographics—many inner city schools, residential neighborhoods and businesses adjoin to school properties, heavy traffic, and a majority of students who walk to school—and providing safety and security on school grounds becomes a challenge.

Over the past several years, Fiel and his staff have introduced new procedures and technologies in the D.C. public schools to meet this challenge. Fiel’s first task was a needs assessment. He studied incidents in and around schools to understand what was really happening in the schools and their surrounding communities. He then used that information to design a security program intended to provide every student with a safe environment.

“When manpower and resources are limited, you have to use other measures—such as technology—to secure an area,” Fiel says, and technological innovations are precisely what he turned to. Budget constraints meant that new technologies were installed in only a handful of schools to start, but positive results have led to more schools receiving those new technologies each year. “Wherever we’ve applied the technologies, we have reduced incidents by almost 90 percent,” Fiel says.

One innovative security program has been a closed-circuit video surveillance system started during the 1998–99 school year in eight high schools. The system has been expanded every year since and is now used in 85 schools.

Digital video cameras placed in public places, such as school exteriors, hallways, and stairways (never in classrooms or restrooms), provide real-time, 24-hour surveillance. Security personnel and school administrators monitor the video feed (onsite or offsite). They can respond immediately to brevitying incidents or forward the video instantly to police or other law enforcement agencies that might need to see it. (Access to the secure system is by key code; approved users can view the video feed on their computer via a secure Internet link.)

Video archives go back 14 days, so Fiel and his staff can backtrack as needed to trace the origins of a disruption or event at a monitored school.

Support from the community and the students has been key to the success of these new technologies. Fiel says. “We are forming a partnership, not a dictatorship. When you start putting in cameras, you have to have buy-in [from the people who are affected: administrators, students, community members]. We also have good rapport with the metropolitan police and our city emergency management agency.”

*For more information on how to join NASRO or register for the National SRO Conference, visit the NASRO website at www.nasro.org or call 888-316-2776.*
SCHOOLS AND THE FOURTH

The Fourth Amendment of the United States Constitution protects “the right of the people to be secure in their persons, houses, papers, and effects against unreasonable searches and seizures.” In United States v. Jones, 565 U.S. 492 (2012), the Supreme Court, in a 5-4 decision, upheld the Tecumseh, Oklahoma, school district’s policy subjecting middle and high school students who take part in extracurricular activities to random urine drug testing. The policy has since been applied only to high school students in competitive extracurricular activities at 250 schools.

Justice Thomas, joined by Chief Justice Rehnquist and Justices Kennedy, Breyer, and Scalia, held that such random drug testing does not violate the students’ Fourth Amendment rights to be protected against unreasonable search and seizure. The Court concluded that the drug-testing policy is a reasonable means of addressing the school district’s interest in preventing, detecting, and deterring drug use to protect student health and safety. At 250 schools.

The decision relies heavily on Vernonia School District 47J v. Acton, 515 U.S. 646 (1995), in which the Court’s specific fact-based balancing test is still relevant.

The Court noted that students identified as drug users during testing may be subject to random urine drug testing to detect illegal substances. Near, the Court has expanded to Vernonia to include all high school students who take part in extracurricular activities.

The Court emphasized that the drug tests were conducted not to punish students, but to deter drug use, promote intervention, and protect students’ safety and health. The only consequence of a positive test is restriction of students’ participation in extracurricular activities. The court also emphasized the minimal invasion of privacy required for urine tests. At 250 schools.

RESOURCES

Because the content and organization of websites change often, the addresses, or URLs, listed usually will not take you to the top-level (home page) of the site. In general, to find more specific information, users have three options: explore the site using the navigation buttons available; search using the search engine (usually located on the home page), or look through the site map (a page that lists all pages on the site).

The majority of the listings are available on the Internet at the sites addressed, or URLs, listed. You will need assistance in finding information from the URL to a website. In order to get the best result from a search engine, you should develop a strategy to help you find the information you need.

In addition to the following resource list, which should not be considered all inclusive, numerous for-profit organizations offer consulting services, security assessments, and school security preparedness training for law enforcement professionals, school resource officers, public schools, and educators, and are listed.

Many of these organizations have websites and can be located by using a search engine.

If you need additional assistance in finding any of these resources, contact the National Law Enforcement and Corrections Technology Center in Baltimore, Maryland, at 888-248-2742, or email asknlec@hec.org.

PROFESSIONAL ASSOCIATIONS

International Association of Campus Law Enforcement Directors (IACLEA) houses college, university, campus law enforcement professionals and municipal law enforcement professionals. IACLEA advances public safety through educational, research, and professional development. www.iaclea.org

National Association of School Safety and Law Enforcement Officers (NASSELO) promotes appropriate legislation on school violence and the safe learning environment. www.nassleo.org

National School Safety Center (NASSC) provides school safety and security training, and research information, including materials on school safety and other issues relevant to the criminal justice community. www.nssc1.org

National Crime Prevention Council (NCPC) is a source of information on crime prevention. www.ncpc.org

U.S. Department of Justice, Office of Science and Technology, School Safety Program grants to states to improve school safety, law enforcement, and community awareness. www.ojp.usdoj.gov/ssl/safety

Federal interagency effort to include all high school students who take part in extracurricular activities.

The Court also emphasized the minimal invasion of privacy required for urine tests. At 250 schools.

To find more on the Prevention of School Violence (PSV) has a section to inform and assist school resource officers. www.ncsu.edu/cpsv

For more information on the Site of the National Center for School Safety, Orth and educators. www.ncpc.org

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Federal interagency effort to include all high school students who take part in extracurricular activities.

The Court also emphasized the minimal invasion of privacy required for urine tests. At 250 schools.
The National Law Enforcement and Corrections Technology Center (NLECTC) system, a program of the National Institute of Justice (NIJ), offers no-cost assistance in helping agencies large and small implement current and emerging technologies.

The NLECTC system was established in 1994 by NIJ’s Office of Science and Technology to deliver information and technology assistance to the more than 18,000 police departments; 50 State correctional systems; thousands of prisons, jails, and parole and probation departments; and other public safety organizations.

Contact NLECTC for:

- Technology Identification
  - The NLECTC system provides information and assistance to help agencies determine the most appropriate and cost-effective technology to solve an administrative or operational problem. We deliver information relating to technology availability, performance, durability, reliability, safety, ease of use, customization capabilities, and interoperability.

- Technology Assistance
  - Our staff serve as proxy scientists and engineers. Areas of assistance include unique evidence analysis (e.g., audio, video, computer, trace, and explosives), systems engineering, and communications and information systems support (e.g., interoperability, propagation studies, and vulnerability assessments).

- Technology Implementation
  - We develop technology guides, best practices, and other information resources that are frequently leveraged from hands-on assistance projects and made available to other agencies.

- Property Acquisition
  - We help departments take advantage of surplus property programs that make Federal excess and surplus property available to law enforcement and corrections personnel at little or no cost.

- Equipment Testing
  - In cooperation with the Office of Law Enforcement Standards (OLES), we oversee the development of standards and a standards-based testing program in which equipment such as ballistic- and stab-resistant body armor, double-locking metallic handcuffs, and semiautomatic pistols is tested on a pass/fail basis. NLECTC also conducts comparative evaluations—testing equipment under field conditions on patrol vehicles, patrol vehicle tires and replacement brake pads, and cut-, puncture-, and pathogen-resistant gloves. NLECTC also has evaluated emerging products to verify manufacturers’ claims. The primary focus of OLES is the development of performance standards and testing methods to ensure that public safety equipment is safe, dependable, and effective.

- Technology Demonstration
  - We introduce and demonstrate new and emerging technologies through such special events, conferences, and practical demonstrations as the Mock Prison Riot (technologies for corrections), Operation America (bomb detection technologies), and an annual public safety technology conference. On a limited basis, NLECTC facilitates deployment of new technologies to agencies for operational testing and evaluation.

- Capacity Building
  - We provide hands-on demonstrations of the latest technology to address such operational issues as crime and intelligence analysis, geographic information systems, explosives detection and disablement, inmate disturbances and riots, and computer crime investigation.

- Technology Information
  - NLECTC disseminates information to the criminal justice community at no cost through educational bulletins, equipment performance reports, guides, consumer product lists, news summaries, meeting and conference reports, videotapes, and CD-ROMs. NLECTC also publishes TechBeat, an award-winning quarterly newsmagazine. Most publications are available in electronic form through the Justice Technology Information Network (JUSTNET) at www.justnet.org. Hard copies of all publications can be ordered through NLECTC’s toll-free number, 800–248–2742, or via e-mail at asknlectc@nlectc.org.

- Technology Commercialization
  - Our law enforcement and corrections professionals, product and commercialization managers, engineers, and technical and market research specialists work together to identify new technologies and product concepts. They then work with innovators and industry to develop, manufacture, and distribute these new, innovative products and technologies.

- Technology Needs Assessment
  - Our national body of criminal justice professionals—the Law Enforcement and Corrections Technology Advisory Council (LECTAC)—ensures that we are focusing on the real-world needs of public safety agencies.

Because most of the country’s law enforcement and corrections services are provided at the local level, the NLECTC system is composed of five regional centers and is complemented by several specialty offices and a national center. Most centers and offices are co-located with or supported by federally funded technology partners so they can leverage unique science and engineering expertise.
TechShorts is a sampling of article abstracts published weekly as part of the National Law Enforcement and Corrections Technology Center's (NLECTC's) online information service: the Law Enforcement and Corrections Technology News Summary.

Offered through JUSTNET, the website of NLECTC, this weekly news summary provides synopses of recent articles relating to technology developments and initiatives in law enforcement, corrections, and the forensic sciences that have appeared in newspapers, newsmagazines, and trade and professional journals. The summaries also are available through an electronic e-mail list, JUSTNETNews. Each week, subscribers to JUSTNETNews receive the summary directly via e-mail.

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Sounding the Alarm
Sheriff

Mike Milstead, the sheriff of Minnehaha County, South Dakota, came up with a new task for the National Weather Service to warn cities and counties of severe weather. Post September 11, 2001, Milstead decided it was a good idea to use the radio system for any type of threats to public safety, including terrorist attacks and accidents. The idea caught on and South Dakota Gov. Bill Janklow, the National Weather Service, other sheriff's departments, and the media jumped on the bandwagon in what has now become a statewide campaign. They mean to see that every home has a weather radio. To implement the plan, the Governor negotiated a deal for the purchase of 10,000 weather radios at half price. Five thousand or more radios will be donated to schools, hospitals, nursing homes, day-care centers, and other organizations and institutions, and the balance will be sold to private citizens for a discounted price. The National Weather Service initiated the infrastructure needed to operate this warning system throughout the State in 1998, after a tornado nearly obliterated the town of Spencer. Prior to that, only five transmitters existed in the State. Milstead's idea has sparked considerable interest among law enforcement officials and the public.

Civil libertarians are worried about the ability of law enforcement to easily track people through the Internet without the public knowing how simple the process is. Officers are mandated by the Electronic Communications Privacy Act of 1986 to present a subpoena or a court order for a search warrant before being given information from Internet companies. WorldCom's Sondie Nolan asserts that her company follows the proper legal channels when it helps law enforcement agencies. Few court cases have tested the applications of the Electronic Communications Privacy Act.

Teaching Machines To Hear Your Prose and Your Pain

New York Times

Speech recognition software's ability to detect prosody in human speech is severely limited, and researchers around the world are working to make programs more capable of interpreting pauses, timing, pitch, volume, and other cues that can be translated into punctuation, jokes, and questions. Some speech synthesis programs incorporate prosody to evoke a feeling of friendliness to people who listen to electronic messages, but recognizing prosody is a far more complicated matter, notes Mari Ostendorf of the University of Washington. Psycholinguist Elizabeth Shibe is leading prosody discovery initiatives, including one involving how changes in pitch indicate sentence boundaries. Another project involves studying false starts and disfluencies—"ums," "and," and "ops"—that are common in natural speech but may confuse speech recognition programs. The applications for software that can identify prosody include intelligence gathering, such as analysis and transcription of monitored broadcasts and conversations, which could prove critical in espionage and security initiatives. A more prosaic use for such technology is being looked into at the University of Erlangen-Nurnberg in Germany, where a team is developing programs that can detect cues that indicate frustration, or even inebriation. Automated customer service and call centers could benefit from such software.

Will Thugs Be Scarred Straight?

San Diego Union-Tribune

Ocean Beach, California, grandmother Pat Robertson has invented a personal safety device that will enable victims to collect their attacker's DNA. The 911Jack, a handheld brush with metal bristles, could be used to scratch an attacker and retain DNA for his identification and as evidence. Robertson has spent $60,000 over 4 years to develop the 911Jack. She began selling the personal safety device for $6 at the Ocean Beach and Pacific Beach coffee kiosks she owns and at trade shows. Robertson says she consulted forensic and liability experts while developing the 911Jack, which she believes will be more effective during an attack than pepper spray or alarm whistles.

Putting Vision Systems Into Perspective

CNNet

A California startup company is working to enable computers to see in 3D by using stereo vision video cameras, which would merge two views to gain depth perception, just as humans do. The company says its products could be used by vehicles and robots to better navigate and perform tasks that depend on visual sensory. Currently, computers equipped with visual sensors have a difficult time separating important objects out from the background, but stereo vision could help them focus.

Stop That Cart

CIO

Shopping cart theft costs supermarkets in the United States more than $800 million a year, not just in replacement costs, but in abandoned cart liability; fines for nuisance complaints, and investments in carriage retrieval services. Some retailers have taken matters into their own hands with the acquisition of high-tech gadgets designed to prevent cart theft. One San Diego-based company has developed a system that incorporates a digital receiver, braking device, frequency transmitter, and antenna to automatically cause a brake to be released when a cart nears a predetermined perimeter.

Small Fry Robots Becoming Big

Law Enforcement Deal

Law Enforcement Technology

Rescue teams at both the Pentagon and the World Trade Center used remote control robots to search for victims immediately following the September 11, 2001 attacks. Robots roughly the size of a shoebox searched areas in the rubble where dogs or humans could not reach. Larger robots were used later to investigate the structural status of walls damaged during the attacks. Robin Murphy, a professor at the University of South Florida, provided the smaller, tethered robots, while larger robots used a wireless transmission system and an onboard computing system. The law enforcement applications of robots, including vision-guided remote helicopters, are enormous. Robots are unaffected by some of the difficulties experienced by rescue teams, such as stress and the dangers of inhaling smoke or toxic fumes. Robots can also greatly reduce the danger experienced by bomb technicians who are attempting to disarm or handle an explosive package or device. Robots could eventually be used to help officers detect the presence of illegal drugs.

Virtual Mobs, Terrorists for Troop, Police Training

UniSci

Computer scientists at the University of Pennsylvania have created a training system with computer-generated figures that copy behavior of real-life enemies. Lead researcher Gary C. Silverman unveiled the project at the annual Computer-Generated Forces and Behavioral Representation Conference in Orlando, Florida. The goal of the system, he says, is to build emotional and cultural factors into the computer-generated figures and to make simulated training more realistic and more successful for troops being sent overseas or police charged with maintaining order in the United States. Silverman hopes the realistic simulations will teach trainees not to make decisions that provoke crowd aggression. The project took 3 years and a $1.4 million grant from the Pentagon's Defense Modeling and Simulation Office to complete.

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St. Louis Post-Dispatch

Alleged serial killer Maury Troy was apprehended after law enforcement was able to track him through his computer. Troy had sent an Internet message to a reporter indicating where the body of a slain prostitute could be located. Microsoft told the FBI the Internet protocol address of the only person who had mapped the area, while WorldCom was able to pinpoint the physical location of the address.


School-Based Policing and SROs, National Resource Center for Safe Schools, Fall 2000, looks at the role that school resource officers play in maintaining safe schools. www.safetyzone.org/pdf/fact8.pdf

School Critical Incident Planning: An Internet Resource Directory, U.S. Department of Justice, Office of Justice Programs, National Institute of Justice, is an online resource directory under a grant by Eastern Kentucky University, Justice and Safety Center. It collects resources to help with preparation, resolution, and response related to school critical incident planning. www.justnet.org/assistance/schoolsafety.html

School Resource Officer Training Program, U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention Fact Sheet, March 2001, provides information on the Comprehensive School Safety Leadership Initiative to provide training and technical assistance to SROs. www.ncjrs.org/pdffiles1/odpj/bsc00105.pdf


School Safety Emergency Procedures Guide, Delaware Management Education Agency, outlines procedures for responding to school emergencies, including situations that involve school violence.


Surveillance Tools for Safer Schools—Final Report, Institute for Forensic Imaging, January 2002, offers the findings of a study of surveillance technology use in schools. The study, funded by the National Institute of Justice, was conducted by the Institute for Forensic Imaging, Naval Surface Warfare Center, and Indiana University Purdue University of Indianapolis (IUPUI), Schools of Informatics, Law, and Public and Environmental Affairs. www.fbi-indy.org/security.htm


What You Need to Know About Drug Testing in Schools, Office of National Drug Control Policy, August 2002, is designed to assist educators, parents, and community leaders in determining whether student drug testing is appropriate for their schools. http://www.whitehousedrugpolicy.gov/news/press02/082902.htm

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.
National Criminal Justice Reference Service

In addition to funding the National Law Enforcement and Corrections Technology Center, the National Institute of Justice (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, NCJRS sponsors a calendar of events at www.eventcalendar.ncjrs.org, 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:

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Fax. Fax your request for a registration form to 410–792–4358. You will receive a form promptly in the mail.

Online. Go to www.ncjrs.org/puborder and request registration form BC840. It will be sent to you in the mail. Or register online at www.ncjrs.org/register.

Write. Send a written request to NCJRS, P.O. Box 6000, Rockville, MD 20849–6000.

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For more information about NIJ and NCJRS, visit their websites: www.ojp.usdoj.gov/nij and www.ncjrs.org.

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New Publications

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

Michigan State Police Tests 2003 Patrol Vehicles. This bulletin summarizes the test results from the Michigan State Police 2003 model year patrol vehicle evaluations.

2003 Model Year Patrol Vehicle Testing. This report contains the complete results of comprehensive tests conducted by the Michigan State Police of 2003 model year police patrol vehicles. Vehicles were subjected to major tests and evaluations, including vehicle dynamics testing, acceleration and top-speed testing, brake testing, ergonomics and communications evaluations, and fuel economy evaluations.

To obtain any of the above publications, write NLECTC, 2277 Research Boulevard, Mail Stop 8J, Rockville, MD 20850; telephone 800–248–2742; or e-mail asknclectc@nclectc.org.

Publications also can be downloaded from JUSTNET at www.justnet.org.
School security personnel are always looking for a way to detect drugs unobtrusively without the commotion and advance planning required to bring drug-sniffing dogs into a facility. With funding help from the National Institute of Justice, one company has formulated a series of sprays that can detect trace amounts of marijuana, methamphetamine, heroin, and cocaine. These sprays are being tested in one New Jersey school district.

According to Jon Gaspich, one of six substance awareness coordinators for the school district, testing with these sprays is simple. “We take a piece of paper about an inch and a half by 3 inches, and we swipe an area. Then we spray the paper with a can that’s coordinated for what we’re looking to detect. If the paper turns the color of the letter on the can—for example, the can for cocaine has a big cobalt-blue C on it—you know you have traces of cocaine on the paper.”

Administering these tests requires no special training: “It’s very easy. If you can read, if you can count to 10, if you can breathe, if you have a pulse, you can do this.”

Virtually any flat surface can be tested. “We test lockers, we test books, we test desk surfaces, we’ve even tested computer mice and come up with positive hits,” says Gaspich.

The pilot program, which involves three high schools and two intermediate schools, is still in the research stage. Results are sent to the manufacturer’s laboratory for verification. “We can’t use the tests for disciplinary reasons at this point,” he says, “but we can use them for information gathering, to give us an idea of where people who use drugs may congregate.”

The sprays, Gaspich says, “are definitely more accurate, quieter, more readily available, and more easily used” than drug-sniffing dogs. “You don’t have to do a big preparation to bring dogs in, and you don’t have to worry about pulling people out of classes and having them stand away from the dogs when they come through.”

But, Gaspich says, dogs still have their place.

“The dogs are a great show, don’t get me wrong,” says Gaspich. “The dogs are great for the kids to see, because they know that we’re doing something, so it keeps the drugs out of the school. But this [a detection spray] can be used in between. It’s not a great commotion, and it can be done covertly and quietly.”

Moreover, the tests are relatively inexpensive. The kits cost a few hundred dollars.

Perhaps the biggest benefit of these sprays, according to Gaspich, is that they can offer help to families who suspect that their children may be using drugs. Because of the accuracy, ease of use, and relatively low cost of these sprays, parents can use them at home.

For more information about this drug detection spray study, contact Jon Gaspich by e-mail at jgaspich@cs.com.

Editor’s note: Prior to enacting any drug detection/testing program, seek appropriate counsel.