In October 1999, 48-year-old Susan Fassett of Poughkeepsie, New York, left choir practice at the Pleasant Valley Methodist Church. Fassett never returned home. She was shot to death as she got into her car. It would take months to unravel the facts surrounding her murder.

First, it was a case of murder for hire, which meant the mastermind was not immediately evident. Second, almost all of the hard evidence was electronic, buried in thousands of cell phone calls, pager communications, and e-mail correspondence.

But with the assistance of the National Law Enforcement and Corrections Technology Center (NLECTC) – Northeast and its Law Enforcement Analysis Facility (LEAF), Fred Andros went to prison. He was convicted of second-degree murder and sentenced to 25 years to life.

This complicated story paints a portrait of Andros as a small-town Lothario to 25 years to life.

Instead, Andros turned the spotlight and ultimately arrested and charged his complicity in the crime. Andros feared that Fassett, also a city employee, had information that could ruin him. Andros was undoubtedly the most likely suspect. He was questioned by police, but investigators could not find evidence to indicate his complicity in the crime. Instead, Andros turned the spotlight on Silvernail. Authorities investigated and ultimately arrested and charged Silvernail, who then confessed. In return for leniency, Silvernail promised to testify against Andros.

But even with Silvernail’s offer of testimony, there was not enough evidence to mount a compelling case against him. The problem lay in a New York State law that forbids a conviction based solely on a co-conspirator’s testimony and in the fact that Andros claimed the murder resulted from a rocky relationship between the two women.

New York State Police Senior Investigator Tom Martin turned to help to NLECTC – Northeast’s LEAF, which has expertise in analyzing audio, video, and electronic evidence. According to Martin, the murder investigation had revealed thousands of communications—telephone, pager, and cell phone calls as well as e-mail correspondence—among Andros, Fassett, and Silvernail that could connect the three and establish Andros’ involvement. The problem was sorting through the information to find the connections.

“Our job was to input all those communications into a computer and analyze it,” says James J. Hepler, a law enforcement analyst for LEAF.

Time Proves the Crime

Proposition for Drug Testing

When California voters approved Proposition 36, it was with the intention of providing a rehabilitative alternative to the incarceration of those convicted of nonviolent drug offenses. Although the jury is still out on whether the law and its attendant programs are working, it is clear that the existing probation structure has been overwhelmed by the number of court referrals.

Enacted in July 2001, Proposition 36 offers those convicted of a nonviolent drug offense an alternative: supervised probation and drug treatment. Initial predictions, at least by the initiative’s proponents, were that the workload for probation officers would be significantly decreased because monitoring duties would be shared by probation departments and local treatment providers. To date, however, the reverse has been true.

“We anticipated an influx of 4,200 the first year,” says Connie Havens, division director of the Orange County Probation Department. “But the reality will be about 28 percent above that. We’re getting an average of 90 to 100 new cases per week, and expect about 5,000 new cases by this July. We were funded for an additional supervising probation officer and eight new officers. We have already exceeded their capacity.”

“We’ve captured a population that wasn’t prison bound,” says Vicki Markey, deputy chief of the San Diego County Probation Department. “These are people who would have been referred to summary probation, which is court supervision, or to a few days in jail, but who would not have been introduced to the formal probation system. The good thing is that these are desperate people who have been plagued with drug use and abuse for many years. Proposition 36 opens the door to treatment. The bad thing is that we’ve opened that door through the criminal justice system, and I don’t know that we’re prepared for that.”
One of the most daunting and expensive tasks facing the two probation departments is drug testing, usually done through urinalysis. Demand for drug screening has increased, yet funding for drug testing or increased monitoring was not included in the original bill. Although funding provisions have since been added, the additional funding may not be enough to address each county’s needs adequately.

At the request of criminal justice officials from San Diego and Orange Counties, the Border Research and Technology Center (BRTC), part of the National Institute of Justice’s National Law Enforcement and Corrections Technology Center system, initiated a workshop on current noninvasive drug-screening technologies. Those who attended, which included members of the State’s judiciary, probation, and treatment communities, said they required a technology that would reduce the number of urine samples taken and handled and reduce testing costs. In addition, the technology would have to be affordable, reliable, durable, portable, easy to use, relatively maintenance free, and user friendly. It would have to be able to identify a range of drugs. It would need to be gender neutral, usable by adults and juveniles, and safe for the staff. And it would need to provide immediate results admissible in court at a later time.

Although no technology commercially available today meets all of these requirements, BRTC was able to present drug screening technologies that incorporate many of them and informed the participants as to market readiness. These technologies included:

- **Skin patches and sweat tests.** These products detect several classes of drugs by analyzing sweat. One product is a test device that is put under the client’s arm; a positive result shows up as a specific color inside the window of the device. This product can also be used to test surfaces or liquids for such drugs as opiates, marijuana, cocaine, and methamphetamine. Another product is a skin patch that a client wears for up to 7 days. The patch is then removed and analyzed for the presence of excreted drugs. It works by allowing oxygen, carbon dioxide, and water to evaporate while trapping illicit drugs and their metabolites, which have a larger molecular weight. The patch will detect substances used while it is worn, as well as any used 24 to 48 hours before it is applied.

- **Saliva testing.** Probation officers use a test swab for saliva collection, which is put into a disposable cartridge. The cartridge is then inserted into an instrument that analyzes the sample, giving results similar to those of a blood test. In 5 minutes or less, such a system can test individually or simultaneously for alcohol, marijuana, cocaine, PCP, opiates, and methamphetamine.

- **Trace and portable detection scans.** These devices detect drugs and explosives by analyzing vapors and particles on people, their possessions, or the air around them. Already in use in some correctional facilities and airports, this technology either uses a walk-through portal that blows puffs of air at a person to dislodge particles in clothing or has an operator who swabs purses, computers, briefcases, or any other items the person may have touched. Ion scanners can detect microscopic traces of cocaine, heroin, marijuana, PCP, LSD, and MDMA and such explosives as TNT, C4, RDX, PETN, Semtex, HMX, and ammonium nitrate.

- **Pupil scans.** This technology, initially used to test for fatigue among commercial truck drivers, has since been adapted to measure impairment caused by current or previous alcohol and drug use. Pupil scanners quickly flash light at the eye, then measure the pupil’s involuntary reaction. One system is a handheld device that fits over the eyes and gives a 100-millisecond flash of light and measures the pupil’s response for the following 6 seconds, repeating the procedure four times. The test takes about 2 to 3 minutes per person. A second type of eye screen, in which probationers look into a desktop machine for a 30-second scan, requires a drug-free baseline measurement and then compares subsequent tests to the baseline. If the system identifies impairment, it recommends a confirmatory test and suggests specific drugs for which to test.

Such technologies could eliminate several problems inherent in urinalysis, which is cumbersome and expensive, yet is the only type of drug test evidence currently admissible in court. However, a major problem with urinalysis lies in gender—in the disproportionate number of male clients to female probation officers, Havens says. “Approximately 80 percent of the probationers are male and about 70 percent of the field probation officers are female. This leaves the male staff spending a larger amount of their time witnessing urine samples.”

“Urinalysis is invasive for the client and for the officer who has to observe,” says Peg Ritchie, deputy director for BRTC and a veteran corrections official. “You find that the officers start avoiding them, or they get sloppy and don’t do them effectively. Although that is a management issue, you can eliminate some of those problems by adopting new, noninvasive technologies.”

The technologies shown at the BRTC workshop were not touted as definitive drug screening tools, but as cost-saving, probable-cause measures. Typically, 80 percent of clients who require testing test negative. “If we had a way to screen out that 80 percent, we could save a great deal of money and time,” Markay says. “We would only have to do a drug screen on the remaining 20 percent.”

As a result of the workshop, Ritchie says, San Diego County field tested an eye scan device and found it to be 98-percent accurate against blind urine analysis tests. It is estimated the technology will save the county $5,000 within 6 weeks, with complete cost recovery within 2 months. Orange County also is field testing the same device. Susan Bower, criminal justice coordinator for San Diego County’s Alcohol and Drug Services and supervisor of Proposition 36 Quality Assurance Specialists, says of the workshop, “BRTC encouraged us to get beyond the usual lament of, ‘We’re the county; we have no money,’ and develop a broader perspective to include several stakeholders, funding resources, et cetera, in order to creatively expand our array of detection services.”

For more information regarding the workshop on drug screening technologies sponsored by the Border Research and Technology Center, contact Peg Ritchie, 888-456-3752, or e-mail pritchi@brtc.nlectc.org.
There were 4,000 [records], all in paper form and on different types of paper. We had to enter them all by hand. It took us 6 weeks.

But the result of LEAF’s work was an easily understandable picture of the thousands of communications among Andros, Fassett, and Silvernail. It showed that Silvernail and Fassett had no independent communication and therefore no relationship, and it corroborated Silvernail’s testimony regarding times, dates, and locations of her contacts with Andros.

The Web Enabled Timeline Analysis System, or WebTAS, a computerized program developed by the Air Force Research Laboratory/Information Directorate in Rome, New York, made the analysis possible. After the information was entered, Hepler says, it was sorted and analyzed to show connections and relationships. “You can query on specific types of relationships. You can tell the computer to show you all the calls from Fassett to Andros on a certain date that lasted a specific duration of time and were made from her place of work. Andros admitted to having a sexual relationship with Fassett in the past, but he claimed he did not know her well. The number of calls we found showed that wasn’t true.”

“WebTAS graphically plots criminal events and presents visual and statistical data on timelines, graphs, tables, and maps,” Helper says. “The timeline developed for this case showed links among those involved. Maps were created with data from Andros’ electronic toll road access card that showed where he was when he made certain calls.”

LEAF provided Investigator Martin and Dutchess County Assistant District Attorney Ned McLoughlin with 16 timeline slides. “It enabled the investigators to better understand the links, instead of having to sift through all that paper. This kind of tool also helped the jury visualize the relationships between the people involved,” Hepler says.

Martin adds, “I think it was the crux of the whole prosecution. My experience is that today’s science is so advanced. It’s one step of the process to produce evidence; it’s another step to get someone to understand it. The work LEAF did allowed us to present something that helped people understand. It was a huge part of the case.”

According to Hepler, WebTAS also can be used as a predictor of behavior or events. By using an algorithm called the Temporal Transition Model, analysts take information about a suspect’s behavior and use it to predict what the suspect might do next. This technique can be used to show commonalities across data in cases of organized or financial crime or with drug offenders or serial killers. The LEAF team currently is testing the program’s capabilities in a pilot project at the Syracuse (New York) Police Department and the Connecticut State Forensic Science Laboratory. Investigators will use the software to analyze cold cases and to help set up surveillance.

For more information about WebTAS, contact James J. Hepler, National Law Enforcement and Corrections Technology Center–Northeast’s Law Enforcement Analysis Facility, 315–330–2253, or e-mail jhepler@acsdefense.com.

(continued from page 1)
Professors and administrators want their institutions’ courses to stand out from similar ones at other colleges or universities. Dr. Robert Scott, director of the Justice Studies program at Fort Hays State University (FHSU) in Kansas, has done just that. He has used his knowledge of the Internet to create a one-of-a-kind course that helps students take their degrees into the 21st century.

Six years ago, Scott came to FHSU to start a criminal justice program. University provost Larry Gould, then dean of the College of Arts and Sciences, suggested that Scott find a way to show that criminal justice “is not just a gun and a stick and a badge anymore.”

“Our goal was not to be just another garden-variety criminal justice program, not to be ‘Cop Shop 101,’” says Scott. “We hoped that by putting this course in our core curriculum, it would distinguish our program.”

Scott spent a year researching and developing the course that eventually became Information Age Technologies and the Justice System, a graduation requirement for students majoring in criminal justice. The class requires students to spend a large amount of time doing research on the Internet; much of the research is conducted through JUSTNET, the website of the National Law Enforcement and Corrections Technology Center (NLECTC) system. The first of the course’s 13 sessions focuses on the relationship between the U.S. Department of Justice, the National Institute of Justice, and NLECTC. Subsequent sessions concentrate on various NLECTC categories of technology, including communications, forensics and criminalistics, less-than-lethal force, and protective equipment. Each session requires Internet research on the assigned topic and a writing assignment based on related books.

Scott says the JUSTNET website plays such a prominent role in the course because of its usefulness. “During the initial research I spent a lot of time just poking around, seeing what was out there that I could use. I thought the JUSTNET site had a lot of information that would interest the students, and it is so easy to navigate. A lot of other sites are very frustrating, so I tell my classes to go to this website, poke around, and you’ll get a lot of information that will help you. I like it; it’s one that I go to time and time again.”

Students not only spend a lot of time doing web-based research, they also have the option of taking the course through the Internet. Scott says that the course is actually two separate classes: a conventional classroom section and a web-based section that targets nontraditional students, part-time students, and those who live out of the immediate area. Classroom students, who are mainly following a traditional plan of undergraduate study, meet for discussion and follow a strict schedule of assignments. Internet students “discuss” topics on a bulletin board, e-mail or call the instructor with questions, complete assignments on the web, and receive feedback via e-mail. The university allows all Internet-based courses to have flexible schedules. Only the dates for final exams are fixed. Some Internet students complete their assignments in a few weeks, Scott says. Others wait until close to final exam time to do the work. Some students enjoy the flexibility, but others find that they cannot deal with setting their own pace, he says.

At present, FHSU offers one classroom section of Information Age Technologies and the Justice System, which is limited to 42 students, and one Internet section, which has a 25-student limit. Since its initial offering in 1998, the classroom section has been filled to capacity. Some of the overflow goes to the Internet-based class, and Scott admits they have stretched past its 25-student limit to try to accommodate everyone who is interested.

“I make them do a lot of work in my class, probably twice as much as they do in other classes, but surprisingly enough, it always fills up,” Scott says. After the first offering of the course, he expected to “get fried” by end-of-semester student evaluations regarding workload. Instead, students praised his course. High marks by students have continued with each subsequent semester. “The feedback says that when it’s subject matter that they’re interested in, they don’t mind working hard.”

In addition to using the wealth of information found on the JUSTNET website and researching other Internet sites, students are required to subscribe to Government Technology or read it online, watch the movie “Pirates of Silicon Valley,” and read Invasion of Privacy by Louis Mizell and Business @ the Speed of Thought by Bill Gates.

“I wanted to do something original,” Scott says. “Computers will continue to revolutionize all types of businesses in the 21st century. Criminal justice has lagged behind the curve for quite a while and is just getting up to speed.”

Although criminal justice departments at many colleges and universities have contacted Scott to learn more about the course, as far as he knows, no other school has started a similar course. “Many criminal justice instructors are generalists, or they specialize in law enforcement, corrections, or the courts,” he says. “Not many know a lot about information technology; so other schools feel they have no one to teach a similar course.”

During the year Scott spent doing development research, he looked for an appropriate textbook but found that none existed. Instead, because FHSU gave him wide latitude in creating the course, he pulled together hits and pieces from various print and Internet sources. Once the course was established, Scott tried to make it easier for other schools to start a program by writing the textbook he could not find when he started out. “What I heard from publishers, over and over, was that it sounded interesting, but there is no market for it,” he says. “I still would like to write the text one day if the market is ever there.”

Anyone interested in finding out more about Information Age Technologies and the Justice System and its use of the JUSTNET website can view the syllabus online at www.fhsu.edu/policisci/faculty/scott/jus322.html or contact Dr. Robert Scott at rfscott@fhsu.edu.
The JUSTNET website plays a prominent role in the Information Age Technologies and the Justice System course because during his original research, Dr. Robert Scott found it easy to navigate and filled with important information. A recently completed redesign of JUSTNET provides even easier access to its material.

Bringing the new site live culminated a lengthy process of designing, analyzing, planning, and implementing the migration of data. While JUSTNET retains its familiar colors and logo, the site as a whole is more user friendly. In addition to working with webpage designers and programmers, JUSTNET coordinator Donna Engler also relied on feedback from National Institute of Justice and National Law Enforcement and Corrections Technology Center (NLECTC) system staff. The site also was brought into compliance with Americans with Disabilities Act regulations.

“The biggest change is we’ve reorganized the site so it’s even easier for people to find information,” Engler says. “A lot of the information took several mouse clicks to access. We decided we wanted to bring the meat of NLECTC up to the top.”

The previous version of the site, designed in 1998, used frames and had subpages that could be reached only from the main pages of particular areas. In the revised version, popup menus on the homepage carry through on every subpage. For example, a user who wants to find information on the Mock Prison Riot can reach it from any page on the site.

Knowledgeable users will find that most of the information is still online, including What’s New, About NLECTC, and the Law Enforcement and Corrections Technology News Summary. Some features, such as publications and technology projects, have been incorporated into the new NLECTC Virtual Library. “Of course, we still have lots of links,” Engler says. “The site even includes instructions for importing the links into your own browser.”

The biggest change remains the addition of the NLECTC Virtual Library. This newly programmed database is divided into six information categories: funding sources, NLECTC services, publications, Tec/Net Beat articles, technology projects, and websites. Information in the database can be accessed in three different ways:

- The user can click on any information category. For example, clicking on the publications category results in a list of all publications in the database regardless of subject matter.
- The user can access information through any of the 27 topic areas that range from biological and chemical defense to crime mapping to school safety. This option provides the user with appropriate records from each category. Thus, with one search, a user might find publications, services, and potential sources of funding relating to electronic crime.
- The user can type in a keyword. Again, this option provides the user with appropriate records from each of the information categories.

To access JUSTNET, the redesigned National Law Enforcement and Corrections Technology Center system’s website, log on to www.justnet.org.

Students taking the course Information Age Technologies and the Justice System at Fort Hays State University learn to find information on the Internet and navigate the JUSTNET website. However, many law enforcement and corrections professionals, particularly those who entered the field before the advent of the Internet, may have difficulty locating information online. That’s where Jack Harne and Michael DeChene, information specialists with the National Law Enforcement and Corrections Technology Center (NLECTC) in Rockville, Maryland, come in.

“Almost every day our center takes a multitude of questions through phone calls and e-mail requests,” Harne says. “These folks could probably answer most of their questions themselves if they knew more about our website and the Internet. I love talking to people, but basically I just walk many of them through JUSTNET. I find that once I get them oriented, they’re on it all the time.”

“I was a correctional practitioner before we had the Internet,” Harne says. “If I needed to check on a product, I had to call manufacturers and vendors and ask them to come and give presentations. The Internet makes this process so much more cost effective and time saving. The Internet really can make things simpler if you know how to use it.”

Harne and DeChene realized, however, that walking people individually through the site was helping only one person at a time. They needed to orient a number of law enforcement and corrections officers and administrators to the website who in turn could train others in their departments and agencies.

Harne and DeChene have put together a train-the-trainer class, in which they can teach up to 15 individuals how to navigate the Internet and use JUSTNET. These individuals then can pass on the information they learn to their coworkers.

The 8-hour class is conducted in a computer lab. Harne and DeChene use a software program to present information; they also give their students hands-on exercises and individual attention. They start with an overview of the Internet and its history, then discuss its different capabilities and how to use them efficiently. They also cover the use of search engines and provide suggested terms and phrases for conducting information searches. The training concludes with information on the NLECTC system and its JUSTNET website. Participants receive an outline, a disk of “bookmarks” of more than 600 criminal justice-related websites, and some sample publications to use in their own training sessions.

Course content is based on frequently asked questions, as well as on research and Harne’s and DeChene’s own use of the site. Links on the bookmarks diskette include information on such subjects as grant funding, forensic sciences, manufacturers and products, security threat groups and gangs, and colleges and universities that promote continuing education. Harne and DeChene will make changes to the curriculum as needed based on participant feedback. They hope to receive accreditation for the course, which can be presented as either a half-day or full-day session, so that it qualifies for continuing education credits.

Several jurisdictions in metropolitan Washington, D.C., already have participated in the class, and Harne has visited others to promote it. The class can be offered onsite if the department has access to a computer lab, or students can be sent to NLECTC for instruction. Plans call to expand the train-the-trainer program so it will be available at other NLECTC system facilities and to add a self-training module on the website.

Anyone interested in setting up a train-the-trainer session should contact Jack Harne at NLECTC–National, 800–248–2742, or e-mail asknlectc@nlectc.org.

NLECTC–Rocky Mountain in Denver also offers a class for criminal justice practitioners called Internet Resources for Criminal Justice. The class teaches law enforcement and corrections personnel (not trainers) how to use the Internet. The class includes a brief history of the Internet, an introduction to searching, hands-on exercises, and extensive exploration of several criminal justice websites. For those who cannot travel to Denver to attend a class, a diskette with its website bookmarks is available at no charge.

For more information, contact Joe Russo, corrections specialist, at 800–416–8086, or e-mail jrusso@da.edu. (An indepth article on this class, “Where Users Aren’t Losers,” appeared in the Summer 1999 issue of TechBeat. Call 800–248–2742 to receive a copy. Or, access the article online through the JUSTNET website at www.justnet.org.)
Discretionary Grants are awarded as a competitive basis to public and private organizations and provide funding to States, organizations, and individuals from the private sector. The Office of Community Oriented Policing Services (COPS) administers this program.

- **Bulletproof Vest Partnership Grant Program.** Established in 1998 and administered by BJS, this program provides funding to assist States and local governments in purchasing body armor. Applications are solicited through the NIJ, and COPS administers the funding. Grant awards are made on a competitive basis.

- **Discretionary Grants.** These grants are awarded to States and local governments for the purchase of body armor. Applications are solicited through the NIJ, and COPS administers the funding. Grant awards are made on a competitive basis.

- **Drug Court Discretionary Grant Program.** Administered by the Department of Justice, this program provides funding to States and local governments for the development and implementation of drug courts. Applications are solicited through the NIJ, and COPS administers the funding. Grant awards are made on a competitive basis.

- **Forensic DNA Research and Development Program.** Administered by the National Institute of Justice (NIJ), this program provides funding to agencies and organizations to develop and improve forensic DNA testing techniques. Applications are solicited through the NIJ, and COPS administers the funding. Grant awards are made on a competitive basis.

- **Innovative Community Policing Grants.** Administered by the COPS Office, this program provides funding to States and local governments to implement innovative community policing initiatives. Applications are solicited through the NIJ, and COPS administers the funding. Grant awards are made on a competitive basis.

- **Making Officer Redeployment Effective (MORE) Grants.** These grants, provided through BJA, are awarded to States and local governments to increase the deployment of law enforcement officers. Applications are solicited through the NIJ, and COPS administers the funding. Grant awards are made on a competitive basis.

- **Violence Against Women Discretionary Grants.** These grants, provided through BJS, are awarded to States and local governments to develop or expand programs to prevent and respond to violence against women. Applications are solicited through the NIJ, and COPS administers the funding. Grant awards are made on a competitive basis.

- **Violent Offender Incarceration/Truth-in-Sentencing (VOI/TIS) Incentive Grants Program.** This program provides funding to States and local governments to increase the deployment of law enforcement officers. Applications are solicited through the NIJ, and COPS administers the funding. Grant awards are made on a competitive basis.

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Other grants are awarded through a competitive process in response to general and targeted solicitations. COPS solicitations call for research proposals ranging from advancing the use of forensic DNA to spatial data analysis to preventing the abduction and sexual exploitation of children. To view the current open solicitations, see Funding Opportunities at OJP at www.ojp.usdoj.gov/fo.

COPS includes the National Institute of Justice (NIJ), the Bureau of Justice Assistance (BJA), the Bureau of Justice Statistics (BJS), the Office of Juvenile Justice and Delinquency Prevention (OJJDP), and the Office for Victims of Crime (OVC). In addition, its Special Program Offices include the Office for Domestic Preparedness (ODP), the American Indian and Alaska Native (AI/AN) Affairs Division, the Violence Against Women Office (VAW), the Corrective Programs Office (CPO), the Drug Court Programs Office (DCPO), the Executive Office for Wood and Seed, and the Office of the Police Corps & Law Enforcement Education.

**Office of Justice Programs and the Office of Community Oriented Policing Services**

Since 1994, the Office of Justice Programs (OJP) has provided Federal leadership in developing the Nation’s capacity to control crime and the criminal justice system. Along with that leadership, OJP supplies funding to States and localities.

Most OJP formula grant programs provide funding to State agencies, which, in turn, subgrant funds to support relevant projects of local governments and private agencies. OJP has created an online resource that lists contacts for every State. To find your contact, go to the State Administering Agency page (www.ojp.usdoj.gov/state.htm) on the OJP website and click your State on the map. Your browser will jump to a list of people you can contact in order to learn more about the grants.

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- **Innovative Community Policing Grants.** Administered by the COPS Office, this program provides funding to States and local governments to implement innovative community policing initiatives. The funds can be used for equipment, software, and training. Grants can be used to help law enforcement agencies overcome organizational obstacles and to establish demonstrable centers that model current community policing methods. For more information, contact the COPS Office at 202–307–4082 or visit the COPS website at www.ojp.usdoj.gov/cops.

- **Making Officer Redeployment Effective (MORE) Grants.** These grants, provided through BJA, are awarded to States and local governments to increase the deployment of law enforcement officers. The grants help local law enforcement agencies buy equipment and technology that will expand available officer time and police resources without bringing new officers. The grants cover 75 percent of the cost of equipment and training, with a 25 percent match. For more information, contact the COPS Office at 202–307–4082 or visit the COPS website at www.ojp.usdoj.gov/cops.

**Formula Grants**

- **Juvieve Justice Formula Grants Program.** This program provides grants to States to assist States and local jurisdictions in preventing and deterring crime and improving their juvenile justice systems. Each State and territory must develop and implement a comprehensive juvenile justice plan that sets priorities for the expenditure of GJPF grant funds. For more information, contact the COPS Office at 202–307–4082 or visit the COPS website at www.ojp.usdoj.gov/cops.

- **Local Law Enforcement Block Grants (LEB Program).** This program awards block grants to local governments to support law enforcement activities. Funding is provided to perform rapid DNA testing on unidentified samples so they can be uploaded into the National DNA Index System (DNIS). For more information, contact the COPS Office at 202–307–4129.

- **Violence Against Women Office (VAW) Program.** The Violence Against Women Office (VAW) provides funding to States and local governments to develop or expand programs to prevent and respond to violence against women. Applications are solicited through the NIJ, and COPS administers the funding. Grant awards are made on a competitive basis.

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- **Violence Against Women Office (VAW) Program.** The Violence Against Women Office (VAW) provides funding to States and local governments to develop or expand programs to prevent and respond to violence against women. Applications are solicited through the NIJ, and COPS administers the funding. Grant awards are made on a competitive basis.
Technology can significantly enhance the effectiveness and efficiency of law enforcement, corrections, and forensic sciences. Just as important, it can help ensure public safety. But the incorporation of new technology can be complicated and require significant research, while inappropriate or underutilized technology can be costly—not only in money but also in time and public perception.

The National Law Enforcement and Corrections Technology Center (NLECTC) system, a program of the National Institute of Justice, can help agencies large and small when it comes to implementing current and emerging technologies. NLECTC serves as an "honest broker" resource for technology information and support at no cost.

Because most of this 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. These centers and offices are co-located or supported by federally funded technology partners so they can leverage unique science and engineering expertise.

Contact NLECTC for:

- Technology Identification
  As an agency’s first stop in its search for new and developing technologies, NLECTC provides information relating to availability, performance, durability, reliability, safety, ease of use, customization capabilities, and interoperability. This information helps an agency determine the most appropriate and cost-effective technology to solve an operational problem.

- Technology Assistance
  Because most law enforcement and corrections agencies do not have access to technical experts and sophisticated equipment, NLECTC staff serve as proxy scientists and engineers. Areas of assistance include 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
  The implementation of technology can bring on a new set of concerns, from hardware/software compatibility to operational procedures and training. NLECTC helps develop procedures, protocols, and training materials. Generic guides, best practices, and information manuals often are leveraged from these hands-on assistance projects and made available to other agencies.

- Technology/Property Acquisition
  For most small departments, the acquisition of equipment to run day-to-day operations or outfit officers is a constant concern. NLECTC helps departments small and large 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.

- Standards and Testing/Technology Evaluation
  NLECTC oversees a standards-based testing program in which equipment such as ballistic- and stab-resistant body armor, double-locking metallic handcuffs, and semiconductor pistols is tested on a pass/fail basis. NLECTC also conducts comparative evaluations—testing equipment under field conditions—on patrol vehicles; patrolled vehicle tires and replacement brake pads; and cut-, puncture-, and pathogen-resistant gloves. These evaluations allow agencies to select equipment that best suits their needs. On request, NLECTC evaluates new products to verify manufacturers’ claims.

- Technology Dissemination
  NLECTC disseminates information to the criminal justice community at no cost through educational bulletins, equipment performance reports, guides, consumer product lists, news summaries, meetings/conference reports, videotapes, and CD-ROMs. NLECTC also publishes TechBeat, an award-winning quarterly newsletter. Most publications are available in electronic form through the Justice Technology Information Network (JUSTINET) at www.justinet.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.

NLECTC system by identifying research and development priorities. In addition, each regional facility has an advisory council of law enforcement, corrections, and forensics professionals. Together, LECTAC and the regional advisory councils help keep the NLECTC system attentive to real-world technological priorities and the needs of law enforcement and corrections. Created in 1994 as a program of the National Institute of Justice’s (NIJ’s) Office of Science and Technology, the NLECTC system’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 do their jobs more safely and efficiently.

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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:

- **Fax**: Send a written request to NCJRS, P.O. Box 6000, Rockville, MD 20849–6000.
- **Call**: Call an NCJRS information specialist at 800–851–3420 and request a registration form.
- **Online**
  - Go to www.ncjrs.org/puborder and request registration form 8C640. It will be sent to you in the mail.
  - Or register online at www.ncjrs.org/register.
- **Fax-on-Demand**: Dial 800–851–3420, select option 1, then option 1 again. The registration form is #1 on the document index. The form will be faxed to you immediately.

As a registered user, you will receive the bimonthly NCJRS Catalog, the NCJRS Users Guide, and news and announcements of new publications and resources based on your criminal justice interests.

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

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

- **Selection and Application Guide to Personal Body Armor, NIJ Guide 100–01.** This guide responds to questions about the selection and use of body armor for law enforcement. It responds to commonly expressed concerns and provides information to help determine the level of protection required by officers. This guide provides information on the newly released 0101.04 ballistic-resistant standard and the new stab-resistant standard (NIJ Standard–0115.00).

- **National Law Enforcement and Corrections Technology Center Publications Catalog 2002.** This document provides a listing of NLECTC and other government publications of interest to law enforcement, corrections, and forensic sciences practitioners. Categories include communications, forensics, less-than-lethal weapons, protective equipment, and weapons and ammunition.

- **Michigan State Police Tests 2002 Police Vehicles.** This bulletin summarizes test results from the Michigan State Police’s annual evaluation of police-package and special-service patrol vehicles.

- **2002 Model Year Patrol Vehicle Testing.** This report contains the complete results of comprehensive tests of 2002 model year police patrol vehicles conducted by the Michigan State Police.

- **A Comprehensive Evaluation of 2001 Patrol Vehicle Tires.** This bulletin summarizes results of the National Institute of Justice’s (NIJ’s) latest comprehensive evaluation of patrol vehicle tires.

- **Equipment Performance Report: 2001 Patrol Vehicle Tires.** This report presents the complete results of NIJ’s 2001 comprehensive evaluation of patrol vehicle tires.

- **A Comparative Evaluation of Protective Gloves for Law Enforcement and Corrections Applications.** This bulletin summarizes test results for 28 models of pathogen-, cut-, and puncture-resistant protective gloves. It also provides information on the selection and care of protective gloves for law enforcement and corrections applications.

- **2001 Mock Prison Riot Videotape.** This video features technologies used to quell a mock prison riot staged by NIJ’s Office of Law Enforcement Technology Commercialization. Emerging technologies were incorporated into training scenarios to demonstrate the latest technologies.
Veiled Messages of Terror May Lurk in Cyberspace

New York Times

Digital photos and music files can be altered to contain messages of terror. Dr. Jana Schneider, director of the Ohio Criminal Justice Program with the American Friends Service Committee, says the advocacy group is making sure the system is not abused, either through oversight to save money or by denying inmates adequate medical care.

Climbing Inside the Criminal Mind: The Brain Scientist

Time

As he was working on technology to help vocally paralyzed individuals speak, Lawrence Farwell stumbled onto a collection of signals warehoused in the brain. Assuming he could find a practical use for the information, Farwell developed a new forensic technology he calls brain fingerprinting. A sensor-filled headband is fitted to a suspect's head and a series of pictures are flashed on a screen. Familiarity with the stimulus will trigger an involuntary response from the subject, beginning between 300 and 800 milliseconds after the picture is shown. The reaction interprets the real connection between the suspect and the stimulus—be it a phone number or a coded terrorist message—and with additional technologies he has already patented, it becomes a polygraph of sorts. Farwell's research has been funded by more than $1 million from the CIA, and, recently, a former FBI point man for biological and chemical weapons has joined his firm.

Sensor Can Tell If Driver Is Drunk

Dallas Morning News

Civil engineers at the University of Texas at Arlington designed a dashboard sensor able to detect when someone is drinking and possibly alert law enforcement if the driver is drunk. The technology is part of an effort to make officers more efficient in catching drunk drivers, rather than police stopping potential violators based on visual evaluations. The new device works by the sensor detecting certain concentrations of fumes, specifically those exhaled from someone above the .08 legal blood-alcohol content. Equipping cars with the device may prove sticky, some observers say, but others contend such technology could be used by fleet operators to track employees.

DNA Sanction Against Leading a Life of Crime

Corley Evening Telegraph

British police at the Little Park Street station in Coventry are on a mission to remind criminals that once arrested, their DNA will be sampled and stored in a national database for life, thanks to advances in forensic technology. New evidence has even been recovered from cold cases, as DNA can be identified through a strand of hair or even a drop of sweat found at the crime scene. The DNA is then cataloged into the database and run against evidence recovered from crime scenes and victims nationwide. Recently, a man arrested for a crime in another region of the country was DNA-matched against a rape he committed 3 years prior and from which he walked away. In another case, the freshly polished shoes of a man suspected of murdering his girlfriend 5 years ago were DNA tested and found to have drops of the victim's blood preserved under the polish. To get their point across, Little Park Street police officers have been handing out postcards to newly freed prisoners, reminding them, "Don't get nicked again," because their DNA will forever be on file.

Big Alternators Help Police

Design News

Many police cars are now being fitted with mobile data terminals, radio communication and navigation systems, on-dash video systems, sirens, flashing lights, and other power-consuming features. In turn, car makers are ensuring that new cars feature fully integrated electronics systems, which can prevent a car from stalling due to excessive electric demands. GM, for instance, has unveiled a line of police vehicles that feature a large, 125w CS125/7 alternator from Bosch Automotive. Ford, meanwhile, has equipped its police version of the Crown Victoria with 135-amp alternators from Viition. Even though the current alternators are able to handle the electric load, future technologies may need higher capacity systems.

Want a Car Stolen? Dumping It in Mexico Isn't So Easy Anymore

Associated Press

If the U.S. economic downturn continues, law enforcement investigators expect so-called "owner give-up" cases to increase. In an owner give-up, the owner of a vehicle will purposely abandon it to collect the insurance payment. Mexico is a favored locale for people hoping that their vehicles will never be recovered. According to experts, owner give-up cases are an increasing problem in localities along the California border. Investigators become suspicious if they recover a vehicle reported to be stolen and find no harm to the ignition or other damage from forced entry. However, this does not constitute sufficient proof. To assist their searches, investigators began accessing data collected by the U.S. Customs Service's digital license-plate readers. The readers are placed at 9 of the 34 border checkpoints and record the time at which a vehicle enters Mexico.

Use of Barcodes To Track Evidence Eases Police Work

Kansas City Star

Law enforcement offices in the Kansas City area and across the United States are beginning to integrate a system used by supermarkets to monitor evidence coming into property rooms. The Independence Police Department previously employed a method to track evidence that involved paperwork and shelf assignments, but now it employs a computer-based system that assigns barcodes to pieces of evidence. The new system allows for less paperwork and more rapid inventories, thanks to the scanning technology and computer. According to Joe Latta of the International Association for Property and Evidence, barcoding devices have existed for three decades but are new to law enforcement. Latta reports that more attention has gone to improving property rooms lately because of a growing trend of stolen property. Barcode systems help agencies like the Overland Park Police Department monitor officer equipment. Independence and Kansas City use barcode systems to keep track of large amounts of evidence so they can track evidence and make informed decisions about which items to remove at what times.

(See TechShorts, page 11)
Government Authorities

Got Your Number

Financial Times

The Federal Communications Commission (FCC) hopes to have E911 technology, which is able to determine the position of cell-phone users within 30 meters of their location, in the hands of 95 percent of subscribers by 2005. The current systems used to locate cell-phone users are triangulation between mobile phone bases, which can locate users only within a few hundred meters in cities and several miles in rural areas, and global positioning systems, which use satellites and have trouble in cities and inside buildings. Law enforcement agencies are interested more than ever in easier and quicker ways to locate and track people who may be conducting criminal or terrorist activities. Criminals can avoid detection by swapping prepaid cell phones, by not using suspicious keywords in Internet communications that would be detected by the FBI’s Carnivore program, and by using software to encrypt electronic messages. However, criminals would be hard pressed to avoid a system of closed circuit television cameras that provide visual information about the Texas Department of Criminal Justice’s (TDCJ) Fuginet Program, contact the TDCJ Office of the Inspector General, 936–437–5652, or e-mail fuginet@tdcj.state.tx.us.

POC Update

The point of contact for the article “Fugineting Parole Violators” that appeared in the Winter 2002 edition of TechBeat has been updated. For more information about the Texas Department of Criminal Justice’s (TDCJ) Fuginet Program, contact the TDCJ Office of the Inspector General, 936–437–5652, or e-mail fuginet@tdcj.state.tx.us.

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Questions/Comments/Story Ideas: We welcome all questions, comments, and story ideas. Please contact Rick Neimiller, TechBeat managing editor, at 800–248–2742, or e-mail rneimiller@nlectc.org.

Awards: TechBeat has received numerous awards, including the 1998 Best of Category, Excellence in Printing Award from the Printing & Graphic Communications Association; the first-place 1998 Blue Pencil Award for Most Improved Periodical from the National Association of Government Communicators; the 1999 Silver Inkweld Award of Merit from the International Association of Business Communicators; and the APEX 2001 Award of Excellence for Magazines and Newspapers–Printed.

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The same technology that brings you decaffeinated coffee after your evening meal may soon help investigators identify criminals from hair left behind at crime scenes. A study under way at the National Institute of Standards and Technology (NIST) uses an adaptation of supercritical fluid extraction (SFE)—a procedure like that used to decaffeinate coffee—to create chemical profiles of hair samples.

The technique, developed by NIST research chemist Bruce Benner in 1993, uses SFE connected to gas chromatography and mass spectrometry equipment similar to that already in place in crime labs to identify the chemical components of hair samples. The resulting chemical profile includes applied substances like shampoo and conditioners, as well as naturally occurring substances such as cholesterol.

“Our main goal in the development of this method has been to provide additional data from trace evidence hair analysis that could help guide a criminal investigation,” Benner says. “For example, the method could possibly distinguish hair of the victim from that of the alleged perpetrator and help reduce the number of suspects from comparisons of the trace evidence obtained at the crime scene with that obtained from suspects.”

Using this technique, researchers can derive a chemical profile from samples as small as one to two segments of hair about 1.5 centimeters (less than 5/8 of an inch) in length. In the first portion of the study, conducted in 1999, hair samples were collected from 20 people and consistent chemical profiles developed for each individual. Information on this study can be found in Trace Evidence Analysis of Human Hair by On-Line Supercritical Fluid Extraction—Gas Chromatography/Mass Spectrometry: A Feasibility Study, NIJ Report 600–99. (The National Institute of Justice provided funding for the study.)

“Depending on the results and the utility of the method for human identification, we would like to transfer the method to the FBI and other forensic research laboratories for them to apply it to known hair samples in their archives,” Benner says, cautioning that this process could take several years. “We are encouraged from the preliminary study. Our method for characterizing the surface components of small hair samples may provide complementary information to that obtained through traditional microscopic examination of samples collected at a crime scene.”

For more information about trace evidence hair analysis, contact Michael Newman, National Institute of Standards and Technology Public Affairs and Business Division, 301–975–3025, or e-mail michael.newman@nist.gov. To order the publication Trace Evidence Analysis of Human Hair by On-Line Supercritical Fluid Extraction—Gas Chromatography/Mass Spectrometry: A Feasibility Study, NIJ Report 600–99, contact the National Criminal Justice Reference Service at 800–851–3420.