## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Summary</td>
<td>1</td>
</tr>
<tr>
<td>Providing Critical Support to the Criminal Justice Community</td>
<td></td>
</tr>
<tr>
<td>National Center</td>
<td>5</td>
</tr>
<tr>
<td>The Reinvention of JUSTNET</td>
<td></td>
</tr>
<tr>
<td>Standards and Testing Program</td>
<td>13</td>
</tr>
<tr>
<td>Facilitating Standards Development and Compliance Testing</td>
<td></td>
</tr>
<tr>
<td>States, Major Cities and Counties Regional Center</td>
<td>19</td>
</tr>
<tr>
<td>Technology Decision Tool Provides Cost/Benefit Analysis for Public Safety</td>
<td></td>
</tr>
<tr>
<td>Small, Rural, Tribal and Border Regional Center</td>
<td>23</td>
</tr>
<tr>
<td>Surplus Property Program Boosts Capabilities and Reduces Costs for Public Safety</td>
<td></td>
</tr>
<tr>
<td>Law Enforcement Aviation Technology Program</td>
<td>29</td>
</tr>
<tr>
<td>Helping With Our Nation’s Defense</td>
<td></td>
</tr>
<tr>
<td>Alaska Regional Center</td>
<td>35</td>
</tr>
<tr>
<td>Helping Small, Scattered Agencies</td>
<td></td>
</tr>
<tr>
<td>Outreach</td>
<td>37</td>
</tr>
<tr>
<td>Listening to, Learning From and Sharing With the Criminal Justice Community</td>
<td></td>
</tr>
</tbody>
</table>
Technology Institutes.................................................................47
  Bringing Practitioners Together to Solve Problems

Communications Technology Center of Excellence ..................53
  Evaluation of Brookline Broadband Wireless Project

Corrections Technology Center of Excellence ..........................63
  Offender Tracking System Standard Nears Completion

Forensic Technology Center of Excellence..................................69
  A New Beginning

Information and Geospatial Technologies
Center of Excellence.....................................................................75
  Exploding Myths About Predictive Policing

Sensor, Surveillance and Biometrics Technologies
Center of Excellence.....................................................................83
  Taking Technology Tests Into the Field

Weapons and Protective Systems Technology
Center of Excellence...................................................................91
  Studying the Impact of Line-of-Duty Injuries
EXECUTIVE SUMMARY

Providing Critical Support to the Criminal Justice Community

The National Law Enforcement and Corrections Technology Center (NLECTC) System plays a critical support role in the National Institute of Justice’s (NIJ’s) mission to help state, local, tribal and federal law enforcement, corrections and other criminal justice agencies address and meet their technology needs and challenges. An integrated network of regional centers and centers of excellence (CoEs) with the National Center as the support hub, the NLECTC System offers free criminal justice technology outreach, demonstration, testing and evaluation assistance. It serves as the conduit between researchers and criminal justice professionals in the field, working with practitioners to identify urgent and emerging technology needs. The NLECTC System thus helps the NIJ Office of Science and Technology determine research, development, test and evaluation (RDT&E) priorities; develop standards and test methods; and identify best practices.
National Center

At the core of this integrated network is the National Center, which serves a dual role as the initial point of entry for criminal justice professionals and other constituents, and as the dissemination center for information. NLECTC-National uses a number of tools to collect and respond to inquiries from the field, including the “Ask NLECTC” email address (asknlectc@justnet.org), the toll-free line at (800) 248-2742, and online forms and surveys located on JUSTNET (https://www.justnet.org), the NLECTC System website. NLECTC-National staff either fulfills the request on the spot, if it falls within the National Center’s unique areas of expertise, or transfers it to the proper component center that can handle the request. In addition to providing subject-matter expert assistance related to equipment testing and standards, NLECTC-National also:

- Conducts equipment testing programs (ballistic- and stab-resistant body armor, restraints and autoloading pistols), reviews and analyzes testing data, and disseminates results.
- Manages the system’s social media outlets, including Twitter, Facebook and YouTube.
- Disseminates print and online newsletters and e-bulletins, including TechBeat and JUSTNET News.

You can read about the 2012 expansion and redesign of JUSTNET on p. 5, and about the key role that the National Center plays in NIJ’s standards development process on p. 13.

Regional Centers

NIJ created the States, Major Cities and Counties (SMCC) Regional Center to accommodate the needs of the nation’s large agencies (those with 50 or more sworn personnel) and the Small, Rural, Tribal and Border Regional Center (SRTB-RC) to work with agencies that have less than 50 sworn staff. Both regional centers provide access to a full range of scientific and technology-related information, including results from RDT&E activities; they disseminate this information through outreach at conferences, during site visits and by sponsoring NIJ’s technology institutes, which bring together administrator-level person-
nel to share information on technology challenges they have faced and to network with representatives of other agencies facing similar problems. You can read more about the outreach efforts of all of the NLECTC System’s centers on p. 37, and you can find a chapter on the technology institutes on p. 47.

Although the two regional centers provide some similar services, they also offer unique programs designed for their target audiences. SRTB-RC coordinates programs offered by NIJ’s Law Enforcement Aviation Technology Program (see p. 29) and provides a staff liaison between small and rural agencies and the federal government Surplus Property Program (see p. 23). SMCC played a key role in the development and administration of NIJ’s Technology Decision Tool, an online aid that helps law enforcement agencies plan and implement a new technology. You can read about this tool on p. 19.

The Alaska Regional Center ceased operations on Sept. 30, 2012. Its activities are summarized on p. 35.

Centers of Excellence

Within their respective portfolio areas, the CoEs provide scientific and technical support to NIJ’s RDT&E efforts, and support the transfer and adoption of technology into practice by the criminal justice community. They also provide specialized technology assistance on request and help facilitate RDT&E projects at various testbed agencies.

Highlighted activities include:

- A research team from the Communications Technology CoE worked on an operational evaluation of a public safety wireless broadband project in Brookline, Mass. (p. 53).

- A Special Technical Committee convened by the Corrections Technology CoE created a draft standard and other documents related to offender tracking systems, and posted these publications for public review and comment (p. 63).

- Using a blend of technical, administrative and policy expertise in forensic science, the Forensic Technology CoE began the critical process of refocusing the center on key priorities (p. 69).
The Information and Geospatial Technologies CoE presented on predictive policing (also known as crime forecasting) on numerous occasions and developed a guidebook to be published in 2013 (p. 75).

The Sensor, Surveillance, and Biometrics Technologies CoE facilitated comparative testing and evaluation of a number of prototype devices (p. 83).

The Weapons and Protective Systems Technology CoE began the process of examining and analyzing line-of-duty injuries nationwide (p. 91).

Note: The mention of any vendor or product in this report does not constitute endorsement by the U.S. Department of Justice or the National Institute of Justice.
The Reinvention of JUSTNET

JUSTNET (https://www.justnet.org) serves as the gateway to the National Law Enforcement and Corrections Technology Center (NLECTC) System. In 2012, the National Center redesigned and enhanced the website to better serve the public safety community. With eye-catching design and convenient navigation, the website provides criminal justice professionals with the latest news, publications, videos and presentations to help them do their jobs safely and effectively.

“An awful lot of information is on JUSTNET. The bulk of our audience is law enforcement and corrections practitioners in the field and we wanted to ensure they can come to our site and find what they need quickly and efficiently,” says Kate Poindexter, JUSTNET and social media content developer.

From the home page, website users can browse through Tech Topics for timely information on specific subjects, including aviation, biometrics, body armor, communications, corrections, cybercrime, forensics, geospatial and crime mapping, less-lethal technologies, officer safety and protective technologies, sensors and surveillance technologies, and standards and testing.
A slide show on the home page highlights recent developments in technology, publications and standards. It also provides easy access to the latest edition of the e-TechBeat newsmagazine and its mobile app, as well as information related to body armor.

“A large portion of folks who visit our site are seeking information about body armor and we want to make sure that they can find it quickly. They can just go to the body armor slide and click on the body armor link, which takes them to the section of the website that has all of our information regarding body armor standards and equipment,” Poindexter says.

An upgraded ordering system allows visitors to order publications and other free NIJ-sponsored materials from NLECTC with the click of a mouse. An “I Want To” box on the home page can take visitors directly to the following:

- “Find Compliant Products,” which lists armor and other types of products that comply with National Institute of Justice (NIJ) standards.
“Learn About Testing,” which describes the NIJ Compliance Testing Program (CTP), under which equipment such as ballistic- and stab-resistant body armor models is evaluated and undergoes a series of tests described in NIJ standards to determine if it meets minimum performance requirements.

“Access School Safety Resources,” which lists training materials, computer software, videos and other information resources related to school safety.

“View Resources and Excess Property,” which describes information and equipment resources such as the NIJ technology institutes for law enforcement and corrections personnel, where participants share information on technology projects, issues and solutions; and the Surplus Property Program, under which law enforcement agencies can obtain excess federal property at little or no cost.

“Read NIJ Body Armor Notices,” which provides access to NIJ advisory, noncompliance and safety notices. The notices inform interested parties that the CTP has concerns with certain body armor models being reviewed and evaluated.

JUSTNET also provides easy access to NLECTC’s YouTube, Facebook and Twitter sites, which lead users to the latest information so they can maximize the use of their time.

“We find that when we go out to conferences and we ask practitioners how they like to receive information, they are increasingly looking to social media outlets, whether on the job or in their spare time,” Poindexter says. “We encourage our users to look at our Facebook page and provide comments. We have made a concerted effort to reach out to greater numbers of folks and they have responded. Through social media, we retweet information we get from other people, we use information that we see in the news, we of course highlight material coming from NIJ and the Centers of Excellence, and we have links to other websites and other news outlets.”

**Highlights**

As the focal point for information dissemination for the entire NLECTC System, NLECTC-National relays requests for information and assistance to the center that can best meet the request. From its position as the system hub, the National Center also provides law enforcement
TWO MORE AWARDS FOR TECHBEAT

During 2012, TechBeat added two more awards to the long list of those it has received since publication began in 1995. During that time, TechBeat has continued to grow and evolve as the publishing world moved into digital and electronic formats, and its interactive online version was singled out by the International Academy of Visual Arts in May for a Silver Communicator Award, also known as the Award of Distinction. The Academy is an invitation-only body consisting of top-tier professionals from acclaimed media, communications, advertising, creative and marketing firms. The 2012 Communicator Awards featured more than 6,000 entries.

In September, TechBeat received a Certificate of Excellence in the “Best of Editorial Design” category in the American Graphic Design Awards. The competition, run by GD USA magazine, is open to graphic design firms, advertising agencies, in-house corporate and institutional designers, publishers and other media. TechBeat received this honor from a field of more than 8,000 entries.

and corrections professionals with an entry portal to the system and its component centers through JUSTNET, the “Ask NLECTC” email address (asknlectc@justnet.org) and the toll-free line at (800) 248-2742. These channels help NLECTC-National fulfill its primary mission to offer the criminal justice community many ways in which to obtain information about relevant technology and related matters of interest.

The National Center also supports NIJ’s standards development and implementation and its CTP (for more information, see “Facilitating Standards Development and Compliance Testing” on p. 13). The CTP ensures the safety and effectiveness of some types of equipment used by the law enforcement and corrections communities.

Highlighted activities include:

Through participation in the ANSI-ASQ National Accreditation Board (ANAB), finalized the ANAB Accreditation Rule for BA 9000. This action was the first step toward accrediting body armor manufacturers to a body armor-specific quality management system and providing law enforcement agencies greater confidence in the consistency of body armor.

Designed, edited and produced 19 publications for various centers within the system, including nine evaluation reports for the Electronic Crime Center of Excellence and reports on license plate readers, body-worn cameras and through-the-wall surveillance.

Wrote an article focusing on the NLECTC System’s efforts related to the federal Surplus Property Program that was published in the June issue of Police Chief magazine (see right).

Coordinated and provided logistical support for a Technology Institute for Law Enforcement and edited, designed and produced the program and after-action report. More than 30 participants—all senior law enforcement personnel selected from a pool of applicants—shared their technology challenges, networked and received an overview of current and emerging NIJ projects.

Through the CTP, provided oversight and administration for the testing of 89 models of ballistic-resistant body armor, 19 models of stab-resistant armor and 11 restraints, and conducted follow-up inspection and testing of 64 models of ballistic-resistant body armor.

Provided meeting coordination, subject-matter expertise and/or technical writing/editing support for 18 Technology Working Group and Special Technical Committee meetings, including those for stab-resistant body armor, offender tracking, in-car video, interview room video, license plate readers and chemical/biological/radiological/nuclear protective ensembles.
Helped the International Homicide Investigators Association identify 10 agencies to receive scholarships for a free training opportunity at their annual conference.

Along with staff from the States, Major Cities and Counties Regional Center, exhibited at 30 national law enforcement and corrections conferences.

Produced four issues of TechBeat, the award-winning newsletter (see sidebar, “Two More Awards for TechBeat,” p. 8) for law enforcement and corrections professionals, in both interactive online and print versions. This year, subscribers to e-TechBeat gained the option to view the news magazine on smartphones and other mobile devices using both Android and iPhone apps. The upgraded e-TechBeat now offers interactive features, including video, audio and embedded images.
### EXHIBIT 3. SUMMARY OF TECHNOLOGY ASSISTANCE: INFORMATION CENTER

<table>
<thead>
<tr>
<th>Program Area</th>
<th>Number of Requests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aviation</td>
<td>5</td>
</tr>
<tr>
<td>Biometrics</td>
<td>6</td>
</tr>
<tr>
<td>Body Armor</td>
<td>25</td>
</tr>
<tr>
<td>Commercialization</td>
<td>1</td>
</tr>
<tr>
<td>Communications</td>
<td>28</td>
</tr>
<tr>
<td>Corrections</td>
<td>114</td>
</tr>
<tr>
<td>Court Technologies</td>
<td>1</td>
</tr>
<tr>
<td>Crime Mapping</td>
<td>3</td>
</tr>
<tr>
<td>Cyber Crime</td>
<td>11</td>
</tr>
<tr>
<td>Equipment Programs</td>
<td>82</td>
</tr>
<tr>
<td>Explosives</td>
<td>5</td>
</tr>
<tr>
<td>Forensics</td>
<td>17</td>
</tr>
<tr>
<td>Information Technologies</td>
<td>266</td>
</tr>
<tr>
<td>Less-Lethal Technologies</td>
<td>12</td>
</tr>
<tr>
<td>Personal Protective Equipment</td>
<td>87</td>
</tr>
<tr>
<td>Pursuit Management</td>
<td>0</td>
</tr>
<tr>
<td>School Safety</td>
<td>14</td>
</tr>
<tr>
<td>Sensors and Surveillance</td>
<td>42</td>
</tr>
<tr>
<td>Standards and Testing</td>
<td>208</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>927</strong></td>
</tr>
</tbody>
</table>
In conjunction with the Michigan State Police, conducted 17 evaluations of 2013 model year police vehicles.

Handled approximately 636 requests for information and publications, distributing 1,737 individual publication items.

Increased subscriptions to JUSTNET News, a biweekly listserv publication, by 4.48 percent to 5,945 subscribers. Plans call for publication to move to a weekly schedule in January 2013.

For more information on NLECTC-National, contact Program Manager Mike O’Shea at (202) 305-7954 or by email at michael.oshea@usdoj.gov.
Facilitating Standards Development and Compliance Testing

Equipment standards provide a level of confidence in a product’s fitness for use, in its safety and in its reliability. The National Institute of Justice (NIJ) develops equipment standards to address the needs of the criminal justice community by specifying minimum equipment performance requirements.

The NIJ Compliance Testing Program (CTP), administered by National Law Enforcement and Corrections Technology Center (NLECTC)-National, assesses the performance of commercially available law enforcement and corrections equipment to provide the user community with confidence that their equipment has been independently evaluated or has demonstrated the ability to meet current NIJ performance standards.
Standards Development

During 2012, NLECTC-National continued its support of the NIJ standards development program, particularly a major update to the standard for stab-resistant body armor.

Several years ago, NIJ instituted a revised process for developing standards using Special Technical Committees (STCs) in which practitioners, scientists, subject-matter experts, test laboratory personnel and stakeholder organizations collaborate to produce a voluntary performance standard, a certification program requirements document, and a selection and application guide (SAG). NIJ-established STCs collaborate and define equipment requirements to ensure that practitioner needs are addressed.

The audience for the standard and certification program requirements consists of manufacturers, certification bodies and testing laboratories. Certification requirements are provided to ensure an independent third party verifies that the product conforms to the standard. The SAG explains the standard for officers, administrators and purchasing agents.

NIJ wants practitioners to drive the standards process; to that end, several corrections officers serve on the STC that is developing the updated stab-resistant armor standard. In addition, technical experts such as representatives of testing laboratories and the military ensure that test methods accurately reflect practitioner requirements. Manufacturers are not allowed to participate on an STC, but are given opportunities to provide comments and suggestions during the standard development process. Several standards have been developed or are in development using the STC process, including chemical/biological/radiological/nuclear protective ensembles, bomb suits, restraints, duty holsters and offender tracking systems.

“We gather information from a variety of sources, bringing in practitioners from small, large, rural, federal, state, local and tribal agencies with expertise in different areas,” says Debra Stoe, NIJ standards and testing manager. “Developing a standard is a process of critical thinking, and we engage and challenge practitioners so that at the end of the process we have a product that to the best of our ability addresses a wide variety of operational needs in a single source.”

“Our STC process has become more of a building block to address the changing environment of law enforcement, who need to be prepared to address any of a number of modern
challenges and threats that are global in nature,” she adds. “We want to make sure we are speaking in one voice for the thousands of agencies and officers.”

NIJ published the current stab-resistant armor standard, *Stab Resistance of Personal Body Armor (NIJ Standard-0115.00)*, in 2000, adapting it from a United Kingdom standard that primarily addressed the threat from commercial knives. Revision of the standard is needed to address current stab and slash threats faced by U.S. officers.

The updated standard, with a draft working title of *Criminal Justice Stab- and Slash-Resistant Vest Standard (NIJ Standard-0115.01)*, should better reflect the types of threats currently encountered by corrections officers in the United States. The standard will specify minimum requirements for stab/slash-resistant torso armor and also will include testing specific to female armor.

“There are more incidences in the [corrections] field using an edged weapon, resulting in slash-type wounds, so we needed to revise the standard to address slash resistance,” says Jack Harne, physical scientist and NIJ corrections program manager. “We are also addressing form and fit of female body armor to ensure areas of vulnerability are protected.”

The STC began meeting in 2011. During 2012, the majority of the work that will inform the draft document had been completed; however, the standard needs additional technical input as to the types of weapons to use as testing exemplars before a draft can be released for public comment. The STC has been researching the types of weapons confiscated in correctional settings and the types of wounds that corrections officers receive.

As envisioned, the draft standard will provide two performance categories for stab/slash-resistant armor based on mission requirements and threats anticipated within operational environments:

- Improvised weapons typically encountered inside controlled access facilities, including jails, detention centers and prisons.

- Commercial weapons typically encountered outside controlled access facilities, including the jail intake area and “on the street.”
Current plans call for the draft standard to be available for public review and comment in 2013. Comments will be accepted on JUSTNET.

**Compliance Testing Program**

Under the Compliance Testing Program, equipment—such as ballistic-resistant and stab-resistant body armor models—is evaluated and undergoes a series of tests described in NIJ standards to determine if it meets minimum performance requirements. Body armor models that comply with the standard and other program requirements are added to the Compliant Products List (CPL), which is posted to the NLECTC website, https://www.justnet.org.

Through the CTP, manufacturers can voluntarily submit equipment samples for testing by NIJ-approved laboratories to determine whether their models comply with a particular standard.

All NIJ standards are voluntary and manufacturers are not required to follow them; however, many public safety agencies require compliance with NIJ standards before they purchase equipment. The Bureau of Justice Assistance’s Bulletproof Vest Partnership grant program provides funding to agencies for the purchase of ballistic- and stab-resistant body armor that complies with NIJ standards.

Standards-based compliance testing is performed on ballistic- and stab-resistant armor, metallic handcuffs and semiautomatic pistols. Through the CTP in 2012, NLECTC-National provided oversight and administration for the testing of 89 models of ballistic-resistant body armor, 19 models of stab-resistant armor and 11 restraints, and follow-up inspection and testing on 64 models of ballistic-resistant body armor.

The second full year of the Follow-Up Inspection and Testing (FIT) Program occurred in 2012. This program provides confidence that production ballistic-resistant armor is constructed similarly to armor samples previously evaluated by the CTP and deemed compliant with the latest version of the standard, *Ballistic Resistance of Body Armor (NIJ Standard 0101.06)*, and is listed on the CPL. Under the FIT Program, periodic surprise inspections are conducted, during which independent inspectors pull production armor samples and send them for inspection and testing.
In 2012, the FIT Program inspected 39 manufacturing locations and tested 64 body armor models. Of those models, four sustained perforations during laboratory testing. Testing failures require manufacturers to conduct a root cause analysis and implement corrective actions to ensure the problems do not occur again. Testing failures that occurred were the result of initial product inspections, so no armor models had been fielded at the time of testing. The program also discovered one armor model with a major construction variation that may affect ballistic performance, and five with minor variations. Examples of major construction variations include a difference between the number of layers in the follow-up testing armor samples and those in the original samples, and leaking ballistic panel covers that permit water to penetrate to the ballistic panel. Minor variations are those that do not affect ballistic performance but differ from the originally submitted samples of armor, such as changes in material colors or slight changes in the location of bar tacks.

Examples of other support the CTP provided to NIJ include the following:

- Performed research into a potential vest failure in Phoenix and subsequent testing on a similar used vest by an independent lab. The CTP did a comparative analysis between the lab-tested used vest and archived, standard-compliant armor samples, and provided a comprehensive and technical report to NIJ that aided its response.

- Revised the compliance test report to provide better compatibility with laboratory computers and added new error checking to produce more accurate and complete test reports.

**REVISING THE BALLISTIC-RESISTANT BODY ARMOR STANDARD**

The National Institute of Justice (NIJ) anticipates that a Special Technical Committee will begin revising the ballistic-resistant body armor standard in 2013. Previously, NIJ has held workshops to obtain comments and suggestions from manufacturers of body armor. NIJ also held a needs and requirements meeting during which officers identified the operational environments in which they work, missions and roles performed while wearing armor, and other equipment that may be affected while wearing armor. This will be the first revision to the standard since the publication of NIJ Standard-0101.06 in 2008.
Another type of testing takes place through comparative evaluation programs, under which equipment—such as patrol vehicles, brake pads and police vehicle tires—is periodically field tested and test data are published, allowing users to select the product that best suits their needs. In 2012, NLECTC-National participated in the Michigan State Police evaluation of 2013 patrol vehicles.

For more information on the Compliance Testing Program, contact Program Manager Mike O’Shea at (202) 305-7954 or by email at michael.oshea@usdoj.gov.
Planning for and implementing new technology can be a daunting task for public safety agencies, especially during times of fiscal austerity. Although the safety of officers and the public is paramount, agencies must consider efficiency of operations and budget realities when making purchasing decisions.

The online Technology Decision Tool on JUSTNET provides an automated approach to help law enforcement and corrections agencies make informed choices associated with technology acquisition. The States, Major Cities and Counties (SMCC) Regional Center developed the tool in 2012 with input from practitioners who have firsthand experience in successfully implementing public safety technology projects.

The tool can help agencies clearly articulate the need for the technology. It guides agencies through a customized cost/benefit analysis exercise to help them make the best decisions for their officers and their communities, and directs decision-making based on needs, technology availability and lifecycle costs of products and training.
The tool asks agencies to examine the potential project from all angles, including what is unique, what the product or service will do, who else is using it and their comments and concerns, how the project or program will be managed, and significant risks that could have a negative impact on cost or schedule, including those that are technical, organizational, vendor-related, financial or environmental.

To see how the Technology Decision Tool can help, agencies can visit https://www.justnet.org/pdf/Technology-Decision-Tool.pdf.

Highlights

The SMCC Regional Center provides a resource and outreach mechanism for larger criminal justice agencies (those with 50 or more sworn personnel). Through SMCC, these agencies gain access to a full range of relevant scientific and technology-related information and publications, including the resources and technology assistance activities of the entire National Law Enforcement and Corrections Technology Center (NLECTC) System and results from National Institute of Justice (NIJ) research, development, testing and evaluation.

Highlighted activities include:

- Conducted five presentations on methamphetamine lab identification and safety for various public safety agencies in Kentucky. The presentation, developed by the SMCC assistant director due to his knowledge/experience in this subject, specifically targets the one-step method of production and scene safety. The training addresses an emerging issue identified through conversations with law enforcement professionals at conferences.

- Developed a resource sheet to be provided in response to inquiries for assistance in setting up methamphetamine training similar to that described above, following the publication of “Meth Lab Training for First Responders” in the fall 2012 issue of TechBeat. The resource sheet, titled An Introduction to Clandestine Meth Labs (see right), lists websites and contact information.
Exhibited at the quarterly FBI National Academy Partner Days as part of an ongoing cooperative effort between NIJ, SMCC and the FBI. Partner Days target the 250 police executives attending the current FBI National Academy class, but are also open to members of new agent classes, in-service classes and other law enforcement classes, along with academy staff. Approximately 1,500 persons are on academy grounds during the events.

Conducted a meeting of the SMCC Constituent Advisory Group, where members discussed technology issues they face and made recommendations for priorities for technology development to meet the needs identified in this discussion.

Coordinated and provided logistical support for a Technology Institute for Law Enforcement and edited, designed and produced the program and after-action report. More than 30 participants, all senior law enforcement personnel selected from a pool of applicants, shared their technology challenges, networked and received an overview of current and emerging NIJ projects.

In cooperation with NLECTC-National, exhibited at 30 national, regional and state law enforcement and corrections conferences. Disseminated information about NIJ and NLECTC to representatives from 54 states and territories, including the District of Columbia, Northern Mariana Islands, U.S. Virgin Islands and Puerto Rico, representing 1,913 cities and counties within the continental United States and 61 law enforcement and corrections agencies, and documenting 4,303 total new contacts.

For more information on the States, Major Cities and Counties Regional Center, contact Program Manager Mike O’Shea at (202) 305-7954 or by email at michael.oshea@usdoj.gov.
Surplus Property Program Boosts Capabilities and Reduces Costs for Public Safety

In 2012, when the Tomball (Texas) Police Department needed a commercial-grade, stainless steel refrigerator to store evidence, it turned to the 1033 Program, through which excess U.S. Department of Defense (DoD) property is provided to law enforcement agencies at little or no cost.

Tomball, a suburb of Houston, is only one of thousands of agencies in the United States and its territories that have used the program, which over the years has provided excess DoD equipment (with a value in excess of $2.6 billion) to law enforcement agencies. Through the program, Tomball has also acquired a Humvee, an M35 2.5-ton cargo truck, portable generators, Nomex flight suits for its aviation unit and flight helmets.

Equipment obtained through the program is in “as is” condition and free, but the receiving agency is responsible for transportation costs. Also, some states assess a transfer fee.
“A $15,000 refrigerator cost us just $700 for shipping it here,” says Tomball Police Chief Robert Hauck. “We found the Humvee at Fort Drum, N.Y., and heard of an agency in the Dallas area also getting one from Fort Drum, so we split the cost of transportation. It cost us each about $2,000 to ship the vehicles, which are worth about $150,000 each.”

“It is a great way of finding equipment that allows us to do our jobs better and at the same time be cost-efficient,” Hauck adds. “It is an incredibly valuable program and I am thankful we are a part of it. We are able to serve our community better and save our community money by using equipment taxpayers have already paid for.”

Charlie Brune of the National Law Enforcement and Corrections Technology Center System’s Small, Rural, Tribal and Border Regional Center serves as program liaison and can help facilitate the acquisition process. He notes that the program has allowed law enforcement agencies to acquire countless types of products, including:

- Vehicles (land, sea and air).

- Weapons.

- Radios and televisions.

- Tents.

- Sleeping bags.

- Cold weather clothing.

- Computer, fingerprint, night vision, first aid and photographic equipment.

During fiscal year 2012, approximately 1.1 million items valued at more than $546 million were transferred to agencies under the 1033 Program, according to the website of the Defense Logistics Agency Disposition Services (https://www.dispositionservices.dla.mil/rtd03/leso/Statistics.shtml).

Chief Milton Agay of the Berrien Springs/Oronoko Township Police Department in Michigan has found the program to be a boon to his department of 10 officers. In the past two years, the
department has obtained M-16 rifles, ballistic helmets, two Humvees, ATVs, a Gator utility vehicle and exercise equipment for an entire gym.

“It is an excellent program. We would not have had any of this equipment had it not been for the 1033 Program,” Agay says.

Each state has a coordinator to run the program. Law enforcement agencies can determine what DoD property is available by searching the Law Enforcement Support Office (LESO) database website (https://www.dispositionservices.dla.mil/rtd03/leso/index.shtml) or by visiting a Disposition Services Site in person. It is recommended that agencies identify staff who will consistently work with the 1033 Program to expedite the acquisition process. The amount of time required between when an agency expresses interest in an item to delivery depends on the item.

“It’s not an arduous, painful process by any means, but you need to understand how the military identifies items,” says Hauck. “There is value in identifying someone to be the agency coordinator to dig into the process and see how the military identifies equipment and how to navigate the system. We carefully consider whether we need something or not. I believe it should be things you really need and will use. That is the spirit of the program and we are very thoughtful in looking for things we need to better perform our mission.”

For detailed information on the 1033 Program, contact Charlie Brune at (512) 517-8064 or by email at cbrune@srtbrc.org.

**ADDITIONAL PROPERTY PROGRAMS**

In addition to the 1033 Program, two other property programs within the federal system can benefit law enforcement.

**1122 Program.** Open to agencies involved in counterdrug or first responder activities, this program allows state and local governments to buy new equipment from the U.S. Department of the Army, the General Services Administration (GSA) and the Defense Logistics Agency at federal government cost. Agencies can use the 1122 Program by contacting the state point of contact, who will initiate the paperwork through the agency that has the equipment.

**Surplus Property Donation Program.** Under this program (administered by GSA), each state has a State Agency for Surplus Property (SASP), which can donate surplus property from all federal sources to public and nonprofit agencies. Law enforcement agencies enrolled in the 1033 Program are eligible to obtain property from their SASP. SASPs have access to personal property from all federal sources, while the 1033 Program exclusively handles DoD items.
The Small, Rural, Tribal and Border Regional Center (SRTB-RC) has facilitated an evaluation test of a prototype license plate recognition (LPR) system that may provide a relatively inexpensive potential solution to mobile system challenges.

The project’s main goal was to find technology suitable for smaller agencies that would combine the ability to maximize reads and minimize manpower with cost- and energy-saving measures. SRTB-RC worked with a vendor to devise a solar panel that charges a capacitor-based power system. Thus, the portable system functions 24 hours a day, 7 days a week on solar power alone. A wireless connection through an air card completes the no-maintenance communications backhaul solution.

A driver approaching the trailer sees the “Your speed is XX” warning and as the vehicle passes the trailer, the two-camera LPR system scans the plate. When the agency wants to move the trailer to monitor a different location, any vehicle with a trailer hitch can pull it to a different site; after a quick check to ensure connectivity, the system will be operational from its new location.

The prototype system runs against databases from the National Crime Information Center database, the Texas Crime Information Center (TCIC) and the local agency’s customized alert list. Alerts are sent to the dispatch center for review before they reach officers in the field.

The system was field tested by three law enforcement agencies in Central Texas during 2012. The prototype system read more than 1,761,527 plates overall and generated 1,476 valid alarms (the vast majority were hits identifying registered sex offenders, which are included in the TCIC LPR database). Additionally, the system identified 737 reads as alarms that proved invalid because of either a misread or because the plate was from another state.

As a result of this evaluation, all three agencies have either developed their own LPR program or expanded an existing program. All of the agencies involved were very impressed by the volume of data generated and the force multiplier that the system provided.

**Highlights**

The 2008 Census of State and Local Law Enforcement showed a dramatic increase in the number of small agencies across the nation that have fewer than 50 sworn officers (15,498 agencies, up from 11,372 in 2004). They account for 86 percent of the 17,985 agencies in the United States, and 49 percent (8,796) have fewer than 10 sworn officers. SRTB-RC serves these small agencies along with rural, tribal and border agencies. Traditionally underserved and underrepresented, these agencies often have large geographical areas to cover with very limited resources. SRTB-RC works with them to ensure they are aware of the resources available from the U.S. Department of Justice and other federal agencies.

SRTB-RC hosted the 13th Technology Institute for Rural Law Enforcement (RLETI) in 2012, with a total of 28 participants from 19 states. There are currently 393 alumni from the various
RLETI sessions. The RLETI provides law enforcement administrators or command staff with the opportunity to present to approximately 30 of their peers on technology-related issues faced by their departments. These issues may have been resolved, planned for resolution or in need of resolution. NIJ funds all expenses for the attendees.

Other highlights include:

- Attended the 2012 Consumer Electronics Show to view new and emerging technologies that could have an impact on the law enforcement community. An extensive report on this review can be downloaded from https://www.justnet.org/pdf/Consumer-Electronics-Show-2012.pdf.

- Attended, exhibited at and/or presented at 33 conferences, including the International Association of Chiefs of Police, National Sheriffs’ Association, International Law Enforcement Educators and Trainers’ Association, FBI National Academy Associates, State Association of Chiefs of Police Smaller Agency Committee and National Native American Law Enforcement Association.

- Distributed 18,308 informational CDs/DVDs. Topics included less-lethal technologies, school safety planning tools, critical incident response training and crime scene processing tool (in beta version).

- Helped coordinate the annual LESO training conference in Seattle, Wash., for state coordinators. Approximately 200 people from across the United States, Guam and the Virgin Islands attended.

- Conducted 34 onsite visits with small, rural, tribal and border law enforcement agencies across the country. At each agency, the sheriff or chief received a briefing on services available to the agency through SRTB-RC and other NLECTC centers.

- Continued to conduct demonstrations for agencies, in a regional format in different locations across the country, of a low-cost use-of-force simulation system. More than 230 officers received a chance to use and evaluate the system, including those in attendance at the RLETI.
Launched a program to provide small agencies that do not have a web presence with a basic website. Once the site is up, the agency adds and updates content. Currently, three agency sites have been developed and placed online, with five more in various stages of completion. An article on this project appeared in the summer 2012 issue of *TechBeat*.

In July 2011, SRTB-RC was given the responsibility for managing and directing the Law Enforcement Aviation Technology Program (LEATP). Since that time, the LEATP has been streamlined with online reporting, making it simpler for agencies to report on their use of aircraft during day-to-day operations. SRTB also successfully assisted the Somerset (Ky.) Police Department in acquiring an Auto-Gyro Calidus Gyroplane. Somerset now has the second certified gyroplane law enforcement flight instructor in the country. For more details about this program, see the chapter on LEATP in this report.

For more information on the Small, Rural, Tribal and Border Regional Center, contact Program Manager Mike O’Shea at (202) 305-7954 or by email at michael.oshea@usdoj.gov.
The National Institute of Justice’s (NIJ’s) Law Enforcement Aviation Technology Program (LEATP), operated by the Small, Rural, Tribal and Border Regional Center (SRTB-RC), completed a multiphase project in conjunction with the U.S. Department of Defense (DoD), Joint Integrated Air & Missile Defense Organization (JIAMDO), during 2012.

The project consisted of three phases: a Pre-Military Utility Assessment (PMUA), an MUA and a joint DoD operation called Black Dart. LEATP participated in this project as a result of JIAMDO’s request to NIJ to fly small manned aircraft not currently a part of DoD’s aircraft inventory in support of a series of national security enhancement projects designed to enhance the military’s ability to track and intercept airborne threats. The flights supporting this project occurred near the Washington, D.C., metropolitan area and other sensitive areas.

“Overall, the NIJ-funded aircraft that operated in support of this project helped to provide a capability that the military could not otherwise replicate, therefore making the Aviation Program’s participation...
worthwhile for both DoD and national security, since the aircraft assisted with fine-tuning national defense equipment and with prototype threat identification systems,” said NIJ Law Enforcement Program Manager Mike O’Shea. “We were proud to have been selected to be a part of this effort.”

The program operated two gyroplanes and a variety of fixed-wing aircraft over a five-week period during the project.

Note: Many components of this project are of a classified nature and therefore specific results cannot be shared. If you have questions about the project, contact NIJ Law Enforcement Aviation Technology Program Manager Mike O’Shea at (202) 305-7954 or by email at michael.oshea@usdoj.gov.

**Highlights**

NIJ began evaluating low-cost aviation assets for law enforcement in fall 2005 and formally created LEATP in 2006. The program’s goal is to initially evaluate low-cost aviation options for functionality and safety, then place them with an agency to obtain hard data on use.

Program highlights include:

- Ongoing evaluation of 15 aircraft. These aircraft served more than 130 agencies during 2012 by flying 613 missions for a total of approximately 1,026 flight hours. A report is in process.

- Attended several meetings with Federal Aviation Administration (FAA) officials to help streamline the process by which law enforcement unmanned aircraft systems are operated in the national airspace. A common strategy letter has been drafted and is expected to be released by the FAA in early 2013.

- The Tomball (Texas) Police Department displayed its gyroplane at an LEATP exhibit during the International Association of Chiefs of Police Conference in San Diego in October.
Mission activities include:

- In January, the Tomball Police Department used a gyroplane to assist ground units in searching for an Alzheimer's patient missing from a local medical facility. Officers located the patient unharmed and returned him to the facility without incident.

- In February, the Ripon (Calif.) Police Department used a powered parachute to search for a student who was reportedly suicidal. Officers used the aircraft to search several orchards, fields and neighborhoods, eliminating the need to call out additional officers and volunteers. Ground units eventually located the student unharmed.

- In February, the Guilford County (N.C.) Sheriff’s Office flew a 4.2-hour mission in a fixed-wing aircraft to conduct surveillance on a suspect involved in a narcotics investigation. After the suspect left his residence in a vehicle, he was observed traveling to several locations in a nearby city. During this time, the suspect switched vehicles and met with at least one other secondary vehicle before returning to his residence. The ability to conduct surveillance on the suspect without being seen played an invaluable role in the investigation.

- In April, the Aiken County (S.C.) Sheriff’s Office used a fixed-wing aircraft to search for a missing person. Later in the same month, officers used the same aircraft to locate a burglary suspect.

- In April, the Ellis County (Texas) Sheriff’s Office used a fixed-wing aircraft to assist a neighboring agency with locating a suspect who attempted to run over two deputies.

- In June, the Pflugerville (Texas) Police Department obtained two search warrants based on intelligence gathered from the use of a fixed-wing aircraft. The execution of both search warrants revealed hydroponic marijuana-growing operations.

- In June, a gyroplane operated by the Somerset (Ky.) Police Department was first on the scene of a domestic disturbance during which an armed perpetrator tried to gain entry to a second-story balcony. The crew directed responding ground units to the perpetrator as he attempted to escape.
- In June, the Suffolk County (N.Y.) Sheriff’s Office used a fixed-wing aircraft to locate a vessel flying the flag of the Cayman Islands that was operating in the coastal waters of Suffolk County. Officers from a marine unit boarded the vessel and cited its crew for failing to register its arrival.

- In July, the Aiken County Sheriff’s Office used a fixed-wing aircraft to locate a suicidal man in a wooded area. On hearing the aircraft circling overhead, the man came out of the woods and told ground units he was surprised that anyone cared enough about him to use an aircraft to search for him.

- In August, the Bonner County (Idaho) Sheriff’s Office used a fixed-wing aircraft to locate an 88-year-old Alzheimer’s patient missing from her caregiver’s home. After 90 minutes of searching, the aircrew located the lost woman and directed ground units to her location. She was dehydrated and fatigued but uninjured, and stated she had lost her sense of direction and intended to keep walking until someone found her.

- In August, the Ellis County Sheriff’s Office used a fixed-wing aircraft to locate a truck leaving the scene of a burglary. Officers observed the truck as it drove to another residence and directed ground units to follow the truck; they discovered that the suspects had stolen $2,600 worth of copper from the residence. Use of the aircraft directly resulted in four arrests.

- In August, the Ripon Police Department used a powered parachute to locate a missing person in the Stanislaus River. The pilot directed emergency medical personnel to the scene after fire department boats located the missing person.

- In September, the Aiken County Sheriff’s Office used a fixed-wing aircraft to search for a missing Alzheimer’s patient.

- In September, the Guilford County Sheriff’s Office used a fixed-wing aircraft to search for a missing 9-year-old child.

- In October, the Aiken County Sheriff’s Office’s fixed-wing aircraft, on routine patrol, located an uncontrolled wildfire and directed fire personnel to the scene. Without the aircraft, the fire might have gone undiscovered for hours.
In November, the Guilford County Sheriff’s Office used a fixed-wing aircraft to respond to a burglary in progress. After a K9 team finished searching the area, a crewmember in the aircraft spotted what appeared to be abandoned clothing in a wooded area and directed the K9 team to the location. On arrival in the area, the K9 team located the burglary suspect and took him into custody without incident.

In December, after almost a year-long investigation, officers arrested several suspects in the Brookhaven, N.Y., area. The Suffolk County Sheriff’s Office used a fixed-wing aircraft to conduct many hours of surveillance on several suspects after ground units were unsuccessful. The intelligence gathered from the aerial surveillance led to the issuance of several search warrants. Execution of these warrants led to at least six arrests and the recovery of large amounts of cash and drugs by the end of 2012. Sources told the aviation crew the search warrants would have been impossible to obtain without the intelligence gathered by the aircrews.
Helping Small, Scattered Agencies

Alaska’s criminal justice professionals, located in the country’s largest state in terms of land area, serve nearly 700,000 residents. They face unique challenges to their crime prevention, investigation and rehabilitation efforts. The Alaska Regional Center ensured that the agencies scattered widely across this remote area had access to the services of the National Law Enforcement and Corrections Technology Center (NLECTC) System. The Center closed on Sept. 30, 2012.

Highlighted activities include:

- Disseminated electronic event announcements regarding law enforcement-related training and events to a statewide audience.

- Attended meetings of local chapters of the Alaska Peace Officers Association.

- Helped identify surplus property items formerly used by the Center and facilitated the transfer of these items from the National Institute of Justice to local law enforcement agencies.
- Provided technical support by telephone to the Cordova Police Department regarding radio issues experienced due to a record snowfall and a resulting citywide declaration of emergency conditions.

- Met with communications staff from the Anchorage and Wasilla police departments to expand outreach regarding an ongoing project to implement a public safety broadband data system.

- Networked with representatives of AT&T, Procom Communications and REVEL Communications to develop ideas and ways to expand outreach in support of a narrowbanding mandate facing many of Alaska’s smaller agencies.

- Provided assistance with an ongoing statewide project to create the Alaska Uniform Table of Offenses. This project requires collaborative assistance from all interested agencies. The Alaska Regional Center became involved in the project through its membership in the Multi Agency Justice Integration Consortium.

- Provided information to Matanuska-Susitna Borough regarding consolidations of communications centers and available consultants qualified to conduct a borough-wide study to evaluate the feasibility of reducing costs and improving efficiency by combining several smaller communications centers.
Without comments and feedback from the field, the National Institute of Justice (NIJ) and the centers that make up the National Law Enforcement and Corrections Technology Center (NLECTC) System would have no way of knowing if they are “on the right track” with the research, evaluation, standards development and other projects that are moving forward on a daily basis. Staff at all of the component centers do not wait for the law enforcement and corrections communities to let them know if they are on track; they go out and actively engage the community through outreach visits and participation in numerous conferences.

Most of the system centers took on that active engagement role at the International Association of Chiefs of Police (IACP) Annual Conference and Exposition, held in San Diego from Sept. 29 through Oct. 2, 2012. A total of 14,223 attendees represented 93 countries. The benefit from NIJ and NLECTC System participation is mutual: Center System staff members have the opportunity to share information and resources and, at the same time, learn about what is taking place in the field from
thousands of conference attendees in the exhibit hall. Leading the NLECTC System presence at the event, NLECTC-National; the States, Major Cities and Counties (SMCC) Regional Center; the Small, Rural, Tribal and Border Regional Center (SRTB-RC) and the NIJ Law Enforcement Aviation Technology Program put together a cooperative effort in a single exhibit booth, bringing the concept of the NLECTC System as a “one-stop shop” to life.

“Of all the shows I have been involved with, this was by far the best. The location of the booth...and the combined setup worked as smoothly as any I have seen,” says Danny Ball, SRTB-RC director. “This truly gave the visitors to the booth an impression of professionalism and that NLECTC was a cohesive group that supported each other.”

“Having the joint booth space worked perfectly and everyone interfaced extremely well throughout the event and during setup/take-down. In my opinion, it was the most painless event of this size that we’ve done and I think it is the only way to do events of this nature in the future,” says Tod Depp, SRTB-RC project manager.

Staff from the NLECTC System also attended the Annual NIJ Conference, held in Arlington, Va., from June 20-22, 2012, which was titled “Turning to Science: Enhancing Justice, Improving Safety, Reducing Costs.” This conference is designed primarily for academics and researchers who present on various NIJ-funded projects, and it gives NLECTC staff an opportunity to learn about projects taking place outside the Center System. Learning about these research and evaluation efforts helps inform and broaden NLECTC System outreach efforts; in turn, attendees learn about standards and testing efforts as well as the research and evaluation taking place at the various Centers of Excellence (CoEs). Staff members from many of the NLECTC System centers also participate in presentations about their own projects.

<table>
<thead>
<tr>
<th>EXHIBIT 5. NLECTC-NATIONAL/REGIONAL CENTERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attended 60 conferences</td>
</tr>
<tr>
<td>Contacted 5,250 attendees</td>
</tr>
<tr>
<td>Distributed 22,428 pubs</td>
</tr>
<tr>
<td>Collected 659 subscriptions to TechBeat/JUSTNET News</td>
</tr>
</tbody>
</table>
It takes teamwork to cultivate a beneficial agency relationship, and outreach plays a key role on that team. For example, the National Law Enforcement and Corrections Technology Center (NLECTC) has an ongoing partnership with Capt. Todd Ostrowski of the Niagara County (N.Y.) Sheriff’s Office. JUSTNET became the first player involved in creating the relationship when Ostrowski visited the website and downloaded the application to participate in the Spring 2012 Technology Institute for Law Enforcement (LETI). Next, States, Major Cities and Counties Regional Center Outreach Coordinator Bruce Blair assisted the National Institute of Justice (NIJ) with the application review process, which included Ostrowski’s selection as a participant. During the summer, Blair met Niagara County Sheriff James Voutour at the National Sheriffs’ Association conference, where he congratulated Voutour on Ostrowski’s selection and told him that the NLECTC System looked forward to having more interactions with Niagara County in the future. Based on Voutour’s statement that Niagara County was willing to work with NLECTC, Blair suggested that Repeat Offender Tracking In Niagara, or ROTIN, (a program that tracks individual bookings and provides alerts related to individuals who have been booked more than five times in a three-year period) would make a good topic for a TechBeat article. As a result, the NLECTC System editorial staff was added to the relationship-building team (See “Sophisticated System Tracks Repeat Offenders,” www.justnet.org/pdf/Sophisticated_System.pdf; see also “Crime Intelligence System” in the Technology Institutes chapter, p. 48). After the article appeared in the Winter 2013 issue of TechBeat (https://www.justnet.org/InteractiveTechBeat/), Ostrowski wrote to thank the NLECTC System for including the article in this issue.

“It was a great privilege to be selected as a participant to attend the technology institute,” Ostrowski says. “The NLECTC staff are among the most professional and dedicated group I have encountered in relation to improving law enforcement technology for the future. In a time when interoperability and integration are key components to the law enforcement mission, NLECTC and NIJ hit the nail on the head. Law enforcement agencies overwhelmingly share similar technology issues across the country and abroad. NLECTC is the conduit that brings us all together to help define such issues from a global perspective while sharing best practices on how to manage them at a local level. I am humbled by this experience and have met a lot of great people through this partnership.”

Blair has also recommended that Ostrowski return to the Spring 2013 LETI as an alumni presenter. “Our growing partnership with the Niagara County Sheriff’s Office is a perfect example of the way that we can bring multiple resources together to encourage networking and information exchange. From the practitioner’s perspective, this gives them an opportunity to be heard by NIJ, and from NIJ’s perspective, it provides a realistic opportunity to engage the people who rely on the technologies being tested, thus soliciting real-world input on the needs and requirements of the law enforcement community,” Blair says.

**Highlights**

During 2012, the component centers of the NLECTC System attended, exhibited at and presented at more than 90 events. Some were national in scope, some were local; some had thousands of attendees, others had only a few. They also made more than a dozen presentations, educating attendees about the NLECTC System and the services available to them. In turn, these practitioners were asked to inform their colleagues about the NLECTC System. This exchange of information is an important part of raising the level of awareness about the system and establishing relationships that strengthen NLECTC’s network of subject-matter experts in the field.
Providing “Virtually” Everything Agencies Need

During 2012, the National Law Enforcement and Corrections Technology Center (NLECTC) System continued moving its outreach activities into the digital and social media age; it also restructured its approach to trade shows to place more emphasis on audiovisual presentations and less on printed materials, thus realizing considerable cost savings. Visitors to trade shows can take home electronic versions of a wide selection of current publications neatly packaged on a USB drive. In addition, during trade shows staff focus their discussions on JUSTNET, JUSTNET News, Facebook and Twitter, explaining how visitors can obtain the most current information and the latest editions of publications from these electronic sources.

Staff also began reaching out to the criminal justice community with “Virtual Site Visits,” which provide a way to reach more agencies through distance communication and learning. States, Major Cities and Counties Regional Center staff conducted several of these virtual tours late in the year for individuals and agencies, such as Chief Sandra Spagnoli of the San Leandro (Calif.) Police Department and Brody Grusko, policy analyst for strategic initiatives with the Manitoba (Canada) Department of Justice. Chief Spagnoli received help with a Microsoft® PowerPoint briefing for chiefs from the San Francisco Bay Area, took a “tour” of the JUSTNET website, updated her information as a Technology Institute for Law Enforcement alumna and visited the online store. Mr. Grusko also took the JUSTNET tour, which staff tailored toward resources and articles that addressed his specific areas of interest. Staff also pointed out key contacts at other centers and at the National Institute of Justice.

“We believe that outreach is a significant part of the NLECTC System’s mission,” says Lance Miller, NLECTC-National director. “We use these opportunities not only to inform, but also to listen to law enforcement and corrections professionals about the challenges they face, the successes they’ve had and how the NLECTC System can help. These interactions are some of the most important we have in terms of shaping our thinking about what we can do to provide valuable services to those who need them. In these fiscally challenging times, we recognize that funding to support these activities must be used wisely; that’s why we are beginning to integrate technology and the ‘Virtual Site Visits’ into our repertoire, to have another tool that we can use to engage the field.”

Specifically, National and regional center staff actively engaged approximately 5,500 participants; they distributed almost 23,000 publications and other informational products, signed up more than 2,000 subscribers to TechBeat and JUSTNET News and, most importantly, listened to attendees talk about their needs and challenges, and the ways in which NIJ and the NLECTC System can help.

Following are some highlights by month.

January

- Staff attended two national events: Corrections Technology Center of Excellence (CoE) staff participated in the American Correctional Association (ACA) conference held in Phoenix, and SMCC and NLECTC-National staff exhibited at the Shooting, Hunting, Outdoor Trade (SHOT) Show in Las Vegas. The SHOT Show is the world’s premier exposition of
combined firearms, ammunition, law enforcement, cutlery, outdoor apparel, optics and related products and services; attendees come from all 50 states and more than 100 countries.

February

- Three presentations highlighted activities in February: the Alaska Regional Center deputy director presented on NIJ, the NLECTC System and the Alaska Regional Center at the Law Enforcement Management Institute in Anchorage; the Communications Technology CoE director participated on a public safety-related panel on cognitive, intelligent and software-defined radio technology at the International Wireless Communications Expo in Las Vegas; and the SRTB-RC executive director presented on NIJ, the NLECTC System and the SRTB Regional Center at the Kentucky Law Enforcement Council’s quarterly meeting in Louisville.

- Other events included the American Probation and Parole Association Annual Conference in San Diego (Corrections Technology CoE), the American Academy of Forensic Sciences Annual Meeting in Atlanta (Forensic Technology Center of Excellence, or FT CoE), and a quarterly FBI National Academy Partner Day in Quantico, Va. (SMCC).

March

- The SRTB-RC executive director made two presentations on the NLECTC System in March—one at the International Association of Chiefs of Police, State Association of Chiefs of Police Small Agency Committee Meeting in Arlington, Va., and the other at the Central Sierra Police Chiefs Meeting in Lodi, Calif.

- Staff from the FT CoE gave a presentation on Center programs at the Criminal Homicide Investigators Association and California Crime Laboratory Directors Association joint conference in Las Vegas.
April

- The Communications Technology CoE facilitated the annual National 700/800 MHz Regional Planning Committee (RPC) meeting in Tampa. RPC members provide Federal Communications Commission-mandated coordination support for ongoing public safety land mobile radio operations using these tools.

- An FT CoE staff member presented a session about chromatography and mass spectral technologies and methods to an audience of attorneys at the North Carolina Advocates for Justice, Indigent Defense Services Training Meeting in Durham.

- A number of other major meetings took place during the month, including the National Institute of Standards and Technology International Biometric Performance Conference in Gaithersburg, Md. (Sensor, Surveillance, and Biometric Technologies Center of Excellence, or SSBT CoE); two meetings of the Federal Interagency Biometrics Testing Working Group in Arlington, Va. (SSBT CoE); the SPIE Defense, Security, Sensing Conference in Baltimore (SSBT CoE); the International Law Enforcement Educators and Trainers Association Annual Conference in Wheeling, Ill. (SRTB-RC, SMCC); the Government/Security Conference in Washington, D.C. (SMCC); and the quarterly FBI National Academy Partner Day (SMCC).

May

- Corrections Technology CoE staff presented at the New Mexico Gang Task Force Conference in Albuquerque, N.M.; the presentation focused on the use of GPS tracking technology to disrupt gang activities.

- At the Southwestern Association of Toxicologists Meeting in San Antonio, FT CoE staff gave a presentation focused on forensic DB. FT CoE staff also gave a presentation on CoE resources at the Midwestern Association of Crime Laboratory Directors meeting in Columbus, Ohio.

_FBI National Academy Partner Days present potentially the best opportunities around to reach such a large number of “Select” police executives and to develop a relationship early in their leadership experience. It also presents NIJ as an equal partner with many well established and professional groups._

—NLECTC staff
Staff from SRTB-RC presented on the 1033 Surplus Property Program and SRTB-RC programs at the South Dakota Joint Law Enforcement Conference in Deadwood, S.D. The Center also helped coordinate the Law Enforcement Support Office Conference in Seattle.

The SMCC deputy director presented on the mission of the NLECTC System as part of a panel on “Testing and Rapid Tech Insertion for First Responders” at the Security Summit-East in Arlington, Va.


June

The SMCC deputy director gave a presentation on the NLECTC System at a meeting of the Metropolitan Washington Council of Governments Police Technology Subcommittee in Greenbelt, Md.

NLECTC System staff attended and exhibited at a total of 14 events in June. Major events, in addition to the Annual NIJ Conference, included the International Association of Campus Law Enforcement Administrators Conference (SMCC); National Sheriffs’ Association Annual Conference (SRTB-RC, SMCC); International Association of Coroners and Medical Examiners Conference (FT CoE); and Association of Firearm and Tool Mark Examiners Conference (FT CoE).

July

SRTB-RC staff presented on Center services and the federal Surplus Property Program at the Sheriffs’ Association of Texas Conference in Dallas.

Staff from the Corrections Technology CoE participated in two workshops at the American Correctional Association Conference in Denver, promoting the CoE-produced Greening Corrections Technology Guidebook.
SMCC and SRTB-RC conducted a joint exhibit at the FBI National Academy Associates Annual Training Conference in Grapevine, Texas. Other major events included the International Association for Identification (FT CoE) Conference, Society of Forensic Toxicology Annual Meeting in Boston (FT CoE) and School Safety Advocacy Council Annual Conference in Orlando, Fla. (SMCC).

This was one of the most productive NSA conferences in recent years… Many of the attendees expressed a genuine interest in technologies and opportunities that would benefit their agencies.

—SMCC staff

August

The FT CoE hosted the Impression and Pattern Evidence Symposium in Clearwater, Fla., which had an onsite attendance of 340 and an online attendance of 476. The symposium remains available for viewing at https://www.forensiccoe.org.

Staff from the Corrections Technology CoE convened a meeting of the American Probation and Parole Association Technology Committee at that organization’s annual conference.

SMCC staff exhibited at the quarterly FBI National Academy Partner Day in Quantico, Va.

September

NLECTC-National sent Compliance Testing Program (CTP) staff to the National Native American Law Enforcement Association Annual Conference in Las Vegas to assist the NIJ Law Enforcement Program Manager with a presentation on the CTP. At the same event, SRTB-RC presented on the federal Surplus Property Program and SRTB services.

The Weapons and Protective Systems Technology Center of Excellence and the SMCC Regional Center participated in the National Tactical Officers Association Annual Conference in Seattle, and the SSBT CoE attended the Biometrics Consortium Conference in Tampa.
October

■ A member of the Communications Technology CoE team moderated a telecom meeting of the Wireless Innovation Forum Public Safety Interest Group as part of the IEEE Dynamic Spectrum Access Networks Conference in Bellevue, Wash., and also coordinated speakers for the Wireless Innovation Forum Workshop on Public Safety and Long Term Evolution.

■ SMCC staff exhibited at the Coalition of Urban and Metropolitan Universities Conference in Chattanooga, Tenn., and at the Emergency Medical Services World/Enforcement Expo in New Orleans.

*My department recently adopted the 10-hour shift for officers. We did this primarily based on the recent NIJ study, The Shift Length Experiment, highlighted in the brochure, “Protecting our Protectors.”*

—Adam Hefley, Lawrence (Kansas) Police Department, when visiting the exhibit at the National Tactical Officers Association Conference.
The National Institute of Justice (NIJ) Technology Institutes serve as a sounding board for what is most important to law enforcement and corrections professionals in the field. The gatherings allow practitioners to network with peers and exchange valuable information on real-world, technology-related challenges and solutions.

The institutes, which are sponsored through the National Law Enforcement and Corrections Technology Center (NLECTC) System, are designed to serve the interests of law enforcement officers from medium and large agencies, small and rural agencies, and corrections personnel. The inclusion of speakers from other countries provides an international perspective on technology issues. In 2012, 118 practitioners attended four separate institutes. Participants came from 35 U.S. states and nine foreign countries.

During the institutes, participants provide a presentation on a technology challenge that their agency has solved or a technology challenge...
Inmates Provide Anonymous Tips With FaceCrook
Inspector Mickey R.F. Bradley
Bergen County (N.J.) Sheriff’s Office

FaceCrook is a social media application designed to give jail inmates online access to legal resources and publications; new elements have been incorporated in response to the popularity of the initial offering. Inmates can now share with administration officials confidential information about crimes, suspects, witnesses and wanted individuals. In addition, elements of the application provide access to a website to identify wanted individuals who live in the community. FaceCrook also allows citizens to “text a tip” to law enforcement officials about suspicious persons or activities.

FaceCrook has both public-facing and facility-accessible capabilities. The public-facing side includes access to information on outstanding warrants tied to a Google Maps app in addition to its anonymous tip feature, and inmates have the ability to provide anonymous tips via their secure computer and telephone access.

Inspector Mickey Bradley explains that inmates have limited computer access in the law library or via system-controlled laptop time, and with FaceCrook, “What we’re trying to do is leverage that access to our advantage by telling them they can drop us a line and share information anonymously. They have a wealth of knowledge about crimes taking place both outside and inside the jail.”

Inmates can also access the system by pressing a specific option on a county-provided telephone. Bergen County started out with a beta test in two living areas and then expanded it to the 900 inmates and 22 living areas in the system. On the first day of full system use, administrators received more than a dozen tips.

The public-facing side also is popular. “It’s like deputizing a million people in Bergen County to help us out,” Bradley says, explaining that the public can view an online “push-pin” map and find out about fugitives who live, or have lived, nearby, and go on to report sightings. Users can search by name, street address, town and ZIP code and, through a link to the sheriff’s office records database, learn about individuals with outstanding warrants generated in Bergen County.

Crime Intelligence System
Capt. Todd T. Ostrowski
Niagara County (N.Y.) Sheriff’s Office

The Crime Intelligence System (CIS) distributes and communicates information throughout the surrounding communities, providing law enforcement with much-needed information about crimes and offenders in their area of responsibility. CIS is near-real time in nature and is one of the key tools in Niagara County’s information-led policing strategy. CIS
supplements Repeat Offender Tracking in Niagara (ROTIN), an intelligence application designed to reduce crime by tracking wanted repeat offenders throughout Niagara County and the surrounding region.

Based on Microsoft platforms such as Excel and Visual Studio, ROTIN helps communicate pertinent information about chronic offenders to officers to help them with their investigations. ROTIN pulls from computer-aided dispatch, jail records and field reports.

“It’s an officer-awareness tool aimed at promoting intelligence development and officer safety,” says Capt. Todd Ostrowski. “The idea came from the knowledge that a small percentage of individuals commit the majority of crimes; usually something along the lines of 6 percent of criminals commit 60 percent of crimes. If we could keep them locked up, we might reduce crime rates by as much as 60 percent. It also makes us aware that these individuals shouldn’t be housed with the rest of the population when they are incarcerated.”

ROTIN is part of a more complex CIS that includes information on calls for service (in the past 24 hours and older), currently housed inmates, recent inmate releases, active warrants and more. Ostrowski says anyone working in the agency can now query various types of information related to crimes and offenders.

California Prisons Aim to Disconnect Unwanted Calls

Tim Vice, California Department of Corrections and Rehabilitation

The California Department of Corrections and Rehabilitation (CDCR) has an ambitious plan to stop contraband cellphone usage in its facilities. Operation Disconnect employs airport-style security on the outer perimeter, increases spontaneous searches, uses more sniffer dogs and uses managed access technology to intercept calls.

Managed access allows only authorized phones to make calls. The agency launched a managed access pilot project in 2011 in two facilities, and in the first 11 days of the pilot project, the managed access system blocked 24,190 call attempts from 2,593 unauthorized phones.

“This shows we have a huge problem out there,” says Tim Vice, CDCR cellphone interdiction manager. “We don’t consider this the magic bullet. It is part of CDCR’s multilayer security strategy. It doesn’t locate the actual devices, and they can still use the memory cards in the phones to transfer information even though they’ve been stopped from calling, texting and accessing the Internet. However, the value of a phone goes down greatly if you can’t get outside access, and that makes smuggling them into the institution less attractive.”

Following the successful pilot, CDCR awarded a contract to phase in implementation of managed access throughout the state.
their agency currently faces. At the end of each institute, participants are asked to complete a survey to evaluate the institute's technological usefulness and to suggest ways to enhance future meetings. NIJ can use the evaluation comments and participant presentations to help inform its research, development, testing and evaluation process.

Participants are also asked to identify their most important law enforcement technology need and the type of technology that would solve the problem. Information sharing across jurisdictional boundaries ranks high. A number of presentations discuss shared, multiagency projects.

**Technology Institute for Law Enforcement**

NLECTC-National coordinated two Technology Institutes for Law Enforcement in 2012. Topics included social media and law enforcement, computer-aided dispatch/records management systems, major city fusion and operational command centers, information-led resource deployment projects, the virtual desktop environment, developing innovative camera surveillance systems, gunshot detection technology, officer-worn cameras and mobile fingerprint readers. The institutes took place in June and September in Annapolis, Md. During an afternoon at the Bay Bridge Airport in Stevensville, Md., participants observed (and in some cases flew in) various light sport aircraft and a gyroplane that are part of the NIJ Law Enforcement Aviation Technology Program, and several NIJ Centers of Excellence (CoEs) showcased their technology research projects.

“The main thing I learned is that we are not alone in our strategies with technologies, and there are a lot more people I can call for help. Some presentations were more relevant to my agency, of course, but all were interesting and thought provoking.”

“This was an outstanding program. I made a ton of solid contacts from across the country, and now know subject-matter experts in a variety of fields that relate to my agency’s technology initiatives.”

“The presentations were fabulous and very informative. I am privileged to have attended the technology institute and network with a group of chosen professionals. Thank you!”

“The presentations were useful because they were talking about the diversity of application of technology in policing and the problems that may arise in the use of technology.”

—Technology Institute Participants
Technology Institute for Corrections

The Corrections Technology CoE hosted the 2012 Technology Institute for Corrections in Arlington, Va., in August, providing information on institutional and community corrections technology and issues. Topics included a mobile emergency response center, an offender management system, a probation department’s in-house GPS monitoring center, a dangerous offender notification system, electronic security systems, application of digital forensics for supervised offenders, offender management kiosk service systems, fusion center technology, using offender tracking technology as an early intervention tool for youthful offenders, cell phone forensics, an electronic in-cell delivery system for the most dangerous and violent offenders, an electronic field interview reporting system and cell phone interdiction methods.

Technology Institute for Rural Law Enforcement

The Small, Rural, Tribal and Border Regional Center hosted a technology institute for small and rural law enforcement practitioners in October in Annapolis, Md. Topics included implementing an automatic video location system, the proper method of destroying data on devices no longer in service, implementing an automated license plate reader system, a use-of-force simulator for training, use of a wireless mesh network to assist in mobile communication, neighborhood watch web cams and the challenge of implementing new technology.

For more information on NIJ’s law enforcement technology institutes, contact Law Enforcement Program Manager Mike O’Shea at (202) 305-7954 or by email at michael.oshea@usdoj.gov. For more information on the corrections technology institutes, contact Corrections Program Manager Jack Harne at (202) 616-2911 or by email at jack.harne@usdoj.gov.
Evaluation of Brookline Broadband Wireless Project

In 2012, a Communications Technology Center of Excellence (CoE) research team led by an adviser from the National Institute of Justice (NIJ) Office of Research and Evaluation neared completion of an operational evaluation of a public safety wireless broadband project in Brookline, Mass., that could inform development of a nationwide broadband network.

“What is unique about Brookline is this is the type of access envisioned for the nationwide public safety broadband network,” says CoE Director Fred Frantz. “Brookline has had a system in place for several years and they have dedicated law enforcement access. Other jurisdictions might have WiFi hotspots or broadband commercial services; Brookline’s approach was a bit different so it is a good opportunity to analyze performance metrics of the agency. We are analyzing data from before and after installation and determining the overall impact of deploying this wireless broadband capability.”
The National Public Safety Broadband Network (NPSBN) will provide a secure, reliable and dedicated interoperable network for emergency responders to communicate during an emergency. The Brookline project can identify the quantitative impact of broadband wireless data access on agency operations, lessons that will be useful for the nationwide effort. Assessment of the Brookline broadband project can inform functionality and assist in planning for the nationwide network.

The CoE falls under the NIJ Office of Science and Technology; however, the evaluation project is being done in conjunction with the NIJ Office of Research and Evaluation, which has developed the evaluation protocols and is leading the analysis. The CoE is providing resources and technical input.

“The focus is to look at the impact of providing broadband wireless data access to officers basically throughout their jurisdiction of operation,” Frantz explains.

The CoE also coupled the evaluation with a voluntary survey of Brookline officers to assess their perception of how wireless broadband access affects their ability to do their jobs. In 2012, research scientists completed a draft evaluation report, which is currently with the CoE and NIJ for review. Frantz says the data collection and most of the analysis have been completed, but the review process may result in the need for more analysis. Results of the evaluation will be released once the report is final.

“We have some metrics that will help in the planning and setting of expectations for participating in the nationwide public safety broadband network, for example, what to expect in terms of how this will impact the operations of the agencies, the time utilization of officers in the field, call response times and number of calls per officer,” Frantz notes.

Brookline, a suburb of Boston, covers a 6.8-square-mile area with a population of about 60,000. In 2007, Brookline launched its dual 2.4/4.9 GHz broadband network, which provides the municipality with blanket coverage. The 4.9 GHz network is dedicated for public safety use.

“Brookline was one of the first jurisdictions to have dedicated wireless broadband capability,” Frantz says. “The fact that we could get several years of data and that it is a smaller jurisdiction made it a good place to test out research and protocols and the impact of broadband wireless data.”
A next step is to conduct a similar evaluation with other jurisdictions to build on the body of knowledge obtained from the Brookline project.

**Highlights**

In 2012, the Communications Technology CoE, headquartered in Rome, N.Y., along with an integration laboratory in Washington, D.C., (80 M Street) continued its support of the NIJ Communications Technology Portfolio and Technology Operational Evaluation Program. This support included:

- A Technology Integration Pilot Program.
- Additional evaluation activities under the Technology Operational Evaluation Program.
- Outreach to/requirements from law enforcement and criminal justice practitioners.
- Support for frequency planning and management through the Regional Planning Committees (RPCs).
- Collaboration with other agencies and programs to leverage other research, development, test and evaluation activities.
- Support to all NIJ radio frequency portfolio initiatives (including, but not limited to, through-the-wall surveillance, directed energy and bomb squad robot frequencies).

**Technology Operational Evaluation Program**

The CoE expanded the technology operational evaluation program to include evaluation of the following technologies in addition to broadband wireless data access:

- Managed-access technology to counter contraband cell phone use in prisons.
- Over-the-air reprogramming of land mobile radios using broadband wireless data access.
- Technologies to reduce intimate partner violence.
Managed-Access Technology

The CoE continued to work on a technology operational evaluation of managed-access technology to counter the use of contraband cell phones in prisons. Corrections professionals have identified contraband cell phone use as an important issue that has generated significant activity among both legislative and regulatory bodies. Managed-access technology has the potential to address this problem by ensuring that a call is from a legitimate cell phone before handing the call off to a carrier. One such system has been installed and is operational in a corrections facility in Parchman, Miss. The CoE researched the technology baseline and began the technology operational evaluation to assess the impact on the corrections agency.

One particular aspect of the technology installation has been a force-multiplier effect achieved by coupling the managed-access technology with operationally friendly legislation. For example, Mississippi changed legislation that made it illegal for inmates to have any parts of a cell phone rather than a cell phone in its entirety (Miss. Code Ann. § 47-5-193), and implemented policies to expand the revocation of privileges for inmates caught using cell phones. Also, the impact of the managed-access technology appears to have been enhanced by agreements between the Mississippi Department of Corrections and commercial cell phone carriers to allow the carriers to disable a cell phone identified as being used within the Parchman facility.

The CoE conducted a site visit to Parchman to discuss the installation of the managed-access system, data that have been collected at the facility and potential metrics for evaluation.

Over-the-Air Reprogramming via Broadband

The CoE began a technology operational evaluation project to assess the impact of performing over-the-air reprogramming of land mobile radios (LMRs) using a broadband wireless network. Currently, reprogramming of LMRs requires a physical connection or is conducted over the air using a nonstandardized narrowband data channel. A physical connection requires an officer to bring a radio to a radio shop or requires a radio technician to travel to the officer’s location. Either approach expends travel time and, potentially, time waiting for the reprogramming to be completed. Over-the-air options are limited because download times over narrowband channels can be lengthy. Under a competitively awarded grant, NIJ funded a public safety LMR vendor to develop the capability to allow over-the-air reprogramming over a broadband wireless network. This approach has significant potential to reduce cost and time associated with
reprogramming. Although it is anticipated that this capability will eventually be incorporated into NPSBN, the initial evaluation will use WiFi as the broadband wireless access technology.

The CoE worked with the radio vendor and with representatives of the North Carolina State Highway Patrol (NCSHP) to plan evaluation activities. CoE team members attended an initial capability demonstration hosted by NCSHP to assess the technology and begin development of the metrics that will form the basis of the evaluation. Team members also began their literature search.

This evaluation is multifaceted, involving traditional LMR research as well as integrating the unique aspects of conducting a cost-benefit evaluation with respect to operational benefits of the new capability. This review of research will be used to guide the creation of a database for developing measures and extrapolating them throughout different scenarios and time periods.

Technology for Reducing Intimate Partner Violence

The CoE initiated an evaluation focused on technologies that are being employed to reduce occurrences of intimate partner violence. CoE staff participated in a brainstorming session to discuss potential focus areas for the evaluation; it was hosted by NIJ and included representatives from other stakeholder organizations such as the Office on Violence Against Women and the U.S. Department of Health and Human Services. Based on a variety of topics raised in the session, NIJ identified GPS technology for tracking offenders as the technology that will be used for the initial evaluation. The CoE is now working on a baseline technical review as the first step in conducting a technology operational evaluation.

Outreach to/Requirements From Law Enforcement and Criminal Justice Agencies

The CoE continued to work with law enforcement and criminal justice practitioners during 2012. As part of the process of gathering requirements and ensuring that CoE activities are consistent with those requirements, the CoE hosted a Technology Working Group (TWG) meeting in Washington, D.C. Discussion topics included public safety outreach, industry outreach and outreach to federal partners. TWG members also toured the integration facility.
Frequency Planning and Management

The CoE continued to support the RPCs. This support included facilitating and hosting the annual 700 MHz national meeting for RPC members in Tampa, Fla., in April. The CoE also maintained the Computer-Assisted Pre-Coordination Resource and Database (CAPRAD) system, provided technical support services for RPC members, and facilitated and hosted regularly scheduled monthly teleconferences in support of RPC activities.

Outreach to Industry

The CoE participated in numerous conferences and symposia to describe the program and activities to both the law enforcement and research communities, thus encouraging researchers to consider public safety applications in their research. Events included:

- International Wireless Communications Exposition (moderated a panel discussion titled “Can Cognitive Radio Solve Our Spectrum Woes?”).
- NIJ Conference (panel discussion that included NIJ, the CoE and TWG members).
- Association of Public Safety Communications Officials (APCO) International Conference (joint NIJ/CoE presentation titled “Technology Operational Evaluations and Research for Criminal Justice”).
- International Association of Chiefs of Police Information and Communications Technology Committee (joint NIJ/CoE presentation titled “Technology Innovation, Sharing and Evaluation”).
- American Society of Criminology (ASC) annual Conference (two presentations titled “Implementing Police Mobile Broadband: An Operational Evaluation” and “The Role of Collaborative Governance and Technology Operational Evaluations in Lean Economic Times”).
- Academy of Criminal Justice Sciences (ACJS) Annual Conference (presentation titled “Sustainable Connectivity: A Business Model Case Study for Police Mobile Broadband”), which led to a subsequent formal invitation and discussion at ACJS’s Featured Roundtable on Sustainable Technology.

The CoE also continued to chair the Wireless Innovation Forum Public Safety Special Interest Group (PSSIG) activities. The PSSIG brings together law enforcement practitioners, public safety vendors, researchers and regulators to consider how to develop and deploy wireless communications technology to benefit public safety. Through weekly teleconferences, the PSSIG continued work on assessing the state of cognitive radio technology related to a number of functional capabilities that will benefit public safety (based on previously published PSSIG cases). The PSSIG also submitted a comment highlighting several previous studies in response to the National Telecommunications and Information Administration (NTIA) Notice of Inquiry on the FirstNet Conceptual Architecture.

Other Engagement With Partners

CoE outreach to federal partners included supporting the Wireless Spectrum Research and Development (WSRD) Senior Steering Group, which was formed in 2010 to coordinate spectrum-related research and development activities across the federal government. CoE staff assisted in the planning of two workshops held in 2012; they also moderated sessions in each workshop that brought together key researchers in the field of spectrum sharing and cognitive radio. The outcome of the January workshop was a set of recommendations for national-level testing of advanced technologies for spectrum sharing and dynamic spectrum access; the outcome of the July workshop was a research and development agenda for government investment in developing spectrum sharing/dynamic spectrum sharing technologies.

A major event in public safety communication in 2012 was the passage of the Middle Class Tax Relief Act which, in addition to many other features, allocated an additional 10 MHz spectrum (the “D block”) for dedicated public safety broadband use and created a NPSBN with a 15-member Board, the FirstNet Authority (FirstNet). The CoE continued several activities in support of the Associate Attorney General’s Office with respect to FirstNet:

- Participated in the 700 MHz Early Builder Advisory Council (which evolved from the Broadband Waiver City Waiver Recipient/Operational Advisory Committee) meetings
and teleconferences held weekly throughout the year. (Waiver recipients received authority to begin planning the buildout of public safety 700 MHz broadband data systems.)

- Participated in the development of the Public Safety Broadband High-Level Launch Requirements Statement of Requirements for FirstNet Consideration, published by the National Public Safety Telecommunications Council (NPSTC).
Participated in related Public Safety Communications Research (PSCR) events associated with Long Term Evolution wireless technology testing, standards adoption/modification and early adopter deployment planning in support of the public safety broadband network. The PSCR program, operated by the Institute for Telecommunications Sciences, conducts research, development, testing and evaluation to foster nationwide communications
interoperability. CoE engagement ensures the flow of information between the programs and the Associate Attorney General’s Office.

- Provided the U.S. Department of Justice with a weekly compendium of key developments in public safety communications.

For more information on the Communications Technology Center of Excellence, contact Program Manager Joe Heaps at (202) 305-1554 or by email at joseph.heaps@usdoj.gov.
Offender Tracking System Standard Nears Completion

Offender Tracking System (OTS) technology has emerged as an important tool to assist an agency in the effective management of selected participants in the community. The technology has been applied in many ways, including tracking of sex offenders, close monitoring of higher risk offenders or as a confinement alternative for low-risk offenders. OTS technology is a powerful tool; however, like all technologies it has inherent capabilities and limitations that must be understood and managed. This can be difficult because OTSs are essentially composed of a number of complex technologies working together. Additionally, it can be challenging to integrate the technology into an effective supervision program.

To address the concerns expressed above, the National Institute of Justice (NIJ) launched a Special Technical Committee (STC) (see more about the STC process on p. 13) in October 2009 to create a standard, certification program documentation and a user’s guide (Selection and
Application Guide, or SAG) related to OTSs. Based on a high-priority need identified by the NIJ Community Corrections Technology Working Group in 2005, the project brought together a carefully vetted group of practitioners and technical experts; NIJ and the Corrections Technology Center of Excellence (CoE) provided management support.

Currently, there is no performance-based testing and certification program for OTS technology. Agencies must rely primarily on the manufacturer to fully explain equipment and they are often not given complete information because there is an inherent conflict in describing limitations. The field requires an objective resource that has established the limitations and specific operating capability of OTSs.

“Because no performance-based testing and certification program currently exists, the field has no available qualified resource to make decisions on acquiring OTS technology,” says Jack Harne, NIJ Corrections program manager. NIJ tasked the STC with developing an objective standard for OTS devices with requirements that can be accurately measured through a testing program and documenting how to establish a conformity assessment program for monitoring compliance with the standard. The SAG provides the necessary information for using these devices in the field.

After three years of independent and small-group work behind the scenes, and 18 face-to-face STC working meetings, the group has completed Criminal Justice Offender Tracking System Standard (NIJ Standard-1004.00), Criminal Justice Offender Tracking System Certification Program Requirements (NIJ CR-1004.00) and Selection and Application Guide to Offender Tracking Systems for Criminal Justice Professionals (NIJ Guide 1004.00).

In the near future, these documents will go through NIJ’s administrative review and publication process; once they have been published and a testing program begins, certified OTSs will be available approximately 18 months later.

“This standard specifies the minimum performance requirements and defines the methods for testing OTSs. The goal is to provide criminal justice personnel with the information they need to make better procurement decisions,” says Joe Russo, Corrections Technology CoE director. “The entire process is designed to provide the end user with a greater degree of confidence that the system they procure will work as intended.”
The standard addresses both one-piece and two-piece devices, with some distinct test methods and requirements for each, and includes requirements related to form and fit as well as performance. The detailed information on labeling, as well as definitions and reference materials, may also prove valuable to criminal justice agencies. The conformity assessment documentation addresses accreditation requirements for certification bodies to help ensure consistent application of the standard, establish uniformity in the certification body accreditation process and provide transparent criteria for the operation of certification programs and accreditation of product certification bodies. The SAG provides guidance concerning the functionality, procurement, selection, use and maintenance of OTSs; its primary audience includes criminal justice officials, departmental and/or governmental technology managers, and system purchasers.

It is anticipated that the documents will be released during 2013. On their release, they will be available for download from JUSTNET, the website of the NLECTC System; promotional efforts through Facebook, Twitter and JUSTNET News will announce their availability.

**Highlights**

The Corrections Technology CoE serves as the authoritative resource in the National Law Enforcement and Corrections Technology Center (NLECTC) System for both practitioners and developers with respect to technologies that support both institutional and community corrections. The Center is able to leverage a wide array of the multidisciplinary research units of its host agency, the University of Denver, to further its mission.

The CoE helps transition technology from the laboratory into use by first adopters in the corrections community. In 2012, the CoE supported NIJ’s research, development, testing and evaluation (RDT&E) activities as follows:

- Coordinated the distribution of Field Search software. In 2012, criminal justice agencies submitted 870 requests for the software, which was downloaded 1,972 times. Criminal justice agencies from several other countries also requested the software. As of December 31, the Corrections Technology CoE has received a total of 5,737 requests and the software has been downloaded 10,868 times (since its launch). Field Search has been instrumental in supporting a number of arrests and convictions in child pornography cases.
Conducted two Certified Field Search Instructor (CFSI) training sessions in Denver. As a result of this training, 27 additional persons from 13 states and the United Kingdom qualified as CFSIs. The 88 total CFSIs represent 29 states and two foreign countries. In 2012, CFSIs trained 704 criminal justice personnel in the use of Field Search.

Updated Field Search for Windows. Version 4.0 provides users with improved overall speed and report functionality and the following new features:

- Addition of a registry editor tool.
- Enhanced media file support.
- Ability to capture browser history from Google Chrome.
- Configurable GUI that can be displayed in foreign languages.

Managed the Electronic Monitoring Resource Center, an online resource containing material related to electronic monitoring of offenders in the community. In 2012, 88 new users registered for the site and 59 new documents were added. The site currently has 961 registered users and 534 documents, which include vendor lists, sample procurement documents, evaluations, reports and news articles. Plans are underway to expand the resource center to include content on all types of correctional technology.

Responded to 63 requests for technical assistance, including extensive technical assistance to the Orleans Parish (La.) Sheriff’s Office. The parish’s Electronic Monitoring Program had been tracking a juvenile offender who committed a series of high-profile crimes, and the situation attracted significant media attention. The sheriff requested the assistance of the CoE in addressing issues that needed to be corrected. CoE staff provided an oral report to the sheriff, his program deputies and a concerned city councilman, and then provided a written draft report to the sheriff in November. (Release of this report is pending official NIJ review and approval).

Presented at a number of conferences, including events sponsored by the American Correctional Association (ACA) and the New Mexico Gang Task Force.
Participated virtually in several activities:

— Presented a webinar for the American Probation and Parole Association (APPA) and the National Reentry Resource Center; the webinar focused on the variety of technologies used in community corrections.

— Presented a webinar for the Center for Sex Offender Management on a project in support of a grant from the U.S. Department of Justice’s Office of Sex Offender Sentencing, Monitoring, Apprehending, Registering, and Tracking. The webinar focused on the use of electronic monitoring technology to supervise sex offenders in the community.

— Participated in an interview with DC Public Radio on corrections technology.

Supported professional associations such as APPA and ACA, primarily through participation with their respective technology committees.

Contributed content for articles appearing in professional journals, including TechBeat, the Journal of Offender Monitoring and Perspectives and APPA’s journal.

Facilitated the 2012 Technology Institute for Corrections in Arlington, Va., on August 7-10. A total of 28 practitioners from across the country attended the Institute. In addition to practitioner presentations, guest presenters spoke on NIJ-sponsored projects. Participant surveys indicated that the Institute was very beneficial and they enjoyed the experience.

Managed the Institutional Corrections Technology Working Group (TWG) and the Community Corrections TWG; the CoE compiled and analyzed practitioners’ technology requirements and forwarded them to NIJ to inform its RDT&E process.

Supported the Federal Cell Phone Working Group on the issue of contraband cell phone use in correctional facilities.

Published a monthly electronic newsletter that provides information on new developments in corrections technology. The newsletter has more than 4,400 subscribers.
Published *Greening Corrections Technology Guidebook*, which was developed in 2011 (see “Taking the ‘Green Way’ to Reducing Costs and Increasing Efficiency” in the 2011 NLECTC System Annual Report, p. 73). This guidebook provides correctional administrators with a comprehensive view of sustainability-oriented green technologies. Published in March, the document had been downloaded more than 4,400 times as of December 31.

For more information on the Corrections Technology Center of Excellence, contact Program Manager Jack Harne at (202) 616-2911 or by email at jack.harne@usdoj.gov.
A New Beginning

A change of hands and philosophy was the major milestone for the Forensic Technology Center of Excellence (FT CoE) in 2012 as a new contract was awarded to the RTI International Center for Forensic Sciences (RTI) in North Carolina. Using a blend of technical, administrative and policy expertise in forensic science, the team at RTI began the critical process of refocusing the center on key priorities that fulfill its mission and purpose.

During 2012, RTI evaluated the FT CoE’s past performance and took its first steps toward building a new future for the Center. The National Institute of Justice (NIJ) appointed a new program manager, Gerry LaPorte, who continued to improve standards of accountability and to enhance the Center’s efficiency and credibility.

Dr. Michael Baylor serves as the Center’s director. His extensive background in forensic science includes experience as the director of three U.S. Department of Defense toxicology laboratories. “We have a clear sense of urgency to perform,” he explains. “Our business must be conducted with the same degree of discipline and professionalism required
of the forensic practitioners we serve. We feel entrusted with a special responsibility to support a community that has a profound impact on the effectiveness and fairness of our entire criminal justice system.”

**A New Philosophy**

Efficiency and reliability are the watchwords in forensic science today. The application of new technologies and best practices only has value if it improves the performance of forensic science laboratories and their employees. In this regard, RTI will drive the FT CoE’s future progress.

“We have the experience and expertise to recognize that technology and methodology don’t exist in a vacuum,” says Beth Greene, former president of the American Society of Crime Laboratory Directors and one of the newest members of the RTI forensics team. “They are interwoven with a laboratory’s human, intellectual and fiscal resource systems, which means that all must be included in any effort to improve a laboratory’s effectiveness. You can’t just place technology and best practices into a lab and expect them to succeed without the right strategy.”

In keeping with this philosophy, RTI recruited and hired the former director of the Michigan State Police laboratory system, John Collins, who is also credentialed in human resource management. According to Collins, the right approach for transitioning new technology and best practices into forensic science laboratories allows new efficiencies to carry across multiple laboratory units at once.

“We all know what a priority DNA backlogs are in the United States. But if you develop efficiencies in drug testing, for example, you create liquidity in the laboratory’s workforce that allows human resources to be assigned to other areas of the lab,” Collins says. “We are moving away from the belief that resources are segregated by specialty. Supporting one part of the laboratory helps all of the others.”

The organizational stability of laboratories and their positioning to accept new innovations lies at the heart of RTI’s approach to supporting forensic science laboratories. Because the
expertise of laboratory employees and managers is the predominant factor in these efforts, RTI anticipates that its distance learning systems will revolutionize how opportunities for professional development are delivered to practitioners in the field at a lower cost.

**Highlights**

Fiscal year 2012 was marked by the Center’s successful transition to RTI International. Highlighted activities include:

- Hosted the 2012 Impression and Pattern Evidence Symposium (IPES) in Clearwater, Fla.; 340 scientific, legal and investigative professionals from the United States participated in this event. In addition, nearly 500 virtual attendees representing 15 countries joined the symposium online through RTI's Adobe Connect platform. Virtual attendees had the opportunity to provide comments and ask questions throughout the event.

- Launched a comprehensive assessment of NIJ’s past research and development portfolio to identify assets that have value and may warrant either additional research or transition support. This retrospective assessment measures the technology transfer results of past awards to help plan future strategies.

- Interacted with specific partners to identify technologies requiring evaluation or transitioning efforts. The FT CoE provided direct support to the following practitioners and technologies, among others:
  - University of North Texas Health Science Center—Evaluation of next-generation sequencing technologies for forensic and missing persons casework.
  - Virginia Commonwealth University—Technology transfer workshop on 2D and 3D crime scene scanning technologies.

“It was a great conference. I never thought that, by attending online, I could have the amount of interaction, communication and hands-on experience that I got during these presentations. Sharing the posters and documentation with the online community was very thoughtful as well.”

—2012 IPES attendee

“It was incredibly exciting to feel the electricity coming from both the onsite attendees and those who connected online. Now that we have the event archived at our forensiced.org website, thousands more can benefit from the content long after the event.”

—Dr. Peter Stout, 2012 IPES moderator
— Alabama Department of Forensic Sciences—Sensofar 3D optical profiler for measurement of bullets and toolmarks.


— West Virginia University—Evaluation of gunshot residue technologies.

— Midwestern Forensic Research Center—Application of magneto-optical sensors for digital evidence.

**Looking Forward to Year Two**

RTI moved quickly to support key technology initiatives. Dr. Jeri Ropero Miller, a senior member of the forensic science team, notes that 2012 was a transition year that will set an aggressive pace for year two. “It takes time for the forensic community to learn all that we have to offer,” she says. “Moving into year two, I think we’ll see a strong acceleration of our progress as we take a look at new innovations for their potential to be put into practice.”

In 2013, as RTI builds on its first-year successes, the FT CoE will accept proposals for technology evaluations and will assess their potential to yield useable and practical technology solutions for the forensic science community. As new innovations become ready for transfer into forensic science laboratories, practitioners in the field will be connected with manufacturers

**AWARD-WINNING KNOWLEDGE TRANSFER**

On Oct. 1, 2012, RTI announced that its Center for Forensic Sciences received the Division 2 Bronze award from *Chief Learning Officer* (http://clomedia.com/about-chief-learning-officer-magazine) in the Global Learning category of its annual Learning in Practice awards. In 2006, RTI began pioneering its web-based learning platform for forensic science professionals; the platform is now a critical part of the FT CoE learning initiatives.

Since the program’s inception, RTI’s training courses have grown in popularity. Today, https://www.forensiced.org has provided training to tens of thousands of forensic and ancillary professionals in all 50 U.S. states and more than 90 other countries.

According to *Chief Learning Officer*, the panel of judges is “composed of industry experts and executives from some of the world’s largest and most-respected companies.”
and researchers in online knowledge transfer workshops that facilitate discussion and planning. The result of these workshops will be practitioners who are better prepared and can more effectively deploy new technology in their casework.

Finally, the FT CoE plans to expand its delivery of solutions that build laboratory reliability, efficiency and productivity for the primary purpose of eliminating and preventing forensic backlogs. The FT CoE will leverage RTI’s wide range of expertise to ensure that all technical,

CUTTING EDGE: EMERGING DRUGS AND ANALOGS

In October 2012, the FT CoE hosted an initial stakeholders’ meeting in Washington, D.C., to assess the current need for standardization and accessibility of spectral data in the forensic community related to emerging drug compounds, their precursors and their metabolites. The group agreed that this need is reaching critical status as the emergence of new drugs appears to be accelerating.

The following organizations were represented at the meeting:

- U.S. Department of Justice.
- NIJ.
- U.S. Drug Enforcement Administration.
- FBI.
- American Society of Crime Laboratory Directors, Research Committee.
- Scientific Working Group for the Analysis of Seized Drugs.
- Scientific Working Group for Forensic Toxicology.
- Southern Association of Forensic Scientists—Forendex.
- American Association of Forensic Scientists, Division of Toxicology.
- Armed Forces Medical Examiners.
- Division of Forensic Sciences Virginia.
- Instrumental Data for Drug Analysis, Georgia Bureau of Investigation.
- National Institute of Standards and Technology.
- National Institute on Drug Abuse (NIDA) Drug Supply Program.
- NIDA Addiction Research.
- DigiLab Software GmbH.
- West Virginia University.
- Cayman Scientific.
- Cerilliant.
- Alltech/Grace Davison Discovery Sciences.
- Wiley.
- Lipomed.
- LGC Forensics.
- Agilent.
- Waters.
- AB Sciex.
- Bruker.
- ACD/Labs.
administrative and policy issues related to new technology are considered. This ensures that the transfer of technology to forensic science practitioners from researchers and manufacturers is as robust and seamless as possible.

For more information on the Forensic Technology Center of Excellence, contact Program Manager Gerald LaPorte at (202) 305-1106 or by email at gerald.laporte@usdoj.gov.
Exploding Myths About Predictive Policing

Predictive Policing: The Role of Crime Forecasting in Law Enforcement Operations, a guidebook written by Information and Geospatial Technologies Center of Excellence (IGT CoE) staff members Walt Perry, Carter Price, Brian McInnis, Susan Smith and Director John Hollywood, attempts to dispel some of the myths associated with predictive policing and present a clearer picture of how predictive policing tools and concepts can best support law enforcement.

IGT CoE staff have presented on predictive policing at numerous events (see sidebar, “Taking to the Road to Dispel Myths”), and more information will become available when the Center’s guidebook is released on JUSTNET in 2013.

Findings noted in the guidebook and presentation include:

- There is a need to refute certain myths about predictive policing, including:
  - *The computer knows the future, and can predict exactly when and where crimes will occur.* The computer can only estimate
the risk of crimes occurring over large areas during fairly long periods of time, and most of those estimates are based simply on where crimes and disorder have been evident in the past.

— *The computer will do everything for the agency. Staff are not necessary.* Humans are needed to do most of the work and thought processes—the computer is only a tool.

— *Only high-powered, expensive computers and software can perform the necessary analysis.* Even departments with only basic tools, such as Microsoft Office, can realize significant benefits.

— *Using predictive policing tools automatically produces major reductions in crime.* Predictions comprise only half of the predictive policing paradigm; the other half consists of taking action on the predictions to interdict crime.

- Data correctness and completeness is key—errors in data can easily produce errors in predictions.

- Assessment and evaluation of predictive policing has been limited to date.

- Civil rights and privacy rights must be considered, especially for predictions related to persons (either who is most likely to commit a crime or who most likely committed recent crimes).

Predictive policing uses computer models, supported by prior crime and environmental data, to anticipate risks of crime and inform actions to prevent crime. It does not accurately pinpoint the time and place of certain crimes before they occur. The “predictions” are typically similar to long-range weather forecasts: “a 10-percent chance of robberies next week in a given precinct.” Law enforcement agencies can use predictive policing techniques to determine better ways to deploy often-limited resources and to deal with problem issues that may lead to crime.

“There are some predictive techniques in use that are very promising. They can provide a department with intelligence on how to best extend its resources and solve crime problems. For example, departments can use computers to search across gang intelligence records and other databases such as DMV records, and sensor records, such as automated license plate
reader (LPR) data or GPS tracking device data—to ‘predict’ the most likely suspects involved in a gang shooting,” Hollywood says.

IGT CoE staff emphasize that making predictions is only the beginning of the process; departments must employ strategies to act on those predictions to reduce crime. Those strategies include enhancing patrol and crime intelligence efforts in areas where risk is predicted to increase; staging interventions tailored to expected type of crime (guides on interventions are available from the Center for Problem Oriented Policing at http://www.popcenter.org and from the Office of Justice Programs at http://www.crimesolutions.gov); and identifying specific problems that generate crime risk and solving these problems (such as working with owners to secure storefronts and ensuring that parking lots have adequate security).

“It’s important that law enforcement agencies use predictions to help them develop a more detailed and tailored understanding of crime in an area, then come up with specific interventions. The focus needs to be on solving specific problems rather than just blindly throwing

**TAKING TO THE ROAD TO DISPEL MYTHS**

Information and Geospatial Technologies Center of Excellence (IGT CoE) staff have taken “Predictive Policing: The Role of Crime Forecasting in Law Enforcement Operations” on the road a number of times. Susan Smith, IGT CoE adjunct policy analyst and president of the International Association of Crime Analysts, has taken the lead in making these presentations, all of which have generated positive feedback.

Smith explains that some types of predictive policing have been around for about 20 years, but the concept has gained much more media attention in recent years: “The traditional response is just add more officers, but the key is basing your strategy on what research says would be effective. Thus, while the technique, the software and the algorithms are important, a well-thought out and implemented response is also a very important focus.”

To some degree, even law enforcement professionals do not have a good understanding of what it means. “A lot of misconceptions have been spread by the media,” Smith adds. “I’ve received emails that basically say ‘Dear Ms. Smith, my chief wants me to ask you where we get the software that tells us where to go pick up the criminals.’ ”

In addition to addressing the International Association of Chiefs of Police Information Management Conference, Smith and other IGT CoE staff (notably, Hollywood and Price) have made presentations at the following events:

- Virginia Association of Law Enforcement Planners (keynote address).
- International Association of Crime Analysts.
- Massachusetts Association of Crime Analysts.
- California Crime and Intelligence Analyst Association.
- Royal Melbourne Institute of Technology, Australia.
- Mid America Regional Crime Analysis Network.
Using a framework developed by host agency RAND Corporation, the Information and Geospatial Technologies Center of Excellence (IGT CoE) reviewed, compiled and organized documented studies, articles and reports as well as prior IGT CoE research findings to identify use cases for license plate readers (LPRs) that go beyond the original purpose of finding stolen cars and license plates.

The team identified major uses from a literature review and tagged each of these uses based on characteristics of interest. The IGT CoE sorted the uses on five variables:

1. Degree of interoperability required.
2. Type of data required.
3. Use of data (instant or analytic).
4. Application (direct or indirect).
5. Positioning (mobile or fixed).

Staff then created four categories:

1. **Rapid Responses Supported by Local Law Enforcement Data.** Identifying license plates linked to crimes such as stolen vehicles, bank robberies, carjackings, burglaries, kidnapping or AMBER Alerts.

2. **Rapid Responses Supported by Department of Motor Vehicles (DMV)-Collected Data.** Finding vehicles with failed emissions inspections or unregistered or expired license plates, or finding uninsured motorists or persons with suspended driver’s licenses.

3. **Analytical Activities Supported by Local Law Enforcement Data.** Analytical activities (such as mining previously obtained LPR data) that support investigations of narcotics operations, gangs, prostitution, serial crimes or pattern analysis to find stolen vehicles.

4. **Analytical Activities Supported by Interagency Data.** Analytical activities (such as mining previously obtained LPR data) that support interagency operations such as counter-terrorism or border patrol activities.

Staff then compiled an annotated reference list of all material, arranged alphabetically and rated by relevance; this living document will grow throughout the LPR study. The study will continue in 2013 with interviews and site visits to departments that are using LPR systems.

resources into an area,” Hollywood says. “The idea of predictive policing is largely an extension of existing practices. Most agencies build their efforts off existing crime analysis efforts, with the software augmenting and automating existing methods.”

**Highlights**

The IGT CoE provides strategic planning, evaluation and outreach support to the National Institute of Justice (NIJ) for its four portfolios and Technology Working Groups related to information technology (IT) and analytics:
Information-Led Policing.

Geospatial Technologies.

Operations Research.

Modeling and Simulation.

Highlighted activities include:

- Completed interviews and site visits with more than two dozen law enforcement agencies regarding their information technology needs, and published the analysis and results in *Keeping Law Enforcement Connected: Information Technology Needs from State and Local Agencies* (http://www.rand.org/pubs/technical_reports/TR1165.html). Key needs identified include improved access and decreased lifecycle costs for core technologies, including knowledge management systems (principally records management systems or RMS/computer-aided dispatch or CAD); mobile communications networks and camera systems of all types; improved interoperability, especially for RMS/CAD systems; and increased federal outreach to state and local agencies by better leveraging relationships with practitioner associations.

- Held discussions with technology providers and associations to discuss the findings outlined above and ways to move ahead in these areas. In 2013, the IGT CoE will work to help address these needs with a study on knowledge management systems that has an initial focus on leveraging new technologies such as cloud computing, shared services, the National Information Exchange Model and other standards for data sharing, and novel processes for determining system requirements.

- Worked with NIJ on plans for the first Policing Technology Advisory Panel, which will bring together practitioners from a variety of disciplines to identify operational needs that might be met with technological research and development. The in-person panels will feature breakout groups employing some of the latest brainstorming and decision-making techniques to identify, assess and prioritize needs. In addition, online panels of hundreds of practitioners will collectively edit and assess newly discovered needs. The first panel on
law enforcement needs will take place in 2013; future panels are planned for courts and corrections technology needs.

- Created a preliminary set of more than 30 information and analytics technology capabilities for criminal justice as well as a preliminary gap analysis identifying unmet needs within those capabilities. Research on possible investment opportunities to address those needs is underway.

- Using data from the Law Enforcement Management and Administrative Survey (LEMAS), CoE researchers built an econometric model to determine if they could detect statistically significant decreases in crime rates or increases in clearance rates as a result of using certain operational practices and technologies. In a preliminary study using one year of LEMAS data, the researchers identified correlations between technology, community-focused policing activities and policing outcomes. In 2013, the CoE will use these quantitative results to inform interviews with agencies that use community policing methods (with supporting IT) to explore which operational processes and technology appear most promising. A report on this study will be published in 2013.

- Examined more than a dozen U.S. Department of Justice (DOJ)-funded geospatial analysis tools, specifically evaluating versions provided to DOJ at the end of development projects. The CoE performed technical assessments and obtained operational perspectives by interviewing individuals who use these tools. Staff also identified cutting-edge findings on DOJ-funded tool development and dissemination. These findings extend support for the tools past initial development and show ways to enhance tool dissemination and improve interoperability processes and standards. A full report will be published in 2013.

- Conducted a number of site visits with NIJ grantees working on IT and analytics-related projects, assessing progress and identifying opportunities for collaboration.

- Provided assistance to a number of individuals submitting requests for help via the “Ask NLECTC” email address, mainly in the areas of predictive policing and crime analysis.

- Publicized a cost-of-crime calculator (http://www.rand.org/jie/centers/quality-policing/cost-of-crime.html) that assesses expected increases in crime and resulting costs to the community as a result of reductions in police personnel. Addressing budget cuts continues
to be a critical issue for law enforcement agencies, and the IGT CoE often responds to questions about how budget cuts will impact communities.

For more information on Information and Geospatial Technologies Center of Excellence projects or other programs within NIJ’s Information and Geospatial Technologies portfolio, contact Program Manager Steve Schuetz at (202) 514-7663 or by email at steve.schuetz@usdoj.gov.
Taking Technology Tests Into the Field

The National Institute of Justice’s (NIJ’s) Research, Development, Test and Evaluation process moves in a circle, starting with research on technology needs through the collection of information from practitioners and progressing through development by grantees, field tests and evaluation of test results. All of these steps help further inform the next cycle of the process until eventually, practitioners have a new technology that meets their needs. The Sensor, Surveillance, and Biometrics Technologies Center of Excellence (SSBT CoE) plays a key role in keeping that circle going, facilitating comparative testing and evaluation in the field of a number of prototype devices that may one day help law enforcement officers better perform their jobs.

“We’ve conducted technology testing and evaluation on a number of systems. We take them into the field with our law enforcement partners whenever possible,” says Lars Ericson, SSBT CoE director. He sees this as a key part of the process, because if “the vendor isn’t involved at another point of the cycle, where there is feedback from the field, there can be a disconnect, a missed opportunity to really make the most out of NIJ’s investment in the prototype. If the prototype is just
released into the field without evaluation, or the developers don’t get feedback from the field, it really stunts the technology development.”

At any given time, the SSBT CoE has several test and evaluation projects underway at various stages in the process. Following are three examples of projects pursued during 2012.

**Long-Range Facial Recognition Binoculars**

Developed to aid undercover surveillance, this device uses stereoscopic technology to combine images from both eyepieces and to remove the background. (The background sometimes hinders face-matching algorithms.) It has the capability to capture results from 100 meters away. In partnership with West Virginia University, the SSBT CoE collected images from 100 volunteers and has compared results using the prototype device, a camera with a traditional telephoto lens and a digital camcorder. The data collected through this analysis of both the hardware and software involved have been submitted to the vendor, which is using the results to produce a second-generation prototype. The revised prototype will undergo the same review process during 2013.

“We took this around the country and showcased it at various events, including the NIJ Technology Institutes for Law Enforcement (see p. 47). We also got practitioner feedback from the FBI and the U.S. Department of Homeland Security, as well as through visits to other field sites,” Ericson says. “This all helps meet the ultimate goal of putting the best technology in the hands of law enforcement.”

**Latent Print Matching Algorithm**

Fingerprints collected in the field often require extensive study and markup by a trained technician before they can be fed into a database for comparison. This can affect investigations and contribute to a backlog. The SSBT CoE evaluated a software package that uses “lights-out” technology to allow prints collected at a crime scene to be fed directly into a database. (Lights-out algorithms generate “identified” or “nonidentified” responses without the need for a technologist to review the prints, although in some cases the score is not high enough to produce either response. This process is often used in civilian identification systems.) The Center
collaborated with the FBI to obtain access to a closed database of more than 1,000 subjects collected for latent print research. Database entries simulate prints collected from various types of surfaces using different techniques. The SSBT CoE compared results using the prototype software to results using conventional techniques. As of the end of 2012, the FBI was reviewing the results to determine what information can be released and shared.

Contactless Fingerprint Technology

Next-generation fingerprint devices capture a fingerprint image without the need to press it on a conventional rolled ink card or sensor plate. Potential benefits include generating a more natural image (because it is not distorted by pressure) and improved sanitation (which

LATENT FINGERPRINT INTEROPERABILITY SURVEY—FIRST OF ITS KIND

In late November 2012, the Sensor, Surveillance, and Biometrics Technologies Center of Excellence (SSBT CoE) received Office of Management and Budget approval to release a groundbreaking survey on interoperability (or the lack thereof) among automated fingerprint identification systems (AFIS).

“Interoperability is an ongoing challenge because with AFIS, as with many other biometric systems, agencies stand up systems based on their own budgets and needs. Interoperability is a secondary consideration,” says Lars Ericson, SSBT CoE director. “The result is hundreds of systems that have to be patched together to communicate with each other. Prior to this survey, no one has attempted to capture all of the issues in a cohesive, rather than anecdotal, manner.”

Mark Persinger serves as the task lead for the project, working closely with stakeholders in the field and with the National Institute of Justice. Work on the project began in 2010. Using input from subject-matter experts and reviewing agencies, the SSBT CoE produced an instrument that includes up to 300 questions and takes approximately three hours to complete. It includes a core section and separate sections for state agencies and for local agencies.

“The intent is to conduct it online,” Persinger says. He expects the survey will be available online for approximately three to four months, with results published sometime during fall 2013.

“This will be a very important survey that can be used to identify where the challenges really are and to improve policies and procedures as well as the technology of the data structure. You can clearly connect the dots to see how this is hindering the ability to solve crimes. Law enforcement is doing an excellent job with the resources available, but if they can improve the ability to search latent prints from databases in other states and jurisdictions, it will improve the odds of ‘catching the bad guy,’ ” Ericson says.

The survey was developed in coordination with the Latent Print AFIS Interoperability Task Force chartered by the Subcommittee on Forensic Science under the National Science and Technology Council. This subcommittee was created to assess the practical challenges of implementing recommendations in the 2009 National Research Council report titled Strengthening Forensic Science in the United States: A Path Forward, and to advise the White House on how best to achieve the goals outlined in that report. Participation in the survey is voluntary and is open to state and local law enforcement agencies that own an AFIS. SSBT CoE personnel will contact agencies concerning their participation.
is particularly desirable in high throughput areas, such as airports). However, there may be inherent difficulties in matching these fingerprints against rolled ink and other latent prints collected in legacy databases. Also, the scientific benefits of a non-distorted image have not been researched. The CoE organized a 500-subject data collection and compared four traditional devices, three contactless devices and 10-print cards. Analysis is underway, with results expected in late winter or early spring 2013. Ericson says the data set can be made available to universities doing related research, which will be beneficial because obtaining human-subject data often presents a challenge in biometrics research. The SSBT CoE has worked in close collaboration with the U.S. Department of Defense and the National Institute of Standards and Technology in this effort.
Highlights

Since October 2010, the SSBT CoE, operated by ManTech International Corporation, has helped with the transition of law enforcement technology from the laboratory into practice by first adopters. Areas of focus include concealed weapons detection, through-the-wall surveillance, novel sensors, video surveillance, body-worn cameras, handheld biometric devices and biometric information technologies.

The SSBT CoE provides scientific engineering advice and support, research and development (R&D) program support, and outreach and networking to law enforcement and corrections agencies nationwide. The Center offers the following services:

- Identifying technology and operational requirements.
- Supporting NIJ’s research and development programs.
- Testing, evaluating and demonstrating technologies.
- Supporting the adoption of new technology.
- Developing technology guidelines and standards.
- Providing technology assistance and support to criminal justice agencies nationwide.

Highlighted activities include:

- Concluded a market survey of currently available through-the-wall sensors (TTWS). The survey focuses on Federal Communications Commission (FCC)-certified devices and includes devices that are in late-stage prototype development. The report is currently available and is published through JUSTNET (https://www.justnet.org/our_centers/COEs/sensor-tce-pubs-pres.html). A companion study is currently underway that will discuss the results of testing and evaluation (T&E) of FCC-certified devices.

- Conducted ongoing T&E of TTWS for law enforcement applications. The program focused on FCC-certified commercially available systems in conjunction with a late-stage prototype developed by a third party through NIJ R&D funding. These devices can offer increased
situational awareness during certain law enforcement operations. A Federal Register notice advertised the testing initiative and solicited involvement by any TTWS commercial vendor. The devices are currently undergoing T&E based on performance and usability metrics. As a result of the expertise and testing generated from the work, the Center has actively engaged law enforcement agencies around the country to incorporate field testing and feedback, and has collaborated with the U.S. Department of Homeland Security SAVER program to support its evaluation efforts. Final test results are expected to be delivered to NIJ in spring 2013.

- Performed laboratory T&E of a video analytics software suite developed to predict and detect group behaviors in surveillance video. Center staff examined the setup, configuration and use of the system in a laboratory setting. The CoE performed a thorough examination of multiple camera configurations and deployments in preparation for collection activities to be performed in 2013. These activities will include simulated engagement scenarios involving groups and individuals. Center staff pursued relationships with law enforcement partners to examine the application of the software to archived law enforcement video footage in order to evaluate performance and provide feedback to NIJ-funded researchers.

- Continued to host a Technology Working Group (TWG) Microsoft® SharePoint site as a supplement to traditional NIJ TWG activities. The CoE expanded site membership to CoE stakeholders and partners, including senior local and state law enforcement personnel recruited from outreach activities such as the NIJ Technology Institutes for Law Enforcement. Site membership grew to 66 members across the two TWGs, the CoE and TWG observers. The site allowed TWG members to continue exchanging ideas and information pertaining to the TWGs’ technology needs and other formal TWG business. Additionally, the site gave members the opportunity to discuss emerging technologies, common issues and other areas of interest. The site currently hosts 62 discussion threads and 113 documents to support TWG activities.

- Initiated a technology webinar series to enhance discussions and inform law enforcement partners. Four webinars took place in 2012:
  - Digital Video and Controlled Access Systems.
  - Robots for Law Enforcement.
— Assessment of Portable HAZMAT Sensors for First Responders.


For more information on the Sensor, Surveillance, and Biometric Technologies Center of Excellence, contact NIJ Program Manager Mark Greene at (202) 307-3384 or by email at mark.greene2@usdoj.gov.
When a law enforcement officer dies as the result of a gunshot wound, or lies in the hospital seriously injured from a knife attack, the incident makes headlines nationwide. But every day in law enforcement agencies large and small, other less-serious injuries occur, such as strained backs, twisted ankles, broken bones and severe bruises.

Do all of these less-serious injuries add up to numerous hours of lost work? Do some result in early retirements for officers who had been planning to keep working for a number of years? Can anything be done to prevent some of these injuries, thereby decreasing the amount of lost money and productivity?

The National Institute of Justice (NIJ) wants to find out. To that end, the Institute has tasked the Weapons and Protective Systems Technology Center of Excellence (WPSTC) with examining line-of-duty (LOD) injuries nationwide.

“They thought we could uncover and analyze an injury database and find out things such as, for example, that a large number of back
injuries occur when lifting too-heavy gear bags, so a recommended policy change might be to put the gear in two smaller bags. We’re hoping to find out some good information like that,” says Dr. John Kenny, WPSTC associate director and the principal investigator for this study.

According to Kenny, the goal of the study is to examine both the short- and long-term economical and organizational impacts of LOD injuries by:

- Identifying the types and frequencies of disabling injuries.
- Isolating the major causes of those injuries (e.g., the possible contribution of vehicle seat design, body armor, load-bearing equipment).
- Providing recommendations to change policies to reduce the occurrence of injuries.
- Recommending methods that will reduce or eliminate injuries.

The study began in February 2012. However, WPSTC researchers quickly discovered that there is no large-scale single source of data on injuries. After pursuing a number of possible avenues to obtain that information, the WPSTC team developed an approach that involves working with three major carriers of Workers’ Compensation insurance that have policies in all 50 states and also maintain information on claims in centralized databases. Kenny says he is working to set up collaborative agreements with these agencies to obtain data, which would be “sanitized” to remove identifying information before analysis. He also has proposed two alternate approaches—one involves working with existing LOD injury databases in Iowa and New Jersey, and the other involves setting up a website that encourages officers to self-report information, similar to the National Fire Fighter Near-Miss Reporting System (http://www.firefighternearmiss.com/).

“Another approach under consideration is working with several sample departments to obtain data on their LOD injuries. However, NIJ is currently interested in a much more expansive effort. The ultimate goal is to learn about the types of injuries that commonly affect every department,” Kenny says. “Once the most frequent injuries are identified, the next step would be to recommend best practices and training that would help prevent those types of injuries. If we are able to work with the insurance agencies, this could benefit them too, because they could end up paying out less in claims.”
According to a preliminary report on the project methodology compiled by the WPSTC, the Bureau of Justice Statistics reports that there are more than 18,000 state and local law enforcement agencies and police departments in the United States. Local police jurisdictions employ 593,000 individuals full time, 461,000 of whom are sworn police officers. Sheriffs’ departments account for 175,000 sworn law enforcement officers, and state law enforcement departments and agencies employ another 58,000 sworn officers. Members of this group are injured on the job daily; although most of those injuries are not life threatening, many lead to lost productivity.

“As of the end of 2012, we have submitted an interim report to NIJ and will be discussing our next steps with our NIJ program manager in early 2013,” Kenny says. “We want to use the approach that provides the most benefits to NIJ and then ultimately, the most benefit to the law enforcement community.”

**Highlights**

Operated by the Pennsylvania State University (PSU), the WPSTC supports NIJ’s efforts related to the safety and effectiveness of protective equipment, tools and technologies that are used by public safety professionals. The Center supports NIJ research, development, testing and

---

**PIT MANEUVER TESTING COMPLETE; RESULTS AVAILABLE IN 2013**

In October 2012, the Weapons and Protective Systems Technology Center of Excellence (WPSTC) Pursuit Management Technology staff partnered with the Michigan State Police (MSP) Precision Driving Unit (part of the state police academy) to characterize vehicle dynamics during the employment of the PIT (Precision/Pursuit Intervention Technique) maneuver. (The PIT maneuver is a tactic by which a pursuing vehicle engages the rear corner of a fleeing vehicle and causes it to spin, which results in the controlled termination of a pursuit.)

The principal focus was the behavior of vehicles equipped with electronic stability control technology. Using a combination of vehicle types (both cars without electronic stability, both with electronic stability and so on), instructors and students from the MSP’s PIT maneuver training course ran vehicles through the test protocol at a variety of speeds.

WPSTC compiled results to capture the behavior of vehicles during testing through both video and data. Testing came about as the result of meetings between the WPSTC’s Pursuit Management Technology Working Group (TWG) and instructors at the Federal Law Enforcement Training Center, whose members and respective agencies had serious questions about the effectiveness of the PIT maneuver against vehicles with stability control. Lt. Jim Flegel, director of the MSP Precision Driving Unit and a member of the Pursuit Management TWG, facilitated the testing by providing the venue and driving instructors. WPSTC staff compiled results during the remainder of 2012; they prepared a technical report and a 15-minute DVD presentation for release through JUSTNET in early 2013.

For more information on this project, contact Mike Hendrickson, Weapons and Protective Systems Technology Center of Excellence engineering project manager, at (814) 865-1289 or by email at mxh181@arl.psu.edu.
evaluation activities in the areas of improvised explosive device defeat, less-lethal devices, officer safety equipment and pursuit management.

The Center includes programs and projects in PSU’s Applied Research Laboratory, Institute for Non-Lethal Defense Technologies and Pennsylvania Transportation Institute. It also includes a partnership with the University of Denver.

Highlighted activities include:

- Developed and posted the scope of work and request for bids from testing entities for the validation of the tests used in the draft Duty Holsters and Restraints standards. After successfully resolving some funding difficulties, the WPSTC is currently monitoring ongoing validation work.

- Coordinated a 60-day field trial of Turtleskin 6-50 gloves by 267 individual participants from 10 agencies. As of the end of 2012, CoE staff were compiling survey results.

- Conducted field testing of the NIJ53 Tactical Mask Respirator. This represents the culmination of a three-year project (in cooperation with AVON Protective Systems) to develop a more effective mask respirator unit specifically for tactical use in the field. The study resulted in recommendations for final design modifications that were implemented by AVON Corporation.

- Drafted a report on the cooperative technologies that enable consumer and commercial vehicle telematics: cellular networks, GPS and intra-vehicular communication buses. This report briefly summarizes the technology and provides an overview of telematics offerings by automobile manufacturers.


- Participated in a National Institute of Standards and Technology effort to develop an International Electrotechnical Commission standard for testing of conducted energy devices (CEDs).
Continued to respond to inquiries from the field to conduct post-incident CED testing and to characterize Tasers and new CEDs.

As requested by the Pennsylvania State Police, examined and quantified the contents of a specific OC canister to support a governmental decision to lift a temporary ban on its use.

Supported National Bomb Squad Commanders Advisory Board (NBSCAB) meetings, maintained and operated the NBSCAB website, and assisted with the development and online publication of the NBSCAB National Strategic Plan.

Initiated a project to test ballistic shields and vests during November 2012.

Began a Tactical Operations and Missions Analysis project in fall 2012 that will analyze and define the missions and capabilities of SWAT (tactical operations) and lead to a framework for use in tactical planning and training.

Began a Multi-Threat Duty Uniform Field Assessment in fall 2012 that will provide test uniform shirts to two large/urban, medium and small (rural) police departments for a test period of wear evaluation and assessment. The U.S. Army Soldier Center in Natick, Mass., has completed physical testing and characterization of several new materials, and will provide a report and recommendations on a down-selected type of material to support the field assessment.

For more information on the Weapons and Protective Systems Technology Center of Excellence, contact Program Manager Brian Montgomery at (202) 353-9786 or by email at brian.montgomery@usdoj.gov.