CONTENTS

Executive Summary.............................................................................................................1
  Making the Connection Between
  Research and Practice

National Center..................................................................................................................5
  The Evolution of e-TechBeat and
  Its Mobile App

Standards and Testing ......................................................................................................13
  Update of Body Armor Standards

School Safety ..................................................................................................................19
  Helping Law Enforcement and
  Communities Meet the Challenges
  of the Modern School Day

Small, Rural, Tribal and Border Regional Center..........................................................23
  Center Responds to Requests for
  School Safety Materials

Law Enforcement Aviation Technology Program ..............................................................27
  Video Shows a Path to Unmanned Flight

National Institute of Justice Technology Institutes .........................................................31
  Focusing a Spotlight on Contraband Cell Phones

Outreach ..........................................................................................................................39
  Maximizing Resources Through Online
  Connection and Social Media
Corrections Technology Center of Excellence ........................................49
  Guiding Agencies Toward Cell Phone Forensic Solutions

Forensics Technology Center of Excellence ........................................55
  Online Learning Leads to “New Math”

Information and Geospatial Technologies Center of Excellence........61
  Predictive Policing Report Generates Positive Feedback

Sensor, Surveillance and Biometrics Technologies Center of Excellence 67
  Focusing on Gun Safety

Weapons and Protective Systems Technology Center of Excellence ....73
  Analyzing the Tactical Operations Mission

Conclusion ................................................................................................79
EXECUTIVE SUMMARY

Making the Connection Between Research and Practice

The National Law Enforcement and Corrections Technology Center (NLECTC) System was created in 1994 as a program of the National Institute of Justice (NIJ) Office of Science and Technology. It has served as the conduit between researchers and criminal justice professionals in the field on technology issues for the past 20 years. During that time, and throughout several reorganizations, NLECTC has worked with criminal justice professionals to identify urgent and emerging technology needs. NIJ sponsors research and development or identifies best practices to address those needs, and NLECTC centers then demonstrate new technologies, test commercially available technologies and publish results—connecting research and practice. The NLECTC System and its component centers play a crucial role in enabling NIJ to carry out its critical mission to help federal, state, local and tribal law enforcement, corrections, courts and other criminal justice agencies address their technology needs and challenges.
The NLECTC System and its component centers provide:

- Scientific and technical support to NIJ’s research, development, test and evaluation (RDT&E) projects.
- Support for the transfer and adoption of technology into practice by law enforcement and corrections agencies, courts and crime laboratories.
- Assistance in developing and disseminating equipment performance standards and technology guides.
- Assistance in the demonstration, testing and evaluation of criminal justice tools and technologies.
- Technology information, in addition to general and specialized technology support.
- Assistance in setting NIJ’s research agenda by convening practitioner-based advisory groups to help to identify criminal justice technology needs and gaps.

National Center

The National Center plays a key role by serving as the information hub of the system. NLECTC-National is both the initial point of entry for criminal justice professionals and other interested parties, and the clearinghouse that disseminates information to those constituents. Requests for technology, information or materials via the “Ask NLECTC” mailbox (asknlectc@justnet.org) or the toll-free line at (800) 248-2742 come through the National Center. Staff either fulfills the request immediately if it falls within NLECTC-National’s unique areas of expertise or quickly moves it to the component center that can handle the request most efficiently.

NLECTC-National’s unique areas of expertise include nonbiased, science-based knowledge and expertise in equipment testing and standards (body armor, police vehicles, handcuffs and others). The National Center uses that expertise to:

- Conduct equipment testing programs, review and analyze testing data, and disseminate results.
- Operate JUSTNET, NLECTC’s website, and manage the system’s social media outlets, including Twitter, Facebook and YouTube.

- Disseminate print and online newsletters and bulletins, including e-TechBeat and JUSTNET-News.

- Help NIJ identify and prioritize technology needs and requirements.

You can read about how the award-winning TechBeat evolved into an electronic publication (with accompanying mobile apps) on p. 5, how the Compliance Testing Program helps NIJ with updates to the ballistic- and stab-resistant body armor standards on p. 13, and the development of a new website dedicated to helping the men and women of law enforcement in their efforts to increase safety in our nation’s schools on p. 19.

**Regional Centers**

The Small, Rural, Tribal and Border Regional Center (SRTB-RC) works with agencies that have fewer than 50 sworn staff and their officers, helping them gain access to a full range of scientific and technology-related information tailored to meet the needs of smaller agencies. You can read about SRTB-RC’s efforts in the area of school safety on p. 23 and its oversight of NIJ’s Law Enforcement Aviation Technology Program, which demonstrates low-cost, effective ways that smaller agencies can develop aerial support capabilities, on p. 27.

The States, Major Cities and Counties (SMCC) Regional Center provided similar services to the nation’s large agencies (those with 50 or more sworn personnel). Its efforts, including outreach projects to professionals in the field, were absorbed into the activities of the National Center on Dec. 31, 2013, as this cooperative agreement ended and virtual outreach activities took on a more prominent role overall. Read more about the NLECTC System’s evolving outreach activities on p. 39 and about outreach by the National Center, SMCC and SRTB-RC through NIJ’s Technology Institutes on p. 31. The Technology Institutes bring together administrator-level personnel to share information on technology challenges they have faced and to network with representatives of other agencies that face similar problems.
Centers of Excellence

Within their respective portfolio areas, the Centers of Excellence (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. The CoEs also provide specialized technology assistance on request and help facilitate RDT&E projects at various testbed agencies.

Highlighted activities include:

- Staff from the Corrections Technology CoE developed a guidebook on the use of cell phone forensics in corrections; the guidebook will be available online in 2014 (p. 49).

- The Forensics Technology CoE continued to expand its use of online learning platforms (p. 55).

- Culminating an effort begun in 2012, the Information and Geospatial Technologies CoE published a report on the uses of predictive policing (p. 61).

- The Sensor, Surveillance and Biometrics Technologies CoE contributed important research to an NIJ report on gun safety technologies (p. 67).

- The Weapons and Protective Systems Technology CoE completed a project designed to improve planning and training for tactical operations (p. 73).
In fall 2013, the National Center ceased printing TechBeat and redesigned and enhanced its online version. The reinvigorated e-TechBeat presents a dynamic, fluid, easy-to-navigate reading experience that includes animation, video, audio and other interactive features along with full screen and thumbnail views. TechBeat has been published quarterly since its inception in 1995; 2014 plans call for a bimonthly publishing schedule. At the close of 2013, e-TechBeat had approximately 19,000 subscribers.

TechBeat, the newsmagazine of the National Law Enforcement and Corrections Technology Center (NLECTC) System, keeps law enforcement, corrections and forensics professionals informed about current and emerging technologies and related programs and services within government and private industry, emphasizing those that are available at little or no cost.

Awarding-Winning Mobile App

The NLECTC System developed the e-TechBeat mobile app in 2012 to reach a wider audience and provide its constituency with an alternative
method of receiving the magazine. In late 2012 and 2013, designers streamlined and refined the mobile app to ease navigation and access to articles and interactive features, including videos and slideshows. The new version works well with mobile phones and smaller screens, and its reduced file size makes it easier to download and view articles. This development strategy paid off with a 2013 MarCom design award (see exhibit 1) from the Association of Marketing and Communication Professionals, which consists of marketing, communication, advertising, public relations, media production and freelance professionals.

In late 2013, an improved iteration of the mobile app was released; it was designed to streamline the production process and work across different mobile devices consistently. Content is delivered through the Internet, allowing users to always see the most recent data. The app smoothly combines graphics features and text, and easily allows access to both e-TechBeat and NLECTC’s www.justnet.org mobile website.

**National Center 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, forensics and corrections professionals with an entry portal to the system and its component centers through JUSTNET, the “Ask NLECTC” e-mail 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 the National Institute of Justice’s (NIJ’s) standards development and implementation and its Compliance Testing Program (CTP) (for more information about these activities, see “Update of Body Armor Standards” on p. 13). The CTP ensures the safety and effectiveness of several types of equipment used by the public safety community.

Highlighted activities include:

- Began publishing JUSTNET-News (a listserv publication that highlights news from various U.S. Department of Justice offices and includes articles related to public safety technology from newspapers and magazines) on a weekly, rather than biweekly, basis. Subscriptions increased 138.07 percent, to 14,153 subscribers. A portion of the increase occurred because all e-TechBeat subscribers (as of the end of July, when TechBeat ceased print publication) were added to the JUSTNET-News mailing list.

- Published an article (“Ballistic Body Armor: A Closer Look at the Follow-Up Inspection and Testing Program”) written by an NLECTC staff member in Issue 271 of the NIJ Journal. The article describes the major aspects of the program and includes interviews with CTP staff.

- Conducted research, wrote original articles and produced accompanying video for JUSTNET on the sale of counterfeit ballistic-resistant vests at Florida gun shows, the Oklahoma City Police Department’s response to a devastating spring tornado and issues related to female body armor. (See Exhibit 2. JUSTNET Page Views).

- Participated in an online American National Standards Institute (ANSI)-sponsored course titled “Conformity Assessment Requirements for Bodies Certifying Products, Process and Services.” This 16-hour course reviewed the requirements of ISO/IEC 17065 and changes from International Organization for Standardization/International Electrotechnical Commission Guide 65, and discussed various methods for demonstrating compliance.

- Participated in meetings of the ANSI-ASQ National Accreditation Board (ANAB) Accreditation Council, which assesses and accredits certification bodies that demonstrate competence to audit and certify organizations’ conformance to management system standards.
Participation in ANAB allows NIJ to have a presence in the quality management systems arena.

- Helped the U.S. Marshals Service find an emergency employee alerting system for the Spokane, Wash., district office. This project involves the U.S. Marshals Service, the Federal Protective Service Police and the General Services Administration. Staff produced a list of vendors that is currently being reviewed for suitability.

- In cooperation with the States, Major Cities and Counties (SMCC) Regional Center, coordinated and provided logistical support for both a Technology Institute for Law Enforcement and a Technology Institute for Corrections, and edited, designed and produced programs and after-action reports. At these events, participants 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 117 models of ballistic-resistant body armor, 20 models of stab-resistant armor and 13 restraints; also conducted follow-up inspection and testing of 89 models of ballistic-resistant body armor.
## 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>3</td>
</tr>
<tr>
<td>Biometrics</td>
<td>2</td>
</tr>
<tr>
<td>Body Armor</td>
<td>168</td>
</tr>
<tr>
<td>Commercialization</td>
<td>2</td>
</tr>
<tr>
<td>Communications</td>
<td>23</td>
</tr>
<tr>
<td>Corrections</td>
<td>81</td>
</tr>
<tr>
<td>Court Technologies</td>
<td>1</td>
</tr>
<tr>
<td>Crime Mapping</td>
<td>11</td>
</tr>
<tr>
<td>Cyber Crime</td>
<td>7</td>
</tr>
<tr>
<td>Equipment Programs</td>
<td>136</td>
</tr>
<tr>
<td>Explosives</td>
<td>2</td>
</tr>
<tr>
<td>Forensics</td>
<td>21</td>
</tr>
<tr>
<td>Information Technologies</td>
<td>189</td>
</tr>
<tr>
<td>Less-Lethal Technologies</td>
<td>5</td>
</tr>
<tr>
<td>Personal Protective Equipment</td>
<td>39</td>
</tr>
<tr>
<td>Pursuit Management</td>
<td>2</td>
</tr>
<tr>
<td>School Safety</td>
<td>17</td>
</tr>
<tr>
<td>Sensors and Surveillance</td>
<td>19</td>
</tr>
<tr>
<td>Standards and Testing</td>
<td>285</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,013</strong></td>
</tr>
</tbody>
</table>
Provided meeting coordination, subject-matter expertise and/or technical writing/editing support for a body armor manufacturers' workshop and seven Special Technical Committee meetings on stab-resistant body armor, ballistic-resistant body armor and interview room video.

In conjunction with the SMCC Regional Center, exhibited at 15 national law enforcement and corrections conferences.

In conjunction with the Michigan State Police, conducted evaluations of 2013 model year police vehicles (13) and motorcycles (seven).

Handled approximately 700 non-conference-related requests for publications and responded to approximately 1,900 individual requests for assistance (see Exhibit 3).

Designed, edited and produced four publications for various centers within the system.

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

States, Major Cities and Counties Regional Center Highlights

From 2010 through 2013, the SMCC Regional Center shared facility space and operated in cooperation with the National Center. The SMCC Regional Center provided a resource and outreach mechanism for larger criminal justice agencies (those with 50 or more sworn personnel), giving them access to a full range of relevant scientific and technology-related information and publications, including the resources and technology assistance activities of the entire NLECTC System and results from NIJ research, development, testing and evaluation. Due to a shift in priorities away from physical outreach at conferences and meetings to a more virtual approach through increased emphasis on the use of the Internet and social media, the SMCC Regional Center ceased operation on Dec. 31, 2013.
Highlighted activities include:

- Collaborated with NLECTC-National to supply surplus computers and Blackberry phones to the Crossville (Tenn.) Police Department. This involved several site visits to explain the Federal 1033 Surplus Property Program and the NIJ and NLECTC System missions.

- Provided technical and logistical support for the Pre-Flight Briefing and Public Safety Guidance on Unmanned Aircraft Systems Operations Workshop in Annapolis, Md., in June 2013. NIJ, the Federal Aviation Administration and the U.S. Department of Homeland Security hosted this event.

- In cooperation with NLECTC-National, coordinated and provided logistical support for both a Technology Institute for Law Enforcement and a Technology Institute for Corrections, and edited, designed and produced programs and after-action reports. At these events, senior public safety professionals selected from a pool of applicants shared their technology challenges, networked and received an overview of current and emerging NIJ projects.

- Exhibited at quarterly FBI National Academy Partner Days as part of an ongoing cooperative effort between SMCC and the FBI. Partner Days target the 250 police executives who attend the current FBI National Academy class; they 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.

- In cooperation with NLECTC-National, exhibited at 15 national, regional and state law enforcement and corrections conferences. The SMCC Regional Center also 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; this represents 1,913 cities and counties within the continental United States and 2,077 law enforcement and corrections agencies. A total of 2,403 new contacts were documented.

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.
STANDARDS AND TESTING

Update of Body Armor Standards

In 2013, the National Law Enforcement and Corrections Technology Center (NLECTC)-National, building on previous progress, continued to facilitate a major update to the stab-resistant body armor standard and began work on revisions to the ballistic-resistant body armor standard.

The National Institute of Justice (NIJ) develops voluntary standards that specify minimum equipment performance requirements. The development of equipment standards is a key element in the support of the public safety community; these standards serve as the cornerstone for producing consistent, reliable products that reflect the operational needs and requirements of this community.

NLECTC-National supports the development and implementation of NIJ standards and also administers its Compliance Testing Program (CTP). The CTP assesses the performance of commercially available equipment for law enforcement and corrections officers, and ensures these officers that their equipment has been independently evaluated or has demonstrated the ability to meet current NIJ performance standards.
Stab-Resistant Body Armor Standard

NIJ develops standards using Special Technical Committees (STCs), which are composed of federal, state and local law enforcement or corrections practitioners with relevant experience; this includes technical experts (e.g., laboratory personnel) as well as representatives of stakeholder organizations (e.g., the Fraternal Order of Police and the National Sheriffs’ Association). STC members collaborate to produce a voluntary performance standard, a certification program requirements document, and a selection and application guide (users’ guide).

*Stab Resistance of Personal Body Armor, NIJ Standard-0115.00* (published in 2000) needs to be revised to address current stab and slash threats faced by U.S. correctional officers. The revised standard will specify minimum requirements for stab/slash-resistant torso armor and will include testing specific to female armor.

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

- Improvised weapons—typically weapons made by inmates that are found inside controlled-access facilities (including jails, detention centers and prisons).
- Commercial weapons—typically professionally made, commercially available weapons found outside controlled-access facilities, but including the jail intake area and on the street.

Completion of a draft standard is dependent on the development of female armor testing and slash testing, and on the characterization of improvised implements (exemplars) to use for stab and spike testing. The STC made significant progress on those issues in 2013. (See sidebars, “Development of Slash-Testing Apparatus,” p. 15 and “Female Body Armor,” p.16.)

Development of exemplars for the standard is based on the types of improvised weapons collected from correctional facilities and research into the types of wounds inflicted on inmates and staff. In 2013, based on research, preliminary exemplar types to include in the standard were devised.
In 2013, staff at the National Law Enforcement and Corrections Technology Center (NLECTC)-National worked to develop a new test method to assess the ability of body armor to protect the wearer from the type of slashing attacks that a correctional officer might encounter in a prison setting. An important part of this effort was the development of a prototype testing device.

NLECTC-National staff traveled to the United Kingdom (UK) to fast track the development of a slash-testing apparatus and testing protocols. Through meetings with representatives of the United Kingdom Home Office Center for Applied Science and Technology (CAST), NLECTC staff gained access to the only fully operational slash-testing apparatus in the world. They also received permission to change key components of the apparatus to allow incorporation of the U.S. test threat weapon so that essential proof-of-concept trials could be conducted. This saved the time and expense of fabricating the test device, and also saved hours of labor and experimental trials. Testing conducted in the UK demonstrated that the proposed apparatus and procedures for its use could move forward for further evaluation and consideration.

Through this collaborative effort, NLECTC learned about a new design approach that CAST staff had developed. This approach allows for the construction of a test fixture that does not require an exceptionally high ceiling to accommodate the gravity-driven drop mass used in the current fixture design. Staff determined that the new fixture design could be constructed in NLECTC’s Gaithersburg, Md., facility. This fixture will facilitate the development of a standardized test method to be used in evaluating the slash resistance of law enforcement equipment.

**DEVELOPMENT OF SLASH-TESTING APPARATUS**

In 2013, staff at the National Law Enforcement and Corrections Technology Center (NLECTC)-National worked to develop a new test method to assess the ability of body armor to protect the wearer from the type of slashing attacks that a correctional officer might encounter in a prison setting. An important part of this effort was the development of a prototype testing device.

NLECTC-National staff traveled to the United Kingdom (UK) to fast track the development of a slash-testing apparatus and testing protocols. Through meetings with representatives of the United Kingdom Home Office Center for Applied Science and Technology (CAST), NLECTC staff gained access to the only fully operational slash-testing apparatus in the world. They also received permission to change key components of the apparatus to allow incorporation of the U.S. test threat weapon so that essential proof-of-concept trials could be conducted. This saved the time and expense of fabricating the test device, and also saved hours of labor and experimental trials. Testing conducted in the UK demonstrated that the proposed apparatus and procedures for its use could move forward for further evaluation and consideration.

Through this collaborative effort, NLECTC learned about a new design approach that CAST staff had developed. This approach allows for the construction of a test fixture that does not require an exceptionally high ceiling to accommodate the gravity-driven drop mass used in the current fixture design. Staff determined that the new fixture design could be constructed in NLECTC’s Gaithersburg, Md., facility. This fixture will facilitate the development of a standardized test method to be used in evaluating the slash resistance of law enforcement equipment.

**Ballistic-Resistant Body Armor Standard**

Perhaps the most well-known NIJ standard is the one for ballistic-resistant body armor. The most recent version, *Ballistic Resistance of Body Armor, NIJ Standard-0101.06*, was published in 2008. In 2013, an STC began meeting to revise the standard. Before forming the STC, NIJ held both a workshop to obtain comments and suggestions from body armor manufacturers, and a needs and requirements meeting for law enforcement officers to identify their operational environments and missions performed while wearing armor and other equipment that in turn may be affected by an officer’s wearing of armor.

Issues to consider for the revised standard include specific tests and requirements for female body armor, revisions to simplify the threat protection level nomenclature, specific tests and requirements for extremity protection, improved ergonomics, increased resistance to environmental factors and ensuring proper measurement and fit.

“I wanted to personally commend you for the fine job you did week before last at the NIJ Ballistics STC meeting in Annapolis. You did a great job facilitating discussion among all the participants, many of whom have clearly different perspectives and brought strong opinions with them. That meeting could have easily devolved into a dozen sidebar conversations numerous times, but you kept things on track very well. From my notes, it looks like we got through all the technical topics we set out to discuss, so well done!”

Mark Greene, NIJ Program Manager
Compliance Testing Program

The CTP is a conformity assessment program under which equipment is evaluated and subjected to a series of tests (described in NIJ standards) to determine if it meets minimum performance requirements. Body armor models that comply with the standard are added to the Compliant Products List posted on the NLECTC website, www.justnet.org.

Through the CTP, in 2013 NLECTC-National provided oversight and administration for the testing of 84 models of ballistic-resistant body armor, 20 models of stab-resistant armor and 14 metallic handcuff models.

For ballistic-resistant body armor, the Follow-Up Inspection and Testing (FIT) program compares the construction of newly made armor with samples previously evaluated under the CTP, providing confidence that body armor coming off the assembly line is consistently manufactured and performs in accordance with NIJ standards. In 2013, the FIT program inspected 89
ballistic-resistant body armor models at 38 manufacturing locations, 71 models at the CTP and 51 body armor models at NIJ-approved laboratories.

The CTP issues Safety Advisories and Notices to public safety agencies to communicate general and potential safety concerns, such as armor perforations or construction variations seen during testing that could affect ballistic-resistant performance. Models in question are temporarily suspended from the Compliant Products List (CPL) pending completion of the review and evaluation process. The CTP communicates the outcome to law enforcement and corrections agencies.

Safety Notices are issued when a model of ballistic-resistant body armor has been permanently removed from the CPL due to safety concerns; the notices inform agencies that they should replace that model of armor as soon as possible.

In 2013, the CTP issued 16 Safety Advisories and 13 Safety Notices, which are posted on https://www.justnet.org/body_armor/advisory_notices.html.

**Future Body Armor-Related Plans**

- **NIJ certification mark.** NIJ has proposed that a certification mark be placed on armor and other products that pass CTP testing. This mark, or program identifier, would guard against vendors making false claims that armor and other products are certified by NIJ and would provide an avenue for NIJ to take action in a court of law. In 2013, this proposal was being reviewed at the U.S. Department of Justice.

- **Body armor barcode.** NIJ is considering developing an app that would key off barcodes, which vendors would be required to add to body armor labels. The app would help agencies control inventory and track safety inspections.

For more information on the body armor standards efforts and the Compliance Testing Program, contact Program Manager Mike O’Shea at (202) 305-7954 or by email at michael.oshea@usdoj.gov.
Helping Law Enforcement and Communities Meet the Challenges of the Modern School Day


Not the norm, perhaps, but common enough to bring about a new realization in the public safety community of a need to increase proactive efforts to make schools safer.

In the wake of the tragedy at Sandy Hook Elementary School, the National Institute of Justice (NIJ) joined forces with law enforcement and other first responders to address new training and technology needs. This collaboration led to the development of TechBeat: Special Issue on School Safety, which was posted online in January. This special issue provided information on available resources, products and publications produced by NIJ and the U.S. Department of Justice. Staff at the National Law Enforcement and Corrections Technology Center (NLECTC)-National then began to scour the Internet for free, publicly available resources and links to those resources; scan headlines from news media across the nation; and write an ongoing series of success
stories on new technologies being implemented. In July, the National Center launched School-SafetyInfo.org, an always evolving website dedicated to bringing up-to-the-minute information and assistance to the public safety community.

“Federal, state and local jurisdictions are all working together to find new and innovative ways to keep children and adults safe in school settings. This clearinghouse of information and contacts helps law enforcement and other public safety officials prepare, respond and recover as they work to keep schools as safe as possible,” says Mike O’Shea, Senior Law Enforcement Program Manager at NIJ. The website provides information on:

- Government organizations and publications.
- Professional associations.
- University research and resources.
- NIJ products and services.
- NLECTC products and services.
- Networking opportunities.
- Original articles (success stories).
- Reposts of news articles from around the country.

GETTING THE WORD OUT

Through SchoolSafetyInfo.org and the National Law Enforcement and Corrections Technology Center System social media channels, staff promoted the free school safety video “Attention Students and Staff,” which was co-produced by the Gurnee (Ill.) Police Department and Woodland School District No. 50. Gurnee Crime Prevention Technician Tom Agos wrote in thanks: “I love what you’ve done with the article…. I came in this morning to 20 email requests for the video. I’d say the email blast is landing!”
“Changing times call for changing strategies. There are new dangers in our communities and in our schools, and these new realities call for a new focus on safety,” O’Shea says. “Far from only developing techniques to respond efficiently to an active incident, public safety officials are also exploring technologies to gauge and prevent potential crises. And they are sharing their ideas and results. Through SchoolSafetyInfo.org, we are facilitating that sharing process.”

According to O’Shea, NIJ has been a leader in identifying and sharing new training and technology related to school safety ever since Congress passed the Safe Schools Initiative 15 years ago. NIJ has worked with the U.S. Department of Education, the U.S. Secret Service, the FBI, and other government agencies and departments to develop tools and strategies to boost school security. In 2013, NIJ added a new partner, the Maryland Police and Correctional Training Commissions (MPCTC). Through NLECTC-National, NIJ provided logistical and subject-matter support to MPCTC to organize a focus group meeting of school safety experts from around the country; the group met in April. Participants discussed technology needs and potential solutions, networked and made plans to leverage each other’s efforts. At the meeting site in Sykesville, Md., NLECTC-National staff conducted video interviews and gathered information for success stories to help form the building blocks for SchoolSafetyInfo.org.

“It’s a new day in the effort to keep schools safe. Law enforcement and public safety officials are teaming with, and counting on, students, school officials, parents and concerned citizens to share the responsibility to keep schools safe,” said O’Shea. He gave presentations on the NIJ/NLECTC school safety efforts as part of a U.S. Department of Homeland Security webinar in November and during a session at the International Association of Chiefs of Police (IACP) annual conference in October. In preparation for the IACP presentation, NLECTC-National staff compiled all success stories posted on SchoolSafetyInfo.org to that date into a print publication, Sharing Ideas and Resources to Keep Our Nation’s Schools Safe! O’Shea provided copies to session participants and National Center staff distributed nearly all of the remaining copies at the conference booth. Following the conference, NLECTC-National created and posted an online version of the publication on JUSTNET (www.justnet.org), the NLECTC System website,
and staff made plans for a publicity campaign to promote the publication and the website in early 2014.

“There are daily news reports of school violence, bullying, weapons and other threats to students, to teachers and to staff. NIJ and NLECTC don’t have all the answers, but we will keep looking for them and sharing all that we find,” O’Shea said.

For more information on NIJ’s school safety programs, contact Program Manager Mike O’Shea at (202) 305-7954 or by email at michael.oshea@usdoj.gov.
Center Responds to Requests for School Safety Materials

In the months following the December 2012 shootings that took the lives of 20 children and six adults at a Connecticut elementary school, the Small, Rural, Tribal and Border Regional Center (SRTB-RC) distributed thousands of copies of free informational materials on school safety to law enforcement agencies.

SRTB-RC is associated with the Center for Rural Development, and used that center’s resources to keep pace with the number of requests.

“We were getting a lot of requests immediately following the shootings; in fact, we suddenly were inundated with requests,” said Danny Ball, SRTB-RC acting director. “Fortunately, we used the Center for Rural Development help desk, which was staffed 24/7, and were able to keep up with reproduction and shipping.”

Through April 2013, SRTB-RC sent out more than 3,000 CDs related to school safety that highlight resources available to law enforcement agencies. Requests for the CDs declined during the summer months but picked up again in the fall. At the end of 2013, the center had distributed approximately 12,400 school safety CDs.
Sample resources distributed by SRTB-RC include the following (descriptions can be found on http://srtbrc.org/2012/12/free-school-safety-resources/; users also can download files from the website):

- **ASTRO – Active Shooter Training for Responding Officers** (4,235 requests). This Windows-based simulation tool allows a law enforcement officer to participate in active shooter scenarios. The officer must make decisions and act on them to bring an end to the threat.

- **It Can Happen Here** (4,193 requests). This documentary video is designed to inform and compel audiences composed of school safety stakeholders to prepare for emergencies.

- **Triple Play – School Safety Combo** (3,949 requests). This CD-ROM contains:
  - *School Crime Operations Package (School COP)*, a software application for entering, analyzing and mapping incidents that occur in and around schools.
  - *School Critical Incident Planning – Generator (SCIP-G)*, a tool that provides step-by-step guidance for creating a school safety plan using the most widely accepted law enforcement practices and procedures as the foundation.

“I have viewed the material and have found it all to be very relevant. The It Can Happen Here DVD is current and well put together and sets the tone well for the responsibility that schools, law enforcement and communities have in the area of school security planning and preparedness. . . . Thanks for the information and your agency’s efforts in this important issue.”

“I have received the information and it matches what we need here in Tillman County perfectly!”

“I did get the chance to review the video and I feel it is what I need to hand out to my class. I will order additional copies as time gets closer and I get a good head count. . . . I always try to give my participating students additional resources than the course material alone. This will be great for them to take back to their respective agencies to share.”
School Bus Security – A 21st Century Approach. This safety training video, produced by the Georgia Emergency Management Association, presents the basics of school bus security. It can be used by law enforcement in cooperation with school management personnel.

“We are currently looking to update some of the products so they can be more readily available online and to reduce production costs,” Ball said. “Techniques change and computer platforms change, so we are considering ways to update the products.”

For more information, contact Danny Ball, SRTB-RC director, at dball@srtbrc.org.

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). These agencies 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 as well as rural, tribal and border agencies. Traditionally underserved and underrepresented, these agencies often cover large geographical areas 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.

Highlighted activities include:

- Hosted a Technology Institute for Rural Law Enforcement (RLETI) in August 2013. A total of 424 individuals have attended RLETI sessions. Each participant’s U.S. Representative and Senators received a copy of the Institute’s after-action report.

- Exhibited/presented at 27 conferences, including the International Association of Chiefs of Police, National Sheriffs’ Association, FBI National Academy Associates, International Law Enforcement Educators and Trainers Association, and National Native American Law Enforcement Association, as well as many state-level sheriffs and chiefs conferences. Staff made 175 outreach contacts at these events.

- Produced and distributed more than 18,800 CDs and DVDs, 12,334 directly related to school safety topics.
Responded to 1,006 requests for assistance with the Federal Surplus Property Program (also known as the 1033 Program).

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.
In June 2013, the National Institute of Justice (NIJ), the Federal Aviation Administration (FAA) and the U.S. Department of Homeland Security jointly hosted a workshop that addressed regulations regarding the use of unmanned aircraft systems (UAS), NIJ evaluation programs, UAS privacy issues, operational considerations, lessons learned and best practices. Approximately 200 practitioners and manufacturers attended the workshop.

The Law Enforcement Aviation Technology Program (LEATP), in cooperation with the Miami-Dade Police Department, produced a 19-minute video that was used as one of the educational components in the workshop to help introduce participants to the process of implementing a UAS program and to help alleviate some of the participants’ concerns about the technology.

The workshop, titled “Pre-Flight Briefing: Public Safety Guidance on Unmanned Aircraft Systems Operations,” took place in Annapolis, Md., on June 11-13. Preparation for the video, however, started months before. Danny Ball, director of the Small, Rural, Tribal and Border Regional Center (SRTB-RC), which operates LEATP, credits NIJ Senior Law Enforcement Program Manager Mike O’Shea for coming up with
the idea for the video – O’Shea suggested that the program work with Miami-Dade, an early adopter of the technology. After discussing the video and then developing an outline, Ball and Aviation Program Manager Darian Williams accompanied staff from a video production company to Miami, where they spent a day with the department’s aviation unit. Representatives from the FAA observed the filming to ensure accuracy and the National Center also contributed to the effort, conducting an interview with James H. Williams, FAA Unmanned Aircraft System Integration Manager, in his metropolitan Washington, D.C., office. The video also includes interviews with Lt. Calvin James, Miami-Dade Police Department Special Response Team commander, and Sgt. Andrew Cohen of the department’s Special Patrol Bureau. The two officers talk about the importance of training and working within the defined “common process,” along with other issues.

“The video addresses some of the concerns that have been raised about preserving privacy by showing how noisy the aircraft is, and looks at the regulations currently in place. It also provides a high-level overview of what a department needs to do to implement the common process devised by the FAA and DOJ,” Ball says. “In addition to showing it at the workshop, we distributed it to the attendees on a thumb drive. The response we received was overwhelmingly positive.”

Ball adds, “Viewers learn what it can be used for and where it doesn’t fit. It is just a good way of showing how a UAS can support, not replace, a tactical unit.”

The video can be viewed on the SRTB-RC YouTube channel at http://www.youtube.com/watch?v=jys4dFi_DDE. By year’s end, it had been viewed more than 1,000 times.

**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.

Highlighted activities include:

- On Feb. 15, at approximately 8:25 a.m., Sgt. Larry Schrade of the Aiken County (S.C.) Sheriff’s Office was piloting a Sky Arrow 600 Sport on a mission to gather intelligence for
an upcoming narcotics operation. Near the conclusion of the flight, Schrade responded to a call about a suicidal person. As the first officer to arrive on the scene, he immediately established a perimeter to contain the subject. After approximately 90 minutes of circling the perimeter, Schrade located the subject and directed units to the person, who was detained without incident and transported to a local hospital for evaluation.

On July 17, Pilot Corporal Greg Russell and Tactical Flight Officer David Cook of the Guilford County (N.C.) Sheriff's Office were conducting a patrol flight in an area that had experienced a recent increase in daytime residential burglaries. During the mission, the flight crew responded to a residential burglary near Greensboro. Air support and a K9 officer attempted to locate the suspect after a perimeter had been established. After approximately one hour, the search was called off and the flight crew returned to the airport to refuel. Before leaving the airport for another mission, the flight crew was notified that the suspect had carjacked a vehicle in the area of the burglary; they subsequently learned that the stolen car and suspect had been located and were involved in a vehicle pursuit. The suspect led deputies on a chase through three counties before jumping from his vehicle and running onto a dead-end street. The flight crew helped establish a perimeter and then followed up on citizen tips to locate the car and the suspect. When the vehicle was detained during a traffic stop, a passenger in the vehicle ran into a wooded area with patrol officers in pursuit. While the successful foot pursuit continued, Cook monitored the fleeing car and directed officers to its location in front of a residence.

On July 29, at approximately 3:30 p.m., the Escambia County (Ala.) Sheriff's Office received a call from a homeowner who found a burglary in progress on his return home. Pilot Mike Lambert and Tactical Flight Officer Brandon Burkett responded to the scene in a Powrachute Airwolf-powered parachute and began searching the area surrounding the residence. The flight crew spotted the two suspects from the air and directed K9 units to their location. Officers took the suspects into custody without incident.

On Aug. 12, just prior to dusk, Captain Shannon Smith of the Somerset (Ky.) Police Department was piloting an AutoGyro Calidus on a mission to inspect several points of infrastructure around the city when he heard a radio call about a male juvenile walking alone on a busy secondary street. Smith quickly located the child in a yard far away from the original call and directed patrol units to the scene, where they helped reunite the child with his par-
ents. Smith later learned that the child was autistic and had left home without his parents’ permission or knowledge.

- On Aug. 16, at 1:05 p.m., Pilot Glynn Hall and Tactical Flight Officer Curtis Crump of the Ellis County (Texas) Sheriff’s Office had just taken off in a Tecnam P92 Eaglet on a mission to photograph two suspected “chop shops” when they were diverted to a report of a vehicle theft in progress. It was reported that the suspect was driving a blue truck and pulling a flatbed trailer. The officers located the truck, which was hauling the stolen vehicle on the trailer, and directed ground units to the scene, where officers arrested the driver. The trailer proved to be stolen as well.
National Institute of Justice (NIJ) Technology Institutes bring together professionals to discuss a variety of topics, including the need for better body armor, the lack of resources for training, the need for better surveillance inside correctional facilities and difficulties encountered in the use of offender tracking devices.

In 2013, however, NIJ recognized the pervasive seriousness of issues related to contraband cell phones in prisons and jails and focused an entire Technology Institute for Corrections (CXTI) on this one issue.

“All of the attendees were involved in some facet of this issue. We thoroughly vetted their presentations and worked to make sure it was a well-rounded event and that presentations were not redundant,” says Jack Harne, NIJ Corrections Program Manager.

The 2013 CXTI took place in Annapolis, Md., on Aug. 27-29. From a pool of 40 applicants, NIJ selected 20 corrections officials representing 19 states. Of the 20 participants, 19 represented state correctional agencies and one was from the city of Philadelphia. Staff from the...
National Law Enforcement and Corrections Technology Center (NLECTC)-National and the Corrections Technology Center of Excellence (CoE) coordinated the selection process. The Sensor, Surveillance, and Biometrics (SSB) CoE provided assistance by arranging for a subject-matter expert to attend the sessions; SSB CoE plans to use the content of the Institute to guide research and development plans.

“The basic premise was the need to look at the issue of cell phones in corrections. The Institute allowed participants to see how different prison systems combat the same problem in different ways. For example, with regard to staff members’ bringing in phones, some agencies use metal detectors. Others search all employees on entering and exiting the facility, and yet others try to invoke a culture of professionalism to combat the problem,” Harne says. He added that the issue has received national media attention recently due to incidents such as a death row inmate’s use of a contraband cell phone to threaten a senator in Texas and the use of cell phones to help facilitate escape attempts in Nevada (successful) and New York (unsuccessful.) “We also added a discussion forum session and the information that came out of that was tremendous,” Harne says.

That discussion forum concluded the program, which mainly focused on participant presentations in earlier sessions. In those presentations, topics included technologies devoted to cell phone detection, defeating cell phone signals within prisons and using managed access.

Several general themes emerged from an analysis of the evaluation responses:

- Participants unanimously agreed that CXTI is a worthwhile event and should continue, with possible expansion through webinars. Mike O’Shea, NIJ senior law enforcement program manager, encouraged participants to tell NIJ leadership what they think about the value of the Institute.

- Contraband cell phones enter correctional facilities through three main routes: carried by family members, brought in by staff and thrown over perimeter barricades for later retrieval by inmates or staff.

- Attendees made several suggestions about how NIJ can best serve the corrections community. Some participants suggested either webinars, online training or workshops. Several attendees expressed a desire for this type of event to take place by region. Some participants suggested having vendors attend so some of the technologies could be displayed
in a hands-on manner. Overall, the evaluations were extremely positive; the only negative comments were in regard to logistics.

“I think due to the success of this Tech Institute, we will plan future events that concentrate specifically on other correctional issues,” Harne says.

Institute Structure

The 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 are designed to serve the interests of law enforcement officers from large, medium, small and rural agencies as well as corrections personnel. The inclusion of speakers from other countries provides an international perspective on technology issues. In 2013, 67 practitioners attended three separate institutes. Participants came from 51 U.S. states and territories and five other countries.

During the Institutes, participants present on a technology challenge their agency has solved or one their agency currently faces. At the end of each Institute, participants are asked to complete a survey to evaluate its 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 discussed shared, multiagency projects.

Technology Institute for Law Enforcement

The Technology Institute for Law Enforcement (LETI) took place in Annapolis, Md., on June 2-6. From the 62 applicants, NIJ and staff from the National Center selected 32 officers representing 21 states, the District of Columbia, Ireland, Brazil, Albania, Kosovo and Great Britain.
LETI introduced attendees to the NIJ Office of Science and Technology mission, projects and staff. It also included presentations featuring past Institute alumni. Hands-on technology demonstrations were held one afternoon at the Bay Bridge Airport, and participants had the opportunity to fly in NIJ Law Enforcement Aviation Technology Program aircraft. Participants also made presentations on a variety of technology projects, including the new wave of social media communications channels, records management systems, major city fusion and operational command centers, innovative camera surveillance systems and implementation of 4G mobile data systems.

Several general themes emerged from an analysis of the evaluation responses:

- There was unanimous agreement that the Institute is a worthwhile event that should continue and possibly be expanded with regional conferences focusing on more in-depth training or specific areas of technology.

- There was general agreement on the positive value brought by the international participants. In turn, the international participants took a number of beneficial concepts back to their countries, especially in the areas of records management projects, data storage and sharing initiatives, and various video camera systems.

- Social media and its place in law enforcement is becoming a very important topic. It represents an instantaneous channel for an ongoing dialogue between the community and law enforcement agencies. There is a need to define legitimate uses for it and to establish guidelines for implementation within the context of the law enforcement mission. As an investigative aid, monitoring social media sites has great potential benefit. As a tool for community engagement, if handled properly it can improve the public’s perception of the agency and enhance overall agency performance through community partnerships and accountability.

“I wanted to tell you that the conference was the best law enforcement training I have ever been to. I started my police training at 16 years old as a Police Explorer and have been riding around in police cars ever since. After 28 years of police training, I am so happy I was given an opportunity to participate in the Institute.”

Capt. Aaron Rose, Stockton (Calif.) Police Department
Technology Institute for Rural Law Enforcement

The Technology Institute for Rural Law Enforcement (RLETI) took place in Annapolis, Md., on Aug. 12-15. The Institute is sponsored by NIJ through the Small, Rural, Tribal and Border Regional Center (SRTB-RC).

RLETI included 15 participants from law enforcement agencies in 11 states. Participants shared a challenge or success story from their agency related to the use of technology in the field of law enforcement. Participants networked with their peers, SRTB-RC and NIJ staff, and other presenters. This created a new set of available resources for them to draw on. Participants were also introduced to the vast resources provided through current and emerging NIJ projects.

In addition to giving their presentations, participants learned about the mission and services of SRTB-RC, NIJ and the NLECTC System. They also received a complete briefing on the Defense Reutilization and Marketing Office (also known as the Federal Surplus Property Program or 1033 Program). Attendees participated in hands-on demonstrations of technologies such as the use-of-force simulator, light sport aviation technologies, through-the-wall sensors and unmanned aerial systems.

All participants said their experience and the information they received was well worth the time. Most of them remarked that if their agency had to cover the cost, they would not have been able to attend.

For more information on NIJ's law enforcement technology institutes, contact Senior Law Enforcement Program Manager Mike O'Shea at (202) 305-7954 or by e-mail 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 e-mail at jack.harne@usdoj.gov.

“Thank you again for the opportunity to be chosen to attend the conference last week. I was extremely impressed by the professionalism and how organized your staff was.”

Sheriff Steven McCain,
Grant Parish, La.
When officers need to investigate an unwitnessed vehicle crash, especially a fatal one, they can usually find plenty of physical evidence: tire tracks, skid marks, broken trees, damaged guardrails and, of course, the vehicle itself.

Unless, of course, it ends up under water.

Lt. Michael Mitchell of the Texas Parks and Wildlife Department says that sometimes he envies officers who work on the 29 percent of Earth’s surface not covered by water: “In Texas, my agency is the primary water patrol agency. We were looking for persons or evidence under the water by using either hooks, which is a laborious process, or divers, which is an inefficient and expensive process, and we wanted to find a way to do it better.”

The way that Mitchell devised of “doing it better” involved taking off-the-shelf technology used for commercial and recreational fishing and putting it to a different use. Using a side-scan sonar imaging device, which is typically hard-mounted into one vessel, Mitchell devised a portable box, power supply and transducer mount that can be used in any available boat on the fly, “including one belonging to a civilian volunteer who is just in the right place at the right time to help expedite the search. We’ve been doing this for more than six years. It’s passé, it’s proven and it’s in place.

A former member of the U.S. Navy, Mitchell knew that the military used similar, but expensive, technology. In contrast, a setup similar to that used by Texas Parks and Wildlife costs only a few thousand dollars yet produces vitally important results. He explains that every drowning or other underwater investigation has its own unique characteristics, and recovery can often take many hours or even many days. However, using side-scan sonar technology, Texas Parks and Wildlife has seen success in as little as 30 minutes. In that particular incident, other agencies had used manual searching methods for many hours before the device arrived. Within 30 minutes, the device located three specific areas of interest and divers investigated and located the victim, a 14-year-old boy who went swimming with friends in a flood-swollen river. (The two other boys swam to safety).

“It’s not average, but it is a great success story,” Mitchell says. “Every drowning event is personal because it affects a family. With this device, I’m confident that we can at least decrease the amount of time a family is suffering the pain of not knowing. We know it at least puts us in areas of interest more so than manual hook and line dragging.”

Investigating officers can keep a device in their back seats because it takes up only a few square feet of space. More than 100 side-scan sonar units are now in use throughout Texas; however, in such a large state, an official vessel could still be hours away from the scene. Thus, in many cases officers have welcomed volunteer assistance and mounted the device in a personally owned watercraft.

Although the device can be, and has been, mounted in many types of boats, Mitchell cautions that an individual must be trained to interpret the sonar images that result. To help with that interpretation, he teaches a multi-day training course that includes classroom sessions and a field exercise to find an object in a lake. Students start by studying images of more easily identifiable objects, such as a sailboat that sank off the coast of Florida and an airplane immersed in a lake, and move on to more obscure results. Key points emphasized in the training include because the technology sweeps across the bottom of a body of water, the investigating boat will pass the object before the officer sees the image; therefore, it might sometimes be easier to identify an object from its shadow rather than its actual image. Side-scan sonar also has its shortcomings; for example, it cannot identify objects as small as a handgun, which often sinks into the mud and becomes almost impossible to find through any means.

“The images admittedly are difficult to interpret. In our investigations, we also use photography, including aerial photography, and combine the results. We use free software to help pull it all together,” he says.

Investigators outside Texas who are interested in the technology could start by researching side-scan sonar technology on the Internet, then contact Mitchell for more information. Mitchell says, “A lot of people might want to patent this type of portable transducer concept and sell it, but I’m the opposite. I just want to help.”

The following articles, originally published in e-TechBeat, give insight into the public safety professionals who attend Technology Institutes and the value they bring to the table.
For more information on Texas Parks and Wildlife’s use of side-scan sonar in underwater investigations, which was the subject of a presenta-
tion at the June 2013 NIJ Technology Institute for Law Enforcement, contact Lt. Michael Mitchell at michael.mitchell@tpwd.texas.gov.

MARYLAND USES MANAGED APPROACH TO MAKING CELL SERVICE “DISAPPEAR”

Sheltering the glow from the cell phone with his body in the late hours of the night, he’s amazed by what he sees: five bars! Five, instead of the weak signal he usually sees inside his cell. But tonight, the calls won’t reach the drug dealer outside the prison or his girlfriend in another state in spite of those five bars. For that strong signal comes not from a commercial carrier, but from the managed-access system the facility implemented that day.

In April 2013, the Maryland Department of Public Safety and Correctional Services implemented a managed-access project in the Metropolitan Transition Center in downtown Baltimore. According to Correctional Operations Information Technology Manager Jay Miller, the department immediately began to notice a drop in the number of contraband cell phones that its security sweeps located: “When we turned it on, the number of contraband cell phones located dropped immediately, and it has continued to drop. The number of searches remained consistent, it isn’t like we are searching less. And at the same time, the number of calls being made through the inmate phone system increased. We monitor a lot of statistics and they all show it’s doing what it’s supposed to do.”

Managed-access systems are scaled-down versions of all cellular carrier technologies in an area. Cellular power is transmitted within the perimeter of the facility, forcing cell phones to sync with the system. This system only allows calls from authorized cell phones and all 911 calls to go through. It works by using the International Mobile Equipment Identity, cellular phone number, mobile device hardware ID and electronic serial number.

According to Miller, fluctuating cellular power at any given tower presents one of the greatest challenges for a managed-access provider because cellular providers frequently make minor adjustments in power and are under no obligation to inform managed-access vendors.

*There are a number of towers in downtown Baltimore, and our managed-access vendor has to walk a fine line to balance the levels. There may be an area in the yard where signals get through at times, but for an inmate to take a phone out of a cell and try to find a weak spot, it’s not worth the risk of being caught. The safest place for an inmate to use a phone has been in the cell, after count, when no one is going to be around for a while, and we’re sure there’s no access now in the housing units,” Miller says, adding “We do test it by sending officers out once a month to try to make calls from various areas.”

Maryland correctional officials researched a number of different technologies before selecting a managed-access vendor. “We decided that making the phones completely inoperable was the best approach. Using a passive technology would take a lot of staff resources because you have to immediately go out and find them as soon as you detect them. Theoretically, with managed access, you stop them immediately and you can go find them later, but we’ve found that the inmates are getting rid of them on their own. The inmates are deciding it’s not worth keeping them just to take pictures.”

Maryland has enough confidence in the project at the Metropolitan Transition Center that when a number of problems surfaced at the nearby Baltimore City Detention Center, the department began an emergency procurement to start managed access at that facility. Miller says that most of the contraband cell phones found in the state come from those two facilities, and that it’s a far different story in the rural western and eastern areas of the state.

“You really have to look at the return on your investment to decide if it’s worth it. If you have a rural facility where you find three cell phones a year and cell service may be spotty anyway, it’s probably not worth the cost.”

For more information on Maryland’s use of managed access, contact Jay Miller at (443) 250-4695 or email jemiller@dpscs.state.md.us. This technology was the subject of a presentation at the August 2013 Technology Institute for Corrections.
Maximizing Resources Through Online Connection and Social Media

Outreach to the criminal justice community is an essential component of the National Law Enforcement and Corrections Technology Center (NLECTC) System. Although attending conferences is a vital part of NLECTC’s activities, virtual outreach with expanded use of online resources and social media has gained in importance as a means to lower costs and reach more practitioners (see exhibit 4).

Use of social media can facilitate communication, collaboration and exchange of ideas. The instant communication can drive awareness of issues and help establish relationships with the target audience.

“NLECTC’s outreach efforts have changed with the times,” says Kate Poindexter, social media and Internet content developer for NLECTC-National. “While we still have the same goal - informing law enforcement officials about new technology, training and applications to assist them in their jobs - we understand that we can reach people in new ways using new media.”

NLECTC-National is the entry and coordination point for requests for assistance and information. During the year, the outreach team at
NLECTC-National helped law enforcement and corrections practitioners with their technology challenges by responding to inquiries using Internet search engines and resources such as www.justnet.org, the NLECTC website, and the websites of the National Institute of Justice (NIJ), International Association of Chiefs of Police (IACP) and National Sheriffs’ Association. Queries were also handled by referral to external subject-matter experts known to NLECTC, such as participants in NIJ’s Law Enforcement and Corrections Technology Institutes, past members of NIJ’s Technology Working Groups and staff at the NLECTC System’s Regional Centers and Centers of Excellence. Staff assisted with or responded to approximately 1,900 inquiries during the year, providing information, publications and referrals as required.

In 2013, NLECTC-National staff attended conferences and trade shows to meet criminal justice practitioners and exchange information. Approximately 11,700 NLECTC publications were distributed at 15 conferences and meetings, including the annual IACP conference and those of the Maryland Chiefs of Police Association and Maryland Sheriffs’ Association (joint conference), and the Tennessee Association of Chiefs of Police.

The National Center has enhanced its outreach capabilities, incorporating a mix of conferences, exhibits, meetings and Web-based communications. It produces videos of interest for practitioners and posts them on its YouTube channel (www.justnet.org/youtube). Staff and subject-matter experts also reach out online, producing webinars and chats.
During 2013, NLECTC-National outreach staff increased their use of the “virtual site visit” as a cost-effective way to leverage the distance-learning strengths of the JUSTNET website, and also to guide callers to the various resources available on the NIJ and National Criminal Justice Reference Service websites. The technique is scalable to allow for both quick, specific answers to queries and more extensive overviews of these resources.

Publications, products and outreach materials and activities are also promoted on social media (see exhibit 5). NLECTC’s Facebook friends and Twitter followers read about NLECTC and interact with staff daily. Tweets can be sent out with targeted information and to tell readers where to find expanded information on a particular topic.

The NLECTC website and the e-TechBeat newsmagazine feature interactive elements that include interviews, videos, presentations and surveys. An enhanced mobile app for the newsmagazine allows subscribers to read and react on the go. (See the section on e-TechBeat and the mobile app on p. 5). Rounding out the mix is the weekly news summary JUSTNET-News, a free publication delivered straight to subscribers’ inboxes. JUSTNET-News features NIJ and other U.S. Department of Justice research, publications, products and events, as well as abstracts of articles on law enforcement and corrections technologies that have appeared in newspapers and periodicals online.

**School safety.** In response to the growing interest in educating students, staff and communities about school safety activities, NLECTC launched www.schoolsafetyinfo.org. The website lists resources for schools and public safety professionals, and features success stories from the field.
“Law enforcement and other first responders understand the need to communicate effectively with the community to prepare, respond and recover during an incident,” says Poindexter. (For a detailed discussion on SchoolSafetyInfo.org, see p. 19.)

**JUST-Link.** JUST-Link, NLECTC’s online chat forum, allows prescreened members to interact with each other on a secure site to share information about trends, technologies, equipment and training opportunities. Only verified criminal justice professionals are allowed to access this site. JUST-Link has been enhanced to feature questions of the week and other regular features that stimulate criminal justice professionals to communicate and share information.

Through these features and more, the NLECTC System will continue to reach out to the law enforcement and corrections communities using the most up-to-date, useful and effective communications tools available.

**Highlights**

Although the NLECTC System as a whole placed increasing emphasis on the use of the Internet and social media during 2013, the component centers of the NLECTC System also attended, exhibited at and presented at more than 40 events. Some were national in scope, some were local; some had thousands of attendees, others had only a few. They also conducted a webinar, moderated a workshop, facilitated three meetings, hosted three meetings and made nine presentations.

**EXHIBIT 6. 2013 NLECTC SYSTEM GROUP STATISTICS**

<table>
<thead>
<tr>
<th>Groups Stats</th>
<th>General stats across your NLECTC group.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incoming Messages</td>
<td>865</td>
</tr>
<tr>
<td>Sent Messages</td>
<td>451</td>
</tr>
<tr>
<td>New Twitter Followers</td>
<td>307</td>
</tr>
<tr>
<td>New Facebook Fans</td>
<td>147</td>
</tr>
<tr>
<td>939 Interactions</td>
<td>939</td>
</tr>
<tr>
<td>By 710 Unique Users</td>
<td>710</td>
</tr>
<tr>
<td>264.7K Impressions</td>
<td>264.7K</td>
</tr>
</tbody>
</table>
January

- The director of the Communications Center of Excellence (CoE) attended the Wireless Innovation Forum Annual Technical Conference in Washington, D.C., on Jan. 8-10. As part of the conference, the director moderated a workshop titled “Opportunities and Challenges for LTE in Public Safety” and chaired a meeting of the Wireless Innovation Forum Public Safety Special Interest Group. The director also attended the Association of Public-Safety Communications Officials Emerging Technology Forum in Anaheim, Calif., on Jan. 30-31.

- Small, Rural, Tribal and Border Regional Center (SRTB-RC) staff exhibited at the County Sheriffs of Colorado Association Conference in Loveland on Jan. 9-10 and the Idaho Chiefs of Police Association Conference in Boise on Jan. 28-30.

- Corrections CoE staff participated in the American Probation and Parole Association (APPA) Conference in Phoenix on Jan. 12-15. While there, staff facilitated the APPA Technology Committee Meeting and networked with attendees and vendors on technology issues. The CoE also participated in the American Correctional Association (ACA) Conference in Houston on Jan. 25-29. While there, staff facilitated the ACA Technology Committee Meeting and interacted with attendees and vendors who had a particular focus on cell phone forensics and cell phone detection/interdiction efforts.

February

- Forensic Technology CoE (FT CoE) staff exhibited at the Feb. 1 American Academy of Forensic Sciences (AAFS) Meeting in Atlanta, titled “Forensics Without Borders – How NIJ Funded Research Impacts the World,” and also hosted a meeting for NIJ grantees. Staff also exhibited at the Feb. 19 AAFS meeting in Washington, D.C., titled “The Research After Eureka – How NIJ Funded Research Supports the Science of Forensics,” and hosted another meeting for NIJ grantees.


- On Feb. 21, the deputy director of the States, Major Cities and Counties (SMCC) Regional Center attended a meeting of the Metropolitan Washington Council of Governments Police
Technology Subcommittee to discuss the impact of social media on the law enforcement and intelligence communities. Topics addressed included how fundamental shifts in the illicit use of technology through hidden identity (The Onion Router, or TOR), social networking and alternative reality gaming have the potential to seriously hamper law enforcement and intelligence efforts.

March

- SSB CoE staff attended the Gun Safety Technology Workshop organized by NIJ and hosted at the U.S. Department of Justice headquarters on March 13.

- SRTB-RC staff exhibited at the Western States Sheriffs’ Association Conference in Las Vegas on March 18-21.

April

- On April 23, SSB CoE staff attended the Biometrics Industry Government Standards and Interoperability Group Meeting, jointly sponsored by the IJIS Institute and the FBI’s Criminal Justice Information Services Division, in Morgantown, W.Va.

- SRTB-RC staff exhibited at the New Mexico Sheriffs’ Association Conference in Albuquerque on April 3-4, the Wyoming Statewide Law Enforcement Academy Conference and the International Law Enforcement Educators and Trainers’ Association Conference in Wheeling, Ill., on April 15-20.

May

- Representatives of the FT CoE presented at the Emerging Trends in Synthetic Drugs Workshop in Gaithersburg, Md., on April 30 to May 1. The U.S. Drug Enforcement Agency and the National Institute of Standards and Technology hosted the event.

- SMCC staff exhibited at the GOVSEC Conference in Washington, D.C., on May 14-15. Staff supported the exhibition of a gyroplane for the NIJ Law Enforcement Aviation Technology Program by a representative of the Princess Anne County (Md.) Sheriff’s Office, a participant in the program.
June

- SMCC and SRTB-RC staff collaborated on an exhibit at the National Sheriffs Association Annual Conference in Charlotte, N.C., on June 23-25.


- On June 26-27, an SMCC staff member attended a U.S. Department of Homeland Security (DHS) Next Generation Personal Protective Ensemble Discussion as a member of the DHS First Responder Resource Group. This group – together with representatives of the first responder community, public safety clothing manufacturers (e.g., Gore-Tex, DuPont), the U.S. Department of Justice, the International Association of Fire Fighters and the International Association of Fire Chiefs – is looking to create a basic duty uniform for police, fire and emergency medical services that is resistant to ballistic, biological, chemical, cut and temperature factors and can provide enhanced protection compared to current duty uniforms.

- SRTB-RC staff exhibited at the California State Sheriffs’ Association Conference in Truckee; the Montana Sheriffs’ and Peace Officers’ Association Conference in Butte; and the Wyoming Statewide School Resource Officer/DARE Conference in Torrington.

July

- On July 17, Corrections CoE staff, along with the Association of State Correctional Administrators, conducted a webinar on contraband cell phone use in correctional facilities; 105 participants registered.

- SMCC staff exhibited at the Tennessee Association of Police Chiefs Conference in Kingsport on July 17-18 and at the School Safety Advocacy Council Conference in Las Vegas on July 22-23.

- During July 2013, SRTB-RC staff gave presentations at the Sheriffs’ Association of Texas Conference in Corpus Christi, the Tennessee Association of Chiefs of Police Conference in Kingsport and the Missouri Sheriffs' Association Conference in Springfield. Staff also exhibited at the following conferences: Air Borne Law Enforcement Association in Orlando, Fla.; School Safety Advocacy Council in Las Vegas; Kentucky Chiefs of Police in Lexington-
ton; FBI National Academy Associates in Orlando, Fla.; and Louisiana Chiefs of Police in Lafayette.

- Corrections CoE, Communications CoE and SMCC staff participated in the APPA Summer Conference in Baltimore on July 28-31.

**August**

- SMCC staff exhibited at the National Organization of Black Law Enforcement Executives Annual Conference in Pittsburgh on Aug. 4-6.

- The FT CoE funded four presentations highlighting NIJ-funded research at the International Association for Identification Meeting in Providence, R.I., on Aug. 4-9.

- Corrections CoE staff attended the ACA Conference in National Harbor, Md., on Aug. 9-13.

- SRTB-RC staff presented and exhibited at the North Dakota Peace Officers’ Association Conference in Minot on Aug. 14-16 and at the New Mexico Sheriffs’ Association Conference in Albuquerque on Aug. 10-13. Staff also exhibited at the Kentucky Prosecutors’ Conference in Lexington on Aug. 21-23.

**September**


- FT CoE staff exhibited at the Midwestern Association of Forensic Scientists Meeting in Dayton, Ohio, on Sept. 30 to Oct. 4. The director of the CoE gave a presentation titled “The Role of Forensic Science in Overturned Convictions - Lessons and Opportunities.”

- SMCC staff exhibited at the Maryland Chiefs of Police Association and Maryland Sheriffs’ Association Annual Conference in Ocean City on Sept. 8-9.
SRTB-RC staff exhibited at the Kentucky Sheriffs’ Association Conference in Bowling Green on Sept. 9-13 and at the National Native American Law Enforcement Association Conference in Las Vegas on Sept. 18-21.

SSB CoE staff attended the Biometrics Consortium Conference in Tampa, Fla., on Sept. 16-19.

On Sept. 19, the FT CoE and NIJ hosted a policy forum on Capitol Hill titled “Investigating Sexual Violence – Emerging Solutions and Best Practices.” About 80 individuals attended in person and another 295 participated online.

October

Staff from NLECTC-National and SRTB-RC supported NIJ by exhibiting at the 120th Annual International Association of Chiefs of Police Conference and Exposition in Philadelphia on Oct. 19-22. Staff distributed 4,651 publications to booth visitors, including all 500 available copies of Sharing Ideas & Resources to Keep Our Nation’s Schools Safe!, a just-released NLECTC System publication. Practitioners from the police departments in Tomball, Texas, and Somerset, Ky., shared the exhibit space; they demonstrated two gyroplanes as part of the NIJ Law Enforcement Aviation Program. In addition, a representative from the Federal Aviation Administration gave booth visitors information on the approval process for using small Unmanned Aircraft Systems as law enforcement resources.

FT CoE staff gave a presentation titled “Forensic Technology Center of Excellence: Making it Real…Moving Technology from R&D to Your Laboratory” at the California Association of Criminalistics Meeting in Modesto on Oct. 21-25. Staff also attended the International Association of Forensic Nursing Conference in Anaheim, Calif., on Oct. 21-24; and the Society of Forensic Toxicologists Meeting in Orlando, Fla., on Oct. 27 to Nov. 1.


November

SRTB-RC staff exhibited at the South Carolina Criminal Justice Training Conference in Myrtle Beach on Nov. 17-20.
For more information on NLECTC System outreach, contact Program Manager Mike O’Shea at (202) 305-7954 or by email at michael.oshea@usdoj.gov.
Guiding Agencies Toward Cell Phone Forensic Solutions

Many correctional administrators will say contraband cell phones are the most pressing security issue they face. Cell phones allow inmates to freely communicate with the outside world as well as with other inmates in the same or different facilities. The results can be dangerous: victim harassment, witness intimidation, gang activity coordination and more. In some cases, homicides have been facilitated through the use of contraband cell phones.

Correctional agencies are using numerous policy and technology approaches to combat this problem, resulting in tens of thousands of confiscated cell phones making their way to storage rooms nationwide. However, unlike the prison-made “shank” weapons that might be found during some of the same searches, contraband cell phones can be the proverbial “gold mine” of intelligence.

Joe Russo, director of the Corrections Technology Center of Excellence (CX CoE), points out that a forensic analysis of a phone “can yield a great deal of information about who the inmate communicated with. Incoming and outgoing calls, text messages, contact lists, photos and video files on the phone can provide important clues for investigators.”
All of this data can be analyzed in context with other data sources such as inmate accounting transactions and visiting records to enable investigators to identify linkages between inmates and their criminal associates."

Russo says it is important for correctional administrators to understand the issues associated with mining contraband cell phones for evidence. Cell Phone Forensics in a Correctional Setting Guidebook, a new publication produced by the CX CoE, is the second in a series of guides that began with the October 2011 publication of Greening Corrections Technology Guidebook. At the end of 2013, the draft document was in the final stages of pre-publication review.

The guidebook provides correctional administrators with a brief, yet comprehensive and informative, view of cell phone forensic technologies. It reviews the evolving role of cell phone forensics in correctional institutions and presents issues to consider when acquiring and implementing the needed technologies. It also addresses the opportunities and challenges involved in selecting and implementing cell phone forensics in correctional settings.

Methodologies used in preparing the guidebook included literature reviews of primary and secondary sources along with input from corrections practitioners and technical experts who are experienced in conducting forensic examinations of confiscated mobile devices. Primary author Dr. John S. Shaffer, institutional corrections program manager for the CoE, consulted with a number of subject-matter experts in the field (primarily individuals who work in cell phone forensic laboratories in a correctional setting).

“Correctional administrators need to understand their options. For the most part, correctional agencies don’t have any forensic capabilities, for cell phones or otherwise. Regional Computer Forensic Labs (RCFLs) and state police are typically overwhelmed and focus on law enforcement needs,” Russo says. “For that reason, they may want to evaluate the need to establish their own lab.”

To help correctional agencies with this decision, the guide explains the considerations that an administrator needs to work through: funding, training (both initial and ongoing), physical space requirements, possibly hiring someone from outside, legal issues, and evidence collection and retention. The guide also includes lessons learned and success stories from agencies around the country.
Some agencies have representatives on the Institutional Corrections Technology Working Group, which requested the development of the guidebook series. Books in the series are written in lay terms and provide an overview of a specific topic and information on where to go for more information.

**Highlights**

The CX 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 CX CoE 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 CX CoE helps transition technology from the laboratory into use by first adopters in the corrections community. In 2013, the CX CoE supported NIJ’s research, development, testing and evaluation (RDT&E) activities as follows:

- Coordinated the distribution of Field Search software. In 2013, criminal justice agencies submitted 708 requests for the software, which was downloaded 971 times. Criminal justice agencies from a number of other countries also requested the software. The CX CoE has received a total of 6,445 requests for the software and it has been downloaded 11,839 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, 31 persons from eight states and Canada qualified as CFSIs. The 115 CFSIs, who represent 31 states and two other countries, have trained 652 criminal justice personnel on the use of Field Search.

- Managed the Electronic Monitoring Resource Center, an online resource containing material related to electronic monitoring of offenders in the community. The site currently has 1,104 registered users and 565 documents that include vendor lists, sample procurement documents, evaluations, reports and news articles. Plans are in progress to expand the resource center to include content on all areas of correctional technology.
- Responded to 75 requests for technical assistance.

- Presented at a number of conferences, including events sponsored by the American Correctional Association (ACA), American Probation and Parole Association (APPA) and Association of Paroling Authorities International.

- Supported professional associations such as APPA and ACA, primarily through participating in their respective technology committees. Participated in an APPA webinar titled “Managing Risks Posed by Offender Computer Use.”

- Contributed content for articles appearing in professional journals, including e-TechBeat and Perspectives, the APPA journal.

- Managed the Offender Tracking Standard Special Technical Committee and its efforts to develop the first standards and testing program for offender tracking system technologies.

- Supported the 2013 Technology Institute for Corrections, held in Annapolis, Md., on Aug. 27-29. The Institute focused on the issue of contraband cell phones in correctional facilities (see p. 31 for more information).

- Worked with a number of developers to assist in the transfer of technology to early adopter agencies.

- Managed the Institutional Corrections Technology Working Group (TWG) and the Community Corrections TWG, gathering and analyzing practitioners’ technology requirements and forwarding 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. The Center collaborated with the Association of State Correctional Administrators to conduct a survey of all state departments of correction on the extent of the contraband cell phone problem and potential solutions. The Center also presented two webinars on this topic for corrections practitioners.

- Published a monthly electronic newsletter that provides information on new developments in corrections technology. The newsletter has more than 4,600 subscribers.
Drafted a guide to help criminal justice agencies understand the issues to consider when offender tracking equipment and associated data can be called into court as evidence.

Began work on a project to develop an Information Exchange Packet Documentation for offender tracking data.

Began work on an operational evaluation of hand-held cell phone detector devices.

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.
Online Learning Leads to “New Math”

In this time of ongoing economic challenges, adding up the costs of session fees, lodging, transportation and food often equals training becoming one of the first items an agency drops from its budget. The Forensics Technology Center of Excellence (FT CoE) helps agencies get a different answer to that equation by offering an extended schedule of trainings that includes an online component.

“Our online forensic learning capabilities have allowed us to train and educate professionals in the forensic science industry at a lower cost and without the need for travel, lodging and time away from work,” says John Collins, FT CoE forensic science advisor. “We used the continued expansion of our online forensic learning platforms to educate several hundred online attendees in a number of relevant, contemporary subject matters.”

RTI International, host agency for the FT CoE, provides multi-license access to the Adobe Connect platform, giving the Center the technological capability to deliver online content. Collins notes that the landmark 2009 National Academy of Sciences report, Strengthening Forensic Science in the United States: A Path Forward, emphasized...
the need for more training and research, but the specific recommendations made in the report “weren’t in touch with current economic realities.” Therefore, adapting training to an online approach helps agencies meet the goals of that report in a different, less expensive, way.

“We’ve used the platform to train and teach forensic scientists on a number of issues. This includes some online workshops that are highly technical in content; for example, on synthetic cannabinoids and related political issues. We also did a series of roundtables with a focus on increasing the speed of crime laboratory instrumentation,” Collins says. “Adobe Connect also enables us to archive the events so that individuals who can’t participate in the live session can access the content later on.”

One event in particular used the platform so well that it led to a request for another major event later in the year. A policy forum at the National Press Club in Washington, D.C., in May included 40 attendees onsite and an additional 200 online. Both in-person and online attendees had the opportunity to discuss crime laboratory backlogs, focusing on their causes and how to address the problem. This 90-minute session received attention from the U.S. Department of Justice (DOJ), which asked the FT CoE to conduct a similar event on sexual assault investigation. This event was held in September at the Rayburn House Office Building. Policymakers, legislative staff and other stakeholders made up the 90 attendees; there were also 300 online attendees from across the country and around the world. Collins, the moderator, says that several legislators also stopped by to sit in on at least a portion of the event.

“These two events were stunningly successful. It was very exciting how they turned out: we were able to push out so much valuable content and give people access to valuable information while they stayed right in their own offices,” Collins says. In order to provide DOJ with requested metrics on the event’s success, the CoE team developed an Event Performance Statement (EPS) that allowed staff to record and communicate a variety of data associated with attendance, attendee activity and enthusiasm, and attendee satisfaction. “The EPS basically rates the performance of the event,” he says, “and provided DOJ with information that could be used to justify funding future events.”

The genesis for the EPS lay in a laboratory performance statement developed by Collins while he was the director of the Michigan State Police laboratory system. He offered it as a template to fellow CoE staff member Peter Stout, who was looking for a way to track and provide objective metrics. Stout then worked with other RTI International staff to refine the concept. Collins
hopes it can be refined even further in the future to provide better metrics on upcoming events, some of which are already scheduled for 2014.

“We have a really nice partnership ongoing with the American Society of Crime Laboratory Directors,” he says. “They became interested in our work after the event in D.C. and asked us to put on a seven-event webinar series that will continue into March 2014. This gives us visibility in the community, and as we become even better known, we expect more agencies to come to us with requests.

**FT COE PROVIDES 21 ONLINE LEARNING OPPORTUNITIES**

During 2013, the FT CoE used its online learning capabilities to present 21 different events, as follows:

- **NIJ-Funded Online R&D Research Series**
  - Workshop: Straight to the Bone: Advances in Forensic Anthropology; 517 registered, 188 completed.
  - Workshop: Falling Into Decay: Postmortem Interval and Molecular Autopsy, Parts I and II; 521 registered, 249 completed.
  - Workshop: Tarnished Gold Standard: Limited Quantity and Degraded DNA, Parts I and II; 311 registered, 152 completed.
  - Workshop: Pills and Particles: Toxicology and Linking Trace Evidence; 257 registered, 142 completed.
  - Workshop: Fingerprint Identification: Reliability and Accuracy; 356 registered, 233 completed.
  - Workshop: Applications of Higher Resolution Mass Spectrometry in Drug Testing; 676 registered, 389 completed.
  - Workshop: Using Genetic Results to Identify Human Remains; 531 registered, 195 completed.
  - Workshop: Gaining Speed with “Fast GC,” Practitioner’s Perspective; 150 registered, 99 completed.

- **Six scientific working group meetings, including the Scientific Working Group for Forensic Toxicology and Scientific Working Group on Bloodstain Pattern Analysis Meetings; 110 attendees.**

- **Workshop: New Advances in STR & Mitochondrial DNA, Ft. Worth, Texas, May 21-23; 210 registered, 77 completed, 32 onsite attendees.**

- **Workshop: New Developments in Visualization, Enhancing & Documenting Physical Evidence Found at Crime Scenes, Richmond, Va., June 11-12; 351 registered, 105 completed, 24 onsite attendees.**

- **Continuing Education Conference: Application of Higher-Resolution Mass Spectrometry in Forensic Toxicology, Sept. 23-24; 389 completed, 50 onsite attendees.**

- **Workshop: Human Identification in Mass Fatality Incidents, Washington, D.C., Nov. 12; 676 registered, 398 completed, 40 onsite attendees.**

- **Online Impression and Pattern Evidence Workshop Series**
  - Advanced Medical Imaging in Medicolegal Death Investigation; 924 registered, 411 completed.
“What’s really great about continuing with providing online learning is the savings we create for the attendees. We maximize the content and the agencies realize so much in savings,” Collins adds.

**Highlights**

Highlighted activities include:

- Disseminated NIJ-funded research and delivered technology assistance and Web-based technology transfer workshops to more than 10,000 registered practitioners.

- Showcased the FT CoE at the annual meeting of the American Society of Crime Laboratory Directors; this involved hosting a technology block in which FT CoE technology projects were presented and explained to crime laboratory administrators. In addition, disseminated NIJ-funded research through workshops at the 2013 American Academy of Forensic Sciences (AAFS) Meeting in Atlanta, 2013 AAFS Meeting in Washington, D.C., and 2013 International Association of Identification Conference in Providence, R.I.

- Hosted two Forensics Technology Working Group events in the Washington, D.C., area. At the meetings and in support of NIJ’s research, development, test and evaluation program, the FT CoE developed performance metrics and conducted an evaluation of NIJ-funded research to identify future technology transfer opportunities.

- Hosted Web-based training and dissemination of grantee presentations, attended by 1,669 participants.

- Hosted online presentations of FT CoE online roundtable discussions on a variety of forensic technologies and capabilities, attended by 524 participants.

- Evaluated eight new technologies; sponsored six technology transfer events, including two hands-on workshops; supported outreach to 42 events; and made 19 presentations on forensic technology to the forensic science community.
- Completed the development and population of an Access Database for R&D Portfolio Design & Data Entry for NIJ, which allows potential technology innovations resulting from previous NIJ projects to be identified and transitioned into practice.

- Negotiated the hosting of a Technology Transition Workshop with Duquesne University. Plans are currently underway for a 2014 event.

- Received NIJ approval for the transition of a Cheminformatic Database and Emerging Drug Expert Panel (emerging drug database) to the FT CoE for maintenance under an NIJ grant. This process was first initiated by a meeting hosted by the FT CoE in Washington, D.C., which convened stakeholders across government and commercial agencies that are involved in drug standards and in library and database efforts. Representatives from the U.S. Drug Enforcement Administration, National Institute of Standards and Technology (NIST), National Institute on Drug Abuse, manufacturers, library developers and universities attended the meeting. In May, the FT CoE presented the concepts at the NIST Emerging Drug Workshop in Gaithersburg, Md.

- Received a no-cost extension for partner West Virginia University (WVU) to support the “Evaluation of Existing Technologies for Novel Analysis and Probabilistic Interpretation of Organic and Inorganic Gunshot Residue.” This innovative technology involves Handheld XRF for GSR; several hundred samples were analyzed and showed BaPb and/or BaPbSb reliably on hand swabs that were collected after a single shot. WVU has collected several hundred expected false positive samples from police officers and gun range employees to begin an analysis. Collection of other reference samples is well underway and analysis is ongoing. The FT CoE plans to have 100 likely false negative controls, 100 likely false positive controls and 500 general population samples completed for the final report.

- Submitted a progress report on Magneto-Optical Sensors for Firearms Evaluation. Preliminary findings indicate that the sensor works well for the recovery of obliterated serial numbers in ferrous metals and stainless steel, but does not do well on non-ferrous metals. A number of challenges were recorded with regard to the sensor’s viewing and photo-capturing software. Also, as the sensor is susceptible to scratching, caution needs to be taken when operating the sensor on metal objects.
Hosted a Technology Transition Workshop in Richmond, Va., in June for 24 attendees; it was led by FT CoE partner Virginia Commonwealth University. During the onsite portion of the Evaluation 2D/3D Crime Scenes Scanners Workshop, attendees worked through a crime scene using various technologies (including post-documentation processing) at computer stations. Attendees also completed two hours of online pre-meeting training on each technology to prepare them for the onsite activities. Archival training sessions are available online. The FT CoE also hosted a web-based roundtable discussion of 2D/3D Crime Scenes Technology in November.

Hosted a two-hour Sexual Violence Policy and Practice Forum on Sept. 19; the forum convened experienced and knowledgeable subject-matter experts in various fields who contribute to the investigation and processing of cases involving sexual violence. The presenters discussed the complex relationship between law enforcement, science, medicine and the judicial system. They explained how innovative jurisdictional practices and scientific research that produces valuable solutions and insight can empower the criminal justice system to better respond to acts committed by sexual predators. The result of these enhanced approaches is the better collection of evidence, faster laboratory testing, improved case management and more reliable prosecution of offenders. A total of 375 people attended onsite and online; the archived presentation is available electronically.

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.
Predictive Policing Report Generates Positive Feedback

Following up on the work in the area of predictive policing detailed in National Law Enforcement and Corrections Technology Center System Annual Report 2012, the Information and Geospatial Technologies Center of Excellence (IGT CoE) published Predictive Policing: The Role of Crime Forecasting in Law Enforcement Operations (Predictive Policing) in September 2013. By year’s end, its various electronic formats had been downloaded more than 17,000 times.

IGT CoE Director John Hollywood says the publication has generated positive feedback from practitioners, commercial providers and others interested in seeing a comprehensive treatment of the subject: “It takes away mythology and points out where predictive policing can be useful. It debunks the myths, most notably the one that there is software that tells departments ‘where to go to pick up the criminals.’ ”

He added that commercial providers have found the publication useful in helping to determine future directions in software and service offerings. Hollywood also says that law enforcement agencies across the country have shown increased interest in predictive policing, and the
IGT CoE addressed a need by performing a comprehensive literature review and a number of related interviews to inform the contents of *Predictive Policing*.

“Some of the agencies where we did interviews were quite surprised to be told they were doing predictive policing. They were making very sophisticated forecasts but they didn’t know what it was called,” Hollywood says, adding that the authors also interviewed a number of major software providers and conducted informal focus groups at the 2012 International Association of Crime Analysts (IACA) and International Association of Chiefs of Police (IACP) conferences. The result is a publication that explains what predictive policing is, what it isn’t and how agencies can best put it to use. It covers major applications and use cases, tips and major pitfalls to avoid.

Written by Walter L. Perry, Brian McInnis, Carter C. Price, Susan Smith and Hollywood, *Predictive Policing* presents the following key findings and recommendations (these findings, along with a four-page executive summary and the complete guide, are available at http://www.rand.org/pubs/research_reports/RR233.html).

**Key Findings**

- Predictive policing methods fall into four general categories: methods for predicting crimes, methods for predicting offenders, methods for predicting perpetrators’ identities and methods for predicting victims of crime.

- Each category includes options for large departments that handle large amounts of complex data and for smaller departments that require only basic tools to manage and visualize small amounts of geospatial data. Available methods range from basic heuristic techniques to sophisticated, cutting-edge mathematical models.

- Predictive policing methods are not a crystal ball: they cannot foretell the future. They can only identify people and locations at increased risk of crime.

- The operational value of predictive policing tools is in their contribution to broader law enforcement strategies that use the tools’ risk assessments to inform resource allocation and problem-solving decisions.
The collection and use of data on individuals has raised a number of concerns about privacy rights and civil liberties. An understanding of the legal precedent, along with regular audits, public outreach strategies, and greater community involvement and buy-in, has helped police departments address these concerns.

**Recommendations**

- Predictive policing tools should be compatible with the data needs and capabilities of individual law enforcement agencies. Small agencies that investigate few crimes are unlikely to need much more than core statistical and display capabilities. Larger agencies with large volumes of incident and intelligence data will want to consider more sophisticated systems. They may also want to consider how well the systems disseminate and display key supporting information on recent crime and disorder, intelligence and policing activity in addition to the predictions themselves to better support decision-making at all levels.

- Developers should be aware of the major financial limitations that law enforcement agencies face in procuring and maintaining new systems, and they should avoid promising crystal ball-like capabilities when it comes to these systems.

- To be effective, predictive policing must include interventions based on analytical findings. Successful interventions typically have top-level support, sufficient resources, automated systems providing needed information and assigned personnel with both the freedom to resolve crime problems and the accountability for doing so.

- In all cases, law enforcement agencies should respect civil liberties and privacy rights. When implementing a predictive policing strategy, they should use good judgment in sharing information about possible offenders and victims, and they should work to involve and educate the community to address these concerns.

The team of authors that developed these findings and recommendations included a senior information scientist with significant data mining experience (Perry), a mathematician (Price), a research associate (McInnis), a crime analyst with decades of experience (Smith) and an operations researcher with 10 years of experience in both the technical and policy aspects of data mining (Hollywood), who says: “Everyone brought a different skill set. Susan was
especially helpful in providing the user’s perspective and finding analysts who had experience with the tools who were willing to be interviewed.”

The results of their teamwork came out in September, prior to the annual IACP conference in October. When Hollywood arrived at his IACP conference presentation session with a “stack of four-page executive summaries, I found out I couldn’t give them away. I kept hearing things like ‘I don’t need the summary because I’m already 120 pages into the book.’ “

**Highlights**

The IGT CoE is operated by the RAND Corporation as part of its Safety and Justice Program. It provides strategic planning, evaluation and outreach support to the National Institute of Justice (NIJ) for four portfolios related to information technology (IT) and analytics:

- Information-Led Policing.
- Geospatial Technologies.
- Operations Research.
- Modeling and Simulation.

Highlighted activities include:

- Completed the pilot Law Enforcement Advisory Panel. This event brought together practitioners from a variety of disciplines to identify operational needs that could be met with technological research and development. The panel separated into three breakout groups (tactical, crime analysis and investigations, and operational) that used some of the latest group brainstorming and decision-making techniques to identify, assess and prioritize needs. The in-person panel will be followed by an online advisory panel of hundreds of practitioners who will collectively refine and assess the needs that were discussed. It will be followed by additional in-person and online panels that will assess needs related to various criminal justice topics.
Continued the CoE’s strategic planning research and created a master database that tracks IGT needs, core IGT operational capabilities, the standards and testing “supply” available to support IGT capabilities (systems available to the field as well as recent NIJ research) and cross-cutting themes that capture similarities across groups of needs.

Completed a comprehensive study on automated license plate reader (ALPR) technology and its utility (and potential pitfalls) for law enforcement. The study addresses major use cases for ALPR technology and major considerations and tips for its use, with a special focus on privacy and security issues. The resulting guidebook will be published in 2014.

Completed a detailed assessment of more than a dozen geospatial analysis tools whose development was funded by the U.S. Department of Justice (DOJ). The CoE is evaluating the versions provided to DOJ at the end of the projects (as opposed to later commercial versions), performing technical assessments and obtaining operational perspectives by interviewing users of these tools. In addition to assessments of individual tools, the CoE has identified cross-cutting findings on DOJ-funded tool development and dissemination. These findings have to do with ways to extend support for tools past initial development, ways to enhance tool dissemination and ways to improve interoperability processes and standards to ease tool development and implementation. The study report will be published in 2014.

Completed research on a study examining general conditions under which law enforcement investments in IT are likely to pay off in terms of IT systems being associated with crime reductions, clearance rate increases and overall budget savings. The study report will be published in 2014.

Supported NIJ in the development of a survey that will assess law enforcement agencies’ geospatial analysis capabilities. The survey results will be disseminated in 2014.

Began research on the interoperability and affordability of key law enforcement IT systems, focusing on records management systems/computer-aided dispatch systems. Research to date includes identifying core needs and gaps for information exchange, barriers to information exchange, and resources and tools that will help improve interoperability and affordability. The study report will be published in 2014.
Began research on law enforcement’s use of mobile apps. Research to date has identified a number of core use cases, security issues and legal issues. The study report will be published in 2014.

Continued to provide technical assistance and assessment services on demand to agencies, technology providers and NIJ. Technical assistance in 2013 largely focused on predictive policing technologies, including presentations, panel discussions and webinars on predictive policing in general as well as teaching details of predictive analytics techniques at the 2013 IACA conference.

For more information on Information and Geospatial Technologies Center of Excellence projects or other programs in NIJ’s Information and Geospatial Technologies portfolio, contact Program Manager Steve Schuetz at (202) 514-7663 or by email at steve.schuetz@usdoj.gov.
In response to an executive action issued by President Barack Obama on Jan. 26, 2013, as part of his Plan to Reduce Gun Violence, the National Institute of Justice (NIJ) was tasked to provide an objective, neutral perspective on existing and emerging gun safety technologies and their availability and use. NIJ Scientist Dr. Mark Greene led this assessment. He called on the resources of the Sensor, Surveillance and Biometrics Center of Excellence (SSB CoE) to conduct research and an investigation into existing technologies. The results of the SSB CoE’s efforts gave Dr. Greene the information needed to make his assessment. It also provided a core component of the NIJ Research Report: A Review of Gun Safety Technologies that culminated this effort.

“It definitely was one of our key successes this year. We dropped everything and made it a priority,” SSB CoE Director Lars Ericson says of the Center’s portion of the project, which began in late February and concluded in May. “We put 2.5 people on it and got it done. I’m proud of the effort our staff made to meet our deadline and thus enable NIJ to meet its overall goal.”

In a three-month span, SSB CoE staff engaged with universities and a number of companies (both large and small), including technology
innovators and firearms manufacturers. Staff traveled across the country, as well as to Ireland and Germany, to conduct in-person interviews and learn about the innovative technologies in development to improve gun safety. As a result, the Center produced a report highlighting 12 different technologies. Some are commercially available, some are in beta testing and others are still in the laboratory stage.

“We felt the most value we could provide would stem from focusing on atypical means of ensuring gun safety, rather than on gun locks or gun safes. Rather, we looked at technologies that prevent unauthorized users from firing the weapons. These included biometric means, such as fingerprint identification or measuring the force behind a person’s unique grip, and through RFID technology that involves the user’s wearing something like a watch, ring or bracelet with an embedded chip,” Ericson says. “We also focused on civilian use of weapons, although the technologies do also translate to the law enforcement arena.”

Ericson characterized the research effort, which involved gathering information and putting it in a standardized and useful format, as “extensive” and “challenging.” The effort began with a working group meeting (hosted by the U.S. Department of Justice) in which the various federal agencies involved, along with manufacturers and other stakeholders, had the opportunity to share their viewpoints and priorities regarding gun safety. This meeting gave SSB CoE an opportunity to dialog with the key players and helped facilitate the success of the fast-turnaround research effort. After traveling to conduct interviews and research, staff analyzed and distilled the information on each technology and created a summary of how each one works along with a standardized table of technology characteristics, all of which fed into the development of the final report.


**Highlights**

Since October 2010, the SSBT CoE has helped transition law enforcement technology from the laboratory into practice by first adopters. Areas of focus for the Center, which is operated by ManTech International Corporation, 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 R&D 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 nationally.

Highlighted activities include:

- Conducted testing and evaluation (T&E) of the second-generation prototype of long-range facial recognition binoculars, developed by a grantee with NIJ R&D funding. The tool is intended to aid undercover surveillance of unknown or suspected individuals. It includes technology improvements such as auto focus and auto exposure, and also uses a monochromatic optical system that will enhance resulting match performance. Staff conducted device performance evaluation through field testing and a subject data collection. Facial images were collected from 100 subjects at varying ranges and using various collection devices. The dataset, collected by West Virginia University, mirrors the one collected for the first-generation device for cross-comparisons and baseline match performance analysis. The data were received in late 2013; analysis and reporting will take place in the first quarter of 2014.

- Delivered a report to NIJ on the evaluation of fingerprint data gathered from traditional two-dimensional, contact-based fingerprint devices and techniques, and compared these data to fingerprint data generated by next-generation, three-dimensional contactless fingerprint scanners. The evaluation, performed in collaboration with the U.S. Department of Defense, investigated the comparative match performance of legacy/livescan fingerprint data and contactless fingerprint data to explore interoperability, viability and challenges
to operational deployment of next-generation contactless fingerprint systems. The report went through peer review and revisions; NIJ will make it publicly available to its research partners and stakeholders in early 2014.

- Completed field testing on through-the-wall sensors (TTWS) for law enforcement applications. The program focused on Federal Communications Commission-certified commercially available systems and 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. SSB CoE collected measurement data across several types of structures and operational scenarios, and staff performed demonstrations of TTWS technology for law enforcement agencies and military partners. The Center produced a best practices report of TTWS devices for operation by law enforcement and first responder agencies; the report provides advice, tactics and information related to the use of TTWS in operational settings. Staff also initiated an analysis of collected TTWS data. A full T&E report with comparative evaluations and conclusions will be completed in early 2014.

- Deployed a latent fingerprint interoperability survey for state and local law enforcement officials. The survey was implemented online to supplement paper copies for full nationwide distribution to all domestic law enforcement agencies. The Center reached out to all state automated fingerprint identification system (AFIS) managers to solicit their involvement. In addition, the SSBT CoE identified 107 local agencies with AFIS and invited them to participate. The survey results will provide baseline input for analysis and improvement of state and local AFIS interoperability over time. By identifying successes and barriers, NIJ and other law enforcement-related policymakers and funding sources can improve state and local AFIS interoperability. The survey was completed by 39 states and 69 local agencies by the end of 2013, and remained open until Jan. 31, 2014. Results analysis and reporting will follow in early 2014.

- Began efforts to revise and update A Primer on Body-Worn Cameras for Law Enforcement. This report, initially published in 2012 on JUSTNET, provides a summary of technical specifications for common body-worn cameras produced for criminal justice applications. Since 2012, criminal justice agencies have significantly expanded their use of these cameras. The Center will update and expand the information sheet that is part of the report and produce an additional market survey report in early 2014. A notice was published in the
Pursued T&E of a video analytics software suite developed to predict and detect group behaviors in surveillance video. The Center completed full video data collection in support of a technical assessment of a video surveillance software prototype; West Virginia University administered the collection to gather video data on group and crowd behaviors. The effort resulted in 45 hours of video and contained 207 subjects performing 80 different scenarios. The Center has initiated an analysis of the video data to establish subject behavior ground truth and investigate event detection. Full T&E is scheduled for completion in early 2014. The tool is intended to aid criminal justice surveillance in facility, location or institutional monitoring.

Continued to host a Technology Working Group (TWG) Microsoft SharePoint site as a supplement to traditional NIJ TWG activities. The site has 77 members, including representatives from the Sensors and Surveillance TWG, and the Biometrics TWG as well as CoE staff and TWG observers. The site allows TWG members to discuss technology needs and other TWG business, emerging technologies, common issues and other areas of interest. The site currently hosts 85 discussion threads and 148 documents to support TWG activities.

Continued to host a technology webinar series to enhance discussions and inform law enforcement partners. Eight webinars were held in 2013:

- Wide Area Airborne Surveillance in Support of Law Enforcement.
- Voice Biometrics for Correctional Facilities.
- Terahertz Imaging for Law Enforcement.
- TWG Discussion of Video Analytics.
- CopTrax - An Integrated Video, GPS and C&C System.
— Janus System - Spatiotemporal Fusion of Unstructured Intelligence.

— piXserve - Image and Video Search Solutions for the Enterprise.

For more information on the Sensor, Surveillance and Biometrics Center of Excellence, contact Program Manager Mark Greene at (202) 307-3384 or by email at mark.greene2@usdoj.gov.
Analyzing the Tactical Operations Mission

Several years ago, the Tactical Operations Technology Working Group identified the need for an affordable and realistic training environment specifically focused on Special Weapons and Tactics (SWAT) operations. First, common terminology and a set of collective tasks common to police tactical operations needed to be identified. In 2013, the Weapons and Protective Systems Technology Center of Excellence (WPSTC) completed a project designed to improve planning and training for tactical operations.

WPSTC coordinated the effort, known as the Tactical Operations Mission Analysis Project, and in 2013 produced a draft document titled Report: Mission Essential Tasks for Tactical Operations. WPSTC circulated the draft for comment during 2013 and gave a presentation on the project at the annual National Tactical Officers Association (NTOA) Tactical Operations Conference. The report is anticipated for release in 2014.

“This effort began several years ago with NTOA,” explains Andy Mazzara, WPSTC director. “They were interested in bringing structure and organization to how tactical teams look at the way they conduct operations in the field. This was meant to ultimately achieve a frame-
work structure so they can do better assessments of their preparedness and readiness of level of training, and improve the level of professionalism and training at the team and department levels for tactical operations.”

WPSTC organized a panel of nine experienced tactical law enforcement professionals who reviewed a number of SWAT-related documents as part of the analysis. The panel identified operational scenarios and prospective missions, as well as collective tasks associated with each mission by operational function. Tactical team commanders can use the resulting list to identify their unit’s mission-essential tasks.

“The project developed the framework that focuses on operational functions and broke them down to collective tasks and assigned task numbers,” Mazzara says. “It really presents the professional community of SWAT with a very structured, organized and well-defined description of how and what they do when they perform their operations. This will help them improve their level of professionalism, readiness and quality of training within the SWAT community.”

Ed Hughes of WPSTC, the project lead for the effort, explained that the panel first adapted 10 operational scenarios representative of tactical mission sets encountered by operators (e.g., terrorists on a school bus, barricaded suspect, and bank robbery). “Then we derived the collective tasks needed to accomplish each of the missions and organized them by command and control functions, tactical maneuver functions and tactical support functions. This provided some organization to a broad range of tasks,” Hughes explains.

The panel devised a framework that portrays linkages between mission, collective and individual task proficiency, training plans and tactical readiness. The framework also identified remaining gaps that could be addressed in any follow-on efforts, such as identifying steps for each collective and subordinate task, and the development of performance measures and metrics with which to assess task proficiency.

For more information about this project, contact Andy Mazzara, WPSTC director, at afm126@psu.edu.
Highlights

Operated by the Pennsylvania State University (PSU), the WPSTC supports National Institute of Justice (NIJ) efforts related to the safety and effectiveness of the protective equipment, tools and technologies used by public safety professionals. The Center supports NIJ research, development, testing and 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, Colleges of Engineering and Agriculture, and Pennsylvania Transportation Institute. It also included a partnership with the University of Denver.

Highlighted activities include:

- Continued efforts related to data analysis and production of a technical report and a DVD on the PIT Maneuver Effectiveness Study, which took place in October 2012 (see National Law Enforcement and Corrections Technology Center (NLECTC) System Annual Report 2012, p. 93). WPSTC staff partnered with the Michigan State Police Precision Driving Unit to characterize vehicle dynamics during employment of the 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, resulting in the controlled termination of a pursuit.) Research concentrated on two aspects: (1) The centerline deviation of the target vehicle and its true heading over time and (2) the centerline deviation of the pursuit vehicle and its trajectory.

- Pursued a relationship with the Iowa Municipalities Workers’ Compensation Association to obtain sanitized information on officer line-of-duty injuries to inform ongoing research efforts to determine the impact of non-life-threatening injuries on officers in the field (see NLECTC System Annual Report 2012, p. 91). This study surveyed all 50 states and explored the possibility of tapping into existing workplace injury and compensation/insurance data for law enforcement. In Iowa and possibly New Jersey, there may be both a model process and cooperative interest in helping to develop and analyze trends of officer injuries while both on duty and off duty. The study is also examining similar data collection and analysis done through the National Fire Fighter Near-Miss Reporting System. Once useful data are obtained and reviewed for trends, then improved safety and accident-prevention
procedures can be offered to the nation’s law enforcement with the potential to save or reduce departments’ and agencies’ significant expenditures in this area.

- Provided cross-over (dual-use) support to the U.S. Department of Defense (DoD) Non-Lethal Weapons Program. Since its inception, the WPSTC has been able to leverage the research being performed in support of law enforcement along with research in support of the U.S. military in the area of non-lethal weapons and technologies. Although DoD has a significantly larger budget for R&D in this area, NIJ has the benefit of a live, ongoing field environment from which very useful user feedback can be obtained. Both the military and law enforcement have various requirements that can often be complementary.

- Continued efforts on a Multi-Threat Field Uniform Assessment. This project 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 shirts are currently in the production stage. Following an extensive survey of law enforcement duty uniform requirements by the U.S. Army’s National Protection Center in Natick, Mass., the WPSTC assumed oversight of the field assessment of new duty uniform material. Although protection against bloodborne pathogens remains a critical interest to the field, other factors such as wear, comfort and cost are also important. The results of this assessment will have a long-term impact across the law enforcement community on future uniform design and procurement.

- Coordinated the upgrade and modification of a smartphone app prior to the release of a revised edition of the Less-Lethal Guidebook.

- Provided assessment of individual Tasers and their effectiveness on request. The WPSTC has established test procedures and protocols for evaluating a conducted energy device to determine if it is performing to the manufacturer’s specifications. This allows investigators to determine if device functionality needs to be considered in a post-incident inquiry.

- Continued to support the International Law Enforcement Forum (ILEF). PSU founded ILEF for the free exchange of ideas, information and best practices worldwide about minimal force options. NIJ has indirectly supported the attendance and participation of law enforcement professionals from across – the United States since the establishment of the WPSTC. In addition to the three charter countries – the United States, the United Kingdom and Canada – other nations have become involved with both the workshops (held every
18-24 months) and the discussions on social media. Nine workshops have taken place to date; the next one is tentatively planned for Belfast, Northern Ireland, in late 2014 or early 2015.

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.
CONCLUSION

Throughout 2013, the NLECTC System and its component centers worked together to support NIJ in carrying out its critical mission to help federal, state, local and tribal law enforcement, corrections, courts and other criminal justice agencies address their technology needs and challenges.

The Centers of Excellence provided scientific and technical support on a number of research, development, test and evaluation efforts, thus supporting the transfer and adoption of technology. The National Center, in its role as system hub, provided assistance with the development and dissemination of relevant reports and publications through print, Internet and social media channels. SRTB-RC ensured that the unique needs of smaller and rural agencies received needed attention.

Working together, the center’s components collaborated with criminal justice professionals in the field to help NIJ meet its goal of providing translational technology — linking research with practice.

For the most up-to-date information on the activities of the NLECTC System, visit www.justnet.org.