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EXECUTIVE SUMMARY

Marking 20 Years of Criminal Justice Assistance

The National Law Enforcement and Corrections Technology Center (NLECTC) System celebrated its 20th anniversary in 2014, and although the system and its component centers have reorganized and re-emerged in different configurations several times in the past 20 years, the overarching mission has remained constant: to serve as a conduit between researchers and criminal justice professionals in the field on technology issues.

As the world becomes more virtually connected and the field of criminal justice technology continues to morph, the National Institute of Justice (NIJ) continues to refine and reshape the NLECTC System to deliver information in the format that best suits busy professionals. Whether through face-to-face meetings, as in years past, or through video, social media and other virtual portals as in the present, NLECTC works to identify urgent and emerging technology needs. NLECTC then conveys that information to the National Institute of Justice (NIJ), which sponsors research and development or identifies best practices to address those needs.

More changes to the NLECTC System are coming in 2015. The look and feel of the NLECTC System will take new, creative shapes, but be
assured, the component centers will continue to 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.

Through its component centers, the NLECTC System provides:

- 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.

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 non-biased, 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.
- Manage SchoolSafetyInfo.org, NLECTC’s website dedicated to school safety news, information and technology, and related print and electronic publications on school safety.
- Disseminate print and online newsletters and bulletins, including e-TechBeat and JUSTNETNews.
- Help NIJ identify and prioritize technology needs and requirements.

You can read about the National Center’s assistance to the U.S. Marshals service regarding emergency alerting systems and the related development of a market survey on p. 5, about the Compliance Testing Program’s partnership with ASTM International on p. 11 and about the creation of the SchoolSafe assessment app on p. 17.

**Small, Rural, Tribal and Border Regional Center**

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 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. 35.
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:

- The Corrections Technology CoE researched issues related to the need for cell phone forensics to help correctional facilities mine the data found on contraband cell phones, and developed a guidebook that is available on electronic form on JUSTNET. See p. 41.

- The Sensor, Surveillance and Biometrics CoE produced and published a market survey on body-worn cameras in early 2014, prior to the call for increased use of the devices after the events in Ferguson, Mo. Read about that project on p. 57.

- Several projects from the Forensics Technology Center of Excellence are explored in more detail on p. 47.

- The Weapons and Protective Systems Technology Center of Excellence evaluated effective employment issues related to law enforcement’s use of the PIT Maneuver. Find details on p. 63.

- All component centers engage in outreach to the criminal justice professional community, which is increasingly virtual in scope. Read about efforts in that area on p. 23.
What started as a request for technical assistance from one agency could end up ensuring that hundreds of people across the country find out instantly about emergencies ranging from bad weather closures to active threat situations.

In late 2013, the U.S. Marshals Service, Spokane Judicial District Court Security Services, asked the National Institute of Justice (NIJ) for help with selecting an emergency alerting system for its employees. NIJ Senior Law Enforcement Program Manager Mike O’Shea tasked National Law Enforcement and Corrections Technology Center (NLECTC)-National, through Outreach Coordinator Ben Bolton, with coordinating research for the Marshals Service. The results were impressive enough to lead to the development of *A Technology Guide for Emergency Alerting Systems*, a guidebook slated for a 2015 release.

Bolton explains that the Marshals Service provided NIJ and NLECTC with a requirements document that included 28 technical specifications (some with sub-specifications) and a general outline of expected functionality that he used as the basis of his research.
“One of the technical requirements included the ability to communicate by pager as well as by text, email and phone, and that eliminated a lot of contenders,” Bolton says. Other technical requirements outlined by the Marshals Service included:

- Firewall capability to prevent unauthorized log-ins.
- 24/7 tech support.
- Cloud-based.
- Accessible via smartphone/tablet/computer.

Bolton located 38 potential vendors and collated their responses, narrowing it down to 11 companies that met all the requirements. Various vendors then provided demonstrations of their capabilities, which NLECTC-National arranged via visits to the National Center, field visits and “virtual demos.” From that research, Bolton produced the draft guidebook, which offers an overview of the technology research and a *Consumer Reports*-style side-by-side comparison of the technologies available on the market. NIJ’s sharing the results of this research through the guidebook will make it possible for other agencies to leverage this work and avoid duplication of effort.

“NLECTC has been a tremendous resource in providing market research, evaluation and information gathering,” says Brett Knutson of the Judicial Security Division. “These efforts have improved the knowledge and understanding of the multitude of platforms available. The Marshals Service looks forward to continuing this exceptional working relationship.”

*A Technology Guide for Emergency Alerting Systems* will be released through JUSTNET, the website of the NLECTC System, and its release will be announced via the weekly *JUSTNET News* electronic newsletter, Facebook and Twitter.

**National Center Highlights**

As the focal point for information dissemination, 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 through JUSTNET, the “Ask NLECTC” e-mail address (asknlectc@justnet.org) and the toll-free line at (800) 248-2742. These channels help
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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 “Portal Allows Law Enforcement and Corrections Professionals to Download ASTM Standards” on p. 11). The CTP ensures the safety and effectiveness of several types of equipment used by the public safety community.

Highlighted activities include:

- Wrote “Maryland Uses Managed Approach to Making Cellphone Service in Prisons ‘Disappear’,” which appeared in the July/August 2014 issue of American Jails, the magazine of the American Jail Association. Published bimonthly, American Jails reaches government personnel at the local, state and federal levels, as well as individuals in the private sector.

- Designed, wrote and produced six issues of e-TechBeat, the online newsletter of the NLECTC System.

- Wrote “What You Need to Know About Body-Worn Cameras,” an article for Officer.com.
Processed 91 “asknlectc” email box external request referrals and 594 internal information request referrals, as well as 137 toll-free telephone internal information referrals and 89 external information referrals.

Provided meeting coordination, subject-matter expertise and/or technical writing/editing support for a workshop on female body armor issues and three Special Technical Committee meetings on stab-resistant body armor, ballistic-resistant body armor and offender tracking systems.

Exhibited at 16 national law enforcement and corrections conferences, distributing 3,800 items from inventory.

Handled approximately 412 non-conference-related requests for print publications and responded to approximately 1,175 individual requests for assistance.

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

Recorded 2,088 contacts, 1,101 transactions and 206 orders into CaptureNet.
Beginning in April, took over coordination of requests for Field Search software from the Corrections Technology CoE (CX CoE). Under National Center coordination, certified Field Search instructors provided basic Field Search training to 166 criminal justice personnel and staff processed 454 requests for the Field Search software.

Also in April, took over management of the Corrections Technology Resource Center (CTRC), which has a total of 763 registered users to date. The knowledgebase contains 1,220 documents.

For more information on NLECTC-National, contact Program Manager Mike O’Shea at (202) 305-7954 or by email at michael.oshea@usdoj.gov.
Portal Allows Law Enforcement and Corrections Professionals to Download ASTM Standards

In 2014, National Law Enforcement and Corrections Technology Center (NLECTC)-National staff created a means for law enforcement and corrections professionals to access and download relevant ASTM International standards and test methods from a special portal at no charge.

ASTM provides a global forum for the development and publication of international voluntary consensus standards for materials, products, systems and services. As part of a collaborative effort to develop standards and test methods pertinent to corrections and law enforcement professionals, the National Institute of Justice (NIJ) and ASTM agreed to offer access to relevant ASTM standards and test methods through this custom portal designed to ease sharing of data.

NLECTC created a web page on www.justnet.org explaining the NIJ/ASTM portal and how to obtain access through NLECTC. To register, a practitioner emails asknlectc@justnet.org with a valid email address demonstrating that he or she is a current/active member of a federal, state or local law enforcement or corrections agency. Once NLECTC
validates the agency email address, the participant is given login credentials and a link for access to, and participation in, the NIJ/ASTM International partnership. The agreement is good for one year, with a renewal option.

Once granted access, users can download standards such as ASTM E2902-12, Standard Practice for Measurement of Body Armor Wearers, which addresses measurements for concealable (normal duty) and tactical (special duty) armor for both male and female wearers.

Registered members of this service have unlimited access to the following:

- Complete library of ASTM E54 Standards on Homeland Security Applications (active and historical).
- Complete library of ASTM E54 Test Methods, including all updates created during the subscription term.
- Functionality includes:
  - Color-coded highlighting for comparing revisions.
  - Superseded standards remain in portal for reference purposes.
  - Ability to annotate within documents for sharing online with others.
  - Integration of NIJ practices and procedures into the standards.
  - Link to ASTM membership signup and collaboration area.

**Compliance Testing Program**

The Compliance Testing Program (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 JUSTNET, www.justnet.org.

On July 17, Perry Johnson Registrars became the first certification body accredited for BA 9000. NIJ’s BA 9000, released in 2012, is the application of ISO 9001 specifically to ballistic-resistant body armor manufacturing. HighCom Security, Inc., a body armor manufacturer,
received BA 9000 certification later in July to become the first manufacturer certified by Perry Johnson Registrars. (ISO 9001 is a standard for quality management from the International Organization for Standardization.)

Manufacturers who want to become BA 9000 certified must comply with additional requirements, such as considering impact on ballistic performance when writing purchase requirements and specifications for both ballistic materials and materials used for panel covers, and protecting ballistic materials from detrimental environmental factors including temperature, humidity, contamination, rough handling and ultraviolet radiation. When a manufacturing facility operates a quality management system certified as conforming to BA 9000, the certification provides additional confidence in the ability to meet the needs of criminal justice practitioners and consistently produce armor that continues to represent armor samples used for initial performance testing. This additional confidence can reduce frequency of periodic inspections and testing of armor samples under the CTP.

Also in 2014, the CTP provided oversight and administration for the testing of 101 models of ballistic-resistant body armor, 18 models of stab-resistant armor and nine 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 2014, the FIT program inspected 132 ballistic-resistant body armor models at 49 manufacturing locations.

The CTP also 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 2014, the CTP issued 21 Safety Advisories and 10 Safety Notices, which are posted on https://www.justnet.org/body_armor/active_advisory_notices.html.

**Highlights**

NLECTC-National completed the following standards and testing-related activities in 2014:

- Gained U.S. Department of Justice approval in September for a certification mark to be placed on armor and other products that pass CTP testing. This program identifier will guard against vendors making false claims that armor and other products are certified by NIJ and provides an avenue for NIJ to take action in a court of law.

- Continued work to revise both the ballistic-resistant and stab-resistant body armor standards by facilitating the respective NIJ Special Technical Committees (STCs), which are composed of federal, state and local law enforcement or corrections practitioners with relevant experience; technical experts (e.g., laboratory personnel); and 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) is being 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, and a draft will be ready for public comment in early 2015.
— Issues under consideration during the revision of NIJ Standard 0101.06 *Ballistic Resistance of Personal Body Armor* 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.

■ Participated in a panel discussion focused on issues related to female models of ballistic-resistant and stab-resistant body armor. The meeting results were used to further additional data gathering from female officers and also to inform the STCs.

■ Produced a video on female body armor issues that has drawn 1,198 views since it was posted on the JUSTNET website in early 2014. Ensuring that female body armor fits properly and provides adequate protection and coverage is a primary concern for the efforts to revise both the stab-resistant and ballistic-resistant standards.

■ Provided subject-matter expertise and editorial and graphics support to the revised version of *Selection and Application Guide to Ballistic-Resistant Body Armor*, set for release in early 2015.

■ Gave a presentation at the July School Safety Advocacy Council Conference on the expectations, limitations and certification of ballistic-resistant materials marketed for use in the school campus environment.

■ Participated in review groups to develop ASTM standards in areas including fit and measurement, backface deformation measurement and terminology.

■ Attended the 2014 Personal Armour Systems Symposium in the United Kingdom in September, which included a full agenda of technical presentations related to blast, ballistic and stab protection. Delegates from more than 20 countries attended.

■ In conjunction with the Michigan State Police, conducted evaluations of 2015 model year police vehicles (14) and motorcycles (eight).
If you’ve read the headlines, watched the videos and heard the stories, you know that shootings and violent incidents continue to occur in schools and communities across the country. Against this backdrop, it is easy to conclude that “Somebody needs to do something.”

The National Institute of Justice (NIJ) and the National Law Enforcement and Corrections Technology Center (NLECTC)-National want you to know that many people are doing many positive things to address the problems. We want you to know who they are and what they are doing. Like the news media, we are sharing stories. But our stories have better outcomes.

“We are chronicling the success stories amid all the bad news,” says NLECTC-National Director Lance Miller. “We are bringing you the technologies and strategies that have worked for real people across the country to prepare, respond and recover when violence occurs. These stories come straight from those who are making schools safer: The law enforcement officers and other first responders, school administrators, students and community members who can tell you what worked for them.”
By midsummer 2014, NLECTC staff had collected enough good news and written enough success stories to fill a second volume of *Sharing Ideas and Resources to Keep Our School’s Safe!* These success stories first appear on SchoolSafetyInfo.org, NLECTC’s website dedicated to school safety news, information and technology, before being compiled into pocket-sized print publications. PDF versions of both volumes in the series (Volume 1 was produced in October 2013) can be downloaded from the website.

“There’s a lot of good news to offset the bad,” Miller says. “We are proud to introduce you to people who have successfully used new tools to address growing problems, and we encourage you to investigate and decide what is right for you and what has a place in your school system.”

Those success stories include profiles of federal and state government efforts as well as community projects. New projects and ideas highlighted range from smartphone apps to shared camera systems, training classes to online videos, direct radio connections to devices that secure doors. The wide-ranging subject matter and the positive tone earned SchoolSafetyInfo.org one of only 100 Grand Awards given in 2014 in the Awards for Publication Excellence (APEX) competition, drawing praise from the judges for “Grim topics, but handled here in a positive and constructive way. The Sharing Ideas & Resources booklet impresses — both with its range and depth. From tip lines to first responder training to active threat response, the publication gives a wealth of ideas and excellent advice, in a well written and well illustrated format. The website reinforces the publication, with a wide range of informative videos and content. The combination creates an excellent resource for school safety staff.” SchoolSafetyInfo.org also received an Award of Distinction in the 2014 Communicator Awards competition.

NLECTC staff did not solely write and compile new success stories for the website in 2014; they also expanded the site to include listings of conferences and funding opportunities, added
an extensive list of contact information for state resources, and expanded video capabilities to include targeted videos in the NLECTC Minutes series.

The site also provides information on:

- Government publications.
- Professional associations.
- University research and resources.
- NIJ products and services.
- NLECTC products and services.
- Reposts of news articles from around the country.

Staff also developed SchoolSafe, an assessment app that will help school resource officers and school administrators work together to identify and address trouble spots. Users can conduct a physical assessment of their campus — inside and out — by walking around and answering a series of simple questions on a hand-held device. The app, in beta testing stage for iPhone and iPad at the end of 2014, will be available only to law enforcement officers and school administrators.
School safety efforts also included providing conference support to two events sponsored by the School Safety Advocacy Council (SSAC). In May, NLECTC hosted the 2014 California Regional School Safety and Bullying Conference in Anaheim in cooperation with SSAC. During the conference, which featured several of the nation’s most sought-after speakers on school and student safety, more than 150 attendees received and exchanged information about existing and developing school safety technologies, problem-solving related to school safety and lessons learned. This conference was provided at no charge to attendees, who included school resource officers, school security personnel, school administrators, college campus security/police and school district police chiefs/directors of security. In July, NLECTC supported SSAC’s 2014 National School Safety Conference by staffing an outreach booth in the exhibit hall and conducting videotaped interviews with several conference presenters for use in future NLECTC Minutes. In addition, staff recorded a “Town Hall” meeting and posted it to the Internet. (Staff from the Small, Rural, Tribal and Border Regional Center also exhibited at that event.) NLECTC-National also exhibited at the Maryland School Safety Conference in October in Annapolis, and provided assistance with the development of a promotional flyer.

“First responders, school staff, students, parents and community leaders are stepping up to the plate to work together to combat violence and provide safe and healthy learning environments.
They know they can continue to use NIJ, NLECTC and SchoolSafetyInfo.org as resources in their local efforts to combat violence and enhance school safety. We will continue to report the good news being generated through the innovative use of technology,” says Miller.

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, working with the U.S. Department of Education, the U.S. Secret Service, and other government agencies and departments to develop tools and strategies to boost school security. For more information on NIJ’s school safety programs, contact Mike O’Shea at (202) 305-7954 or by email at michael.oshea@usdoj.gov.
Taking the Mission Into Cyberspace

The shift in the economy in recent years has impacted travel budgets and caused many people—and organizations too—to spend more time close to home.

“Across the U.S. Department of Justice, and a lot of other agencies as well, there’s less of an ability to be a physical presence at places where public safety professionals gather, such as at conferences and workshops. Through JUSTNET [the website of the National Law Enforcement and Corrections Technology Center (NLECTC) System], we’ve tried to put the information in one place so that at any time, 24/7, they can get what they need,” says Ron Pierce, deputy director of NLECTC-National. And the National Center’s success in doing just that drew the attention of other agencies and led to two successful joint ventures in 2014, one with the U.S. Department of Homeland Security (DHS) and one with the Bureau of Justice Assistance (BJA).

SAVER. Through the SAVER program, DHS performs comparison testing of equipment used by public safety professionals, who can use the information to help them make informed purchase decisions. SAVER assessments include side-by-side comparisons of characteristics and some information about cost.
“Kathy Higgins of DHS approached us in late 2013 to ask if we could find a way to get this information out to more people. NIJ and our program manager, Mike O’Shea, fully supported this effort,” Pierce says. “Mr. O’Shea said the more people who see the information, the greater the benefit to the public safety community, and we took it from there.”

NLECTC-National built a subsite to JUSTNET dedicated to presenting SAVER assessments, producing a dashboard view that presents a brief summary of the assessment and includes a link to the full report. By year’s end, the subsite included 23 assessments of products that have a strong law enforcement application.

“Our mission is to put resources in the hands of public safety practitioners and give them some honest broker advice on what would work for them. That’s exactly what the SAVER assessments do. They act as a fair judge on whether the products operate as advertised,” Pierce says. “I think this effort will reap benefits for both agencies, and it took a very small investment of funds and effort to accomplish.”

PoliceArmor.org. BJA also approached NIJ and NLECTC-National because the agency liked what it saw on JUSTNET. BJA previously maintained a joint site for the Body Armor Safety Initiative, which came to an end in 2014, and the Bulletproof Vest Partnership, which provides financial assistance to agencies seeking to purchase ballistic-resistant body armor that passes the NIJ Compliance Testing Program (see “Portal Allows Law Enforcement and Corrections Professionals to Download ASTM Standards”, p. 11).

“Linda Hammond-Deckard of BJA had seen some of the things we did with JUSTNET and dialoged with NIJ about us producing a site for her, since NIJ and NLECTC-National are the authorities on body armor and compliance testing. She wanted a site that is ‘all things body armor, a one-stop shop.’ BJA funded the project and gave us the opportunity to create the site she wants,” Pierce says.

The site features a wide range of information previously not available on either the BVP site or on JUSTNET, including information on:

- Body armor wear and care.
- Armor for special purpose wear, such as in marine environments.
- Survivor stories.
EXHIBIT 7 JUSTNET
YOUTUBE STATISTICS

PoliceArmor.org also links to the NIJ Compliant Product List on JUSTNET and provides updates on NIJ’s ongoing projects to revise both the ballistic- and stab-resistant body armor standards.

“Having all this information in one place means users won’t have to go to multiple sites to get all the information they need. They can find out everything they need to know in one place,” Pierce says.

“SAVER and PoliceArmor.org are two completely different products that have similar intentions,” he adds. “Sites like these two and like JUSTNET, as well as electronic newsletters, e-blasts, Facebook and Twitter, have replaced the print products and mailings of the past, and this results in a huge cost savings to the government and the people.”

Webinars and Workshops. Other members of the NLECTC System joined the National Center in 2014 by increasing efforts to expand electronic outreach through workshops and webinars, many of them completely virtual in scope. A brief summary of highlights follows:

January

The Sensor, Surveillance, and Biometric Technologies Center of Excellence (SSBT CoE) continued its regular monthly webinar series for its Technology Working Groups (TWGs) in 2014. The webinars educate TWG members on technologies, showcase criminal justice applications and example implementations, and facilitate discussion.
On January 29, the Forensics Technology CoE (FTCoE) hosted a workshop titled “Casting Impressions in Snow.” The event had 321 attendees.

February

On February 18, the FTCoE facilitated an NIJ Grantees Workshop featuring NIJ-funded research. The event took place in conjunction with the annual meeting of the Academy of Forensic Sciences in Seattle, Wash., and was attended by 142 people, both online and onsite.

The FTCoE hosted a workshop on Determination of Bloodstain Pattern Evidence on February 28. This workshop had 336 attendees.
March

- On March 25, the FTCoE hosted an online workshop titled “Fluorescence Detection of Blood Impressions with Acid Yellow,” which had 131 attendees.

April

- The FTCoE provided on-site seminar collaboration to Duquesne University in Pittsburgh, Pa., on Friday, April 11, for “Best Practices in Sexual Assault Cases: An Interdisciplinary Approach.”

May

- Corrections Technology CoE (CX CoE) staff conducted a webinar on Fixed Cell Phone Location and Detection Systems on May 14. In total, 106 corrections professionals registered for the webinar, breaking down to 98 unique registrants and eight guests. Participation during the webinar peaked at 50 unique participants.

- On May 22, the FTCoE held “Shooting Reconstruction: The 4 Elements of Trajectory” for a total of 700 registrants, 450 of whom completed all elements of the course.

- The FTCoE held an online workshop, the first in a series of four, on current approaches to familial DNA searching on May 29 for 319 registered attendees.


June

- The FTCoE hosted “The Crime Scene Is Fluid: Land to Water Based Scenes,” a workshop in its Impression and Patterns Evidence Series. This online class drew 198 attendees.
July

- On July 23, the FTCoE hosted an online event titled “Understanding Basic Statistical Concepts: Fingerprints” with 473 attendees. This presentation established how fingerprint conclusions are expert judgments.

September

- During the month, the FTCoE held two highly popular sessions of “A Guide to Expert Testimony: The Emperor's New Clothes,” a technology transition workshop that walks through some of the tough concepts that come up in court for latent print examiners. The presentation discusses error rate, discriminability, specificity, certainty, variability, uniqueness and the identification decision in the context of the relevant population.

- On September 19, the FTCoE, in partnership with NIJ, presented a two-hour Sexual Assault Nurse Examiner – Sexual Assault Response Team Policy and Practices Forum. Presenters included experienced and knowledgeable subject-matter experts in various fields contributing to the investigation and processing of cases involving sexual violence.

- The FTCoE hosted a Technology Transition workshop titled “The Utility and Features of Expert Systems for Interpreting DNA Data” at Duquesne University on September 16-17. Attendees were required to take a series of four online courses to prepare for the onsite workshop, which focused on introducing or enhancing forensic science practitioners’ knowledge of, and capabilities on, software platforms available to interpret DNA data. This workshop had 22 onsite attendees and 68 online participants.

October

- FTCoE hosted a two-day Technology Transition Workshop on 3D scanner technology in Olathe, Kan., for 22 onsite attendees and 24 online attendees, led by FTCoE partner Johnson County Sheriff's Office Criminalistics Laboratory.

Visits to the Field. Although the emphasis on virtual outreach continued to increase throughout 2014, NLECTC System component centers did send staff into the field to exhibit and/or present at more than 40 events. Some were national in scope, some were local; some had thousands of attendees, others had only a few. Highlights follow.
January

- NLECTC-National staff attended the monthly Metropolitan Washington Council of Governments Police Chiefs Committee meeting, giving a presentation that provided an overview of the NLECTC System.

- CX CoE staff attended the American Probation and Parole Association (APPA) conference January 11-14 in Houston, convening a meeting of the APPA Technology Committee, presenting a workshop on offender tracking evidence, attending other workshops and interacting with technology vendors.

- National Center staff exhibited and gave three presentations focusing on an overview of the NLECTC System at the National Sheriffs Association Winter Conference on January 20-25. The Small, Rural, Tribal and Border Regional Center (SRTB-RC) Federal Surplus Property liaison also provided conference attendees with an overview of the 1033 program and its benefits for law enforcement.

- The SRTB-RC law enforcement project manager, program administrator and western outreach specialist attended the Shooting, Hunting and Outdoors Trade (SHOT) Show in Las Vegas on January 14-17. This show is one of the largest shows in the country for exhibiting new and improving technology for law enforcement.
The SRTB-RC Federal Surplus Property liaison and the western outreach specialist exhibited at the Indiana Chiefs of Police Conference in Indianapolis on January 29-31. The liaison made a presentation on SRTB-RC and the 1033 program.
February

■ CX CoE staff attended the American Correctional Association (ACA) Conference in Tampa, Fla., on February 1-5, participating in committee meetings and workshops, and interacting with technology vendors.

■ SRTB-RC exhibited at the Florida Sheriffs’ Mid-Winter Conference in Sandestin on February 2-5; the Oklahoma Sheriffs and Peace Officers’ Conference in Oklahoma City on February 19-22; and the School Safety Advocacy Council’s National Conference on Bullying in Orlando, Fla., on February 26-28.

March

■ The SRTB-RC program administrator and the law enforcement project manager attended and exhibited at the International Law Enforcement Educators and Trainers Association Conference in Lombard, Ill., on March 24-29.

April

■ On April 3, NLECTC-National and SRTB-RC combined resources to exhibit at the Tennessee Association of Chiefs of Police Mid-Year Conference in Nashville. The chiefs and senior staff officers in attendance expressed marked interest in the Federal Surplus Property Program, school safety, communications interoperability and records management systems.

■ The SRTB-RC law enforcement project manager and the program administrator conducted a firearms simulator demonstration at the International Association of Campus Law Enforcement Administrators Regional Conference in Atlantic City, N.J., April 10-11. The law enforcement project manager also exhibited at the Ohio Chiefs of Police Conference April 29 in Newark.

May

■ NLECTC-National teamed with SRTB-RC to exhibit at the Law Enforcement Coordinating Committee Annual Conference May 6-8, in Gatlinburg, Tenn. Attendees at this regional event included representatives from law enforcement, corrections and courts from the mid-
South region. Staff also attended a one-day seminar presented by the Greenville (N.C.) Criminal Intelligence Unit titled “Sovereign Citizens – Recognizing and Mitigating the Threat.”

- The SRTB-RC surplus property liaison and program administrator presented and exhibited at the Alaska Peace Officers’ Conference in Fairbanks on May 12-15, and the law enforcement project manager exhibited at the Florida Sheriffs’ Association Executive Leadership Conference in Naples, also on May 12-15.

June

- NLECTC-National staff and SRTB-RC teamed up to exhibit at the National Sheriffs Association Annual Conference in Ft. Worth, Texas, on June 21-24. An SRTB-RC staff member gave a presentation on the Surplus Property (1033) program, which was well-received.

- SRTB-RC staff also exhibited at the Texas Chief Deputies’ Conference in Kerrville, Texas, June 9-13, where the federal surplus property liaison gave a presentation, and also at the Mississippi Chiefs’ Conference in Biloxi on June 16-20.

- From June 2-6, NLECTC staff attended an InterAgency Board (IAB) meeting where participants discussed standards coordination and equipment interoperability. The board consists of firefighters and law enforcement personnel, and it discusses equipment currently in use in the field and the types of equipment needed in the future.

July

August

■ On August 3-6, CX CoE staff participated in the APPA conference in New Orleans, chairing the Technology Committee, interacting with technology vendors and attending workshops. Then, on August 16-19, staff participated in the ACA Conference in Salt Lake City, taking part in committee meetings (including the Technology Committee), interacting with technology vendors and attending workshops.

■ The National Center attended and exhibited at the National Association of Women Law Enforcement Executives Conference in Tucson, Ariz., from August 6-9; attended and exhibited at the Police Fleet Administrators Conference in Louisville, Ky., on August 19; and attended a meeting of the U.S. Department of Homeland Security-sponsored Stakeholder Panel on Agent Detection Assays (SPADA) Working Groups, held at the National Institute of Standards and Technology (NIST) in Gaithersburg. Staff represented the NLECTC System on the First Response Working Group.

■ SRTB-RC staff attended/exhibited/presented at the following: Midwest Security and Police Expo in Tinley Park, Ill.; Tennessee Sheriffs Annual Conference in Sevierville; and New Mexico Sheriffs Conference in Las Cruces.

September

■ National Center staff exhibited at the Maryland Chiefs and Sheriffs Association Annual Conference in Ocean City from September 7-8. Several workshops and presentations focused on active shooter situations, specifically the shooting incident at the Columbia Mall in Maryland in March 2014, and on social media.

■ NLECTC-National staff also exhibited at the Virginia Association of Chiefs of Police (VACP) Annual Conference September 9 in Roanoke, and presented at the VACP Law Enforcement Symposium in South Boston on September 30. Attendees expressed a great deal of interest in the 1033 program as a result of the presentation.

■ SRTB-RC staff exhibited at the Western States Sheriffs’ Conference in Santa Fe on September 15-17 and at the Idaho/Montana Chapter of the FBI National Academy Associates in Coeur d’Alene on September 30.
October

- The Sensor, Surveillance, and Biometrics Center of Excellence (CoE) provided a briefing on body-worn camera (BWC) technical considerations to the Washington Council of Governments Police Technology Subcommittee on October 23 at the U.S. Park Police headquarters in Washington, D.C. The Center provided an overview of the BWC Market Survey published in March 2014 and highlighted technical specifications and capabilities departments should focus on when considering a deployment of BWCs. NLECTC-National staff also attended.

- National Center staff attended and exhibited at the 121st Annual International Association of Chiefs of Police (IACP) Conference and Exhibition in Orlando, Fla., from October 25-28. The NIJ Senior Law Enforcement Program Manager presented a poster session titled “Body Armor Fit and Comfort: What Agency Leaders Can Do About It,” which was written and designed by National Center staff. Compliance Testing Program staff attended to interact with practitioners, manufacturers and test laboratories. Staff from SRTB-RC assisted with the exhibit.

- SRTB-RC also attended/exhibited/presented at the Idaho/Montana Chapter of the FBI National Academy Associates in Coeur d’Alene and at the South Carolina Chiefs Conference in Myrtle Beach.

November

- FTCoE partner West Virginia University presented on the Modernization of Gunshot Residue Analysis at the AB SCIEX meeting in June in Baltimore, and the Scientific Working Group on Gunshot Residue meeting in Orlando, Fla., in November, as well as publishing an article in the May issue of *Analytical Chemistry* titled “Skin Permeation of Organic Gunshot Residue (OGSR): Implications for Sampling and Analysis.”
Air Support Aids Drug, Attempted Burglary Investigations

The NIJ Law Enforcement Aviation Technology Program (LEATP) is centered on the research, evaluation and development of technologies to provide safe and affordable aviation options for law enforcement agencies. The program seeks to provide cost-effective alternatives to traditional aviation assets for surveillance and for law enforcement operations. The Guilford County (N.C.) Sheriff’s Office is among agencies participating in the program, which is operated by the Small, Rural, Tribal and Border Regional Center (SRTB-RC).

During 2014, the sheriff’s office provided aerial support for narcotics investigations, including one that netted the seizure of weapons, drugs and more than a half-million dollars in cash.

During the investigation, the suspect was observed traveling from his home to several locations and an area storage unit. Many of the neighborhoods and apartment complexes the suspect visited had not been accessible by ground units due to the likelihood of officers’ being identified as law enforcement and possibly compromising the investigation.
Using a Tecnam Eaglet (a fixed-wing aircraft), Guilford County provided air support that netted valuable information regarding suspect activity, as well as locations where the suspect could be observed for follow-up. A subsequent traffic stop of the suspect led to the execution of multiple search warrants at various locations. The searches resulted in the seizure of 1½ pounds of marijuana, multiple weapons and $587,047 in U.S. currency.

“We do many drug operations; it seems we get the most requests for help from the Vice/Narcotics Unit,” says Cpl. Greg Russell, a pilot with the Guilford County Sheriff’s Office Air Support Unit.

The Air Support Unit also provided support that led to the arrest of a suspect in an attempted burglary. A caller reported that a suspect fled on foot when he was seen trying to break into a business. A unit that was already airborne in support of an investigation of residential break-ins responded, circling the area and directing ground patrols to perimeter locations while a Guilford County K-9 unit attempted to track the suspect without success. The flight crew then observed what appeared to be discarded clothing along a tree line and redirected the K-9 handler to that location, where officers found the suspect hiding in the wooded area and arrested him.

**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:

- In June, the Suffolk County (N.Y.) Sheriff’s Office used a fixed-wing aircraft to participate in Operation S.H.I.E.L.D (Suffolk Homeland Security Interdiction and Education for Long Island Defense) along with the department’s Marine Unit. The operation took place in conjunction with the New York State Division of Homeland Security and Emergency Services Office of Counter Terrorism, U.S. Coast Guard and U.S. Customs and Border Protection. More than 30 other local, state and federal agencies also participated. The flight crew was assigned to locate and confirm the locations of foreign flagged vessels in the Sag Harbor, Gardiners Bay, Fishers Island and Montauk areas. They located several vessels and relayed their locations to marine units. In total, the event’s participating agencies’ officers checked
more than 417 vessels, locating and checking 30 foreign-flagged vessels and citing four federal law violations and 114 other law violations, including registration and equipment violations. Hazmat officers detected three radiation sources that were mitigated as safe sources.

■ In April, the Escambia County ( Ala.) Sheriff’s Office used a powered parachute to locate missing persons on a canoe trip. They were located on a sand bar approximately one mile from where they started. Escambia County also used the powered parachute to locate some escaped livestock.

■ Both the Somerset (Ky.) Police Department and Suffolk County flight crews prevented residences from potentially being damaged by grass/brush fires by discovering the fires and notifying the appropriate fire departments. In March, the Somerset flight crew conducted a 3.5-hour patrol flight during which they observed an out-of-control grass fire behind a residence. In April, the Suffolk County Sheriff’s Office used a fixed-wing aircraft to conduct an infrastructure inspection of the Northville Oil Storage Tanks and offshore loading platform. While conducting the inspection, the flight crew noticed smoke rising from a nearby wooded area, and discovered a brush fire in close proximity to several homes. The flight crew notified dispatch, which in turn notified the fire department.

■ Supported NLECTC at the International Association of Chiefs of Police and National Sheriffs’ Association annual conferences with the Somerset (Ky.) Police Department and the Tomball (Texas) Police Department transporting their gyroplanes for display. (See photos.)
SRTB-RC Highlights

In addition to hosting LEATP, SRTB-RC serves small agencies with fewer than 50 sworn officers, 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:

- Produced and distributed 15,245 informational CD/DVDs, more than 13,000 of which were directly related to school safety. Titles include:
  - ASTRO: Active Shooter Training for Responding Officers
  - Forensic and Crime Scene Tool Set (FACTS).
  - Incident Commander.
  - It Can Happen Here.
  - Spanish for Law Enforcement.
  - Meth=Death.

- Responded to 562 requests from agencies in 43 states and the District of Columbia for assistance with the Federal Surplus Property Program, also known as the 1033 Program. The program allows the transfer of excess U.S. Department of Defense supplies and equipment to state and local law enforcement agencies. SRTB-RC provides a liaison service to agencies wishing to take advantage of the program. The liaison also monitors the Law Enforce-
ment Support Office website and sends notifications to agencies that sign up to a listserv via email. The liaison presented information on the NLECTC System and the 1033 Program at 11 state and national conferences.


- Hosted a Kentucky Regional School Safety and Anti-Bullying Conference in Somerset. School Safety Advocacy Council staff facilitated the conference, which 121 school resource officers and educators attended.

For more information on the Law Enforcement Technology Aviation Program and the Small, Rural, Tribal and Border Regional Center, contact NIJ Senior Law Enforcement Program Manager Mike O’Shea at (202) 305-7954 or by email at michael.oshea@usdoj.gov.
The facility search team completes its first sweep with the newly trained cell phone sniffing dog, coming up with a bagful of contraband ranging from old-style flip phones to the latest in smartphone technology.

Now what?

A new publication produced by the National Institute of Justice Corrections Technology Center of Excellence (CX CoE) and released through JUSTNET, *Cell Phone Forensics in a Correctional Setting Guidebook*, provides potential answers to that question. In general, the publication discusses the importance of cell phone forensics to correctional institutions and provides suggestions on how agencies can develop their own forensics programs, since many state and federal laboratories are overwhelmed by huge backlogs.

“You'll often hear people say ‘All we have to do is jam them,’ or ‘If we establish managed access and render them paperweights, that's all we need.’ This lack of understanding of the technology is a real concern,” says John Shaffer, CX CoE program manager for institutional correc-
tions. “Even when you cut off the ability to make a voice call, phones can still be used for a lot of other things such as taking still photographs, making videos, word processing and local text messaging. Some phones allow the user to select the carrier, possibly bypassing managed access systems. All of those things are still a risk and the phones should still be considered contraband. I’ve always been an advocate of recovering the hardware and conducting a forensic analysis so you don’t lose the potential evidence.”

“The problem of contraband cell phones is reaching epidemic proportions. The mission should be not to just recover the phones, but also to maximize their intelligence value. There’s a lot of data on these phones that could uncover criminal acts and lead to arrests. The data can also assist in identifying linkages between inmates and persons in the community,” CX CoE Director Joe Russo says. “Correctional administrators need to understand a confiscated device could give you a lot of information.

“Because contraband cell phones are a relatively new phenomenon, many correctional facilities are not yet using forensics. They need to learn to use all the tools and resources at their disposal. It’s not just about collecting the confiscated phones, putting them in a box and giving it to charity,” he adds.

The NIJ Institutional Corrections Technology Working Group (TWG) established developing a product to meet this need as a priority approximately three years ago, and the CX CoE tasked Shaffer, who retired after 31 years of service with the Pennsylvania Department of Corrections, with leading the effort. The project included a market survey of available hardware and software, literature reviews, Internet searches, and convening a group of subject-matter experts that included experienced corrections professionals (some of whom were also experienced in cell phone forensics) as well as skilled technologists. Participants in a series of three CX CoE webinars on dealing with various aspects of the contraband cell phone problem also provided input through their responses to online polls.

Through all these tools, one common theme emerged: Many corrections professionals share a belief that stopping inmates from using phones, whether through some form of managed access or through locating contraband, is all that is needed to address the problem.

“I’ve been involved in the fight against contraband cell phones from early on. I can’t say that I was surprised by the lack of awareness about the potential security intelligence stored on
contraband cell phones and the importance of cell phone forensics. I think there’s really a need to get that message out,” Shaffer says.

*Cell Phone Forensics in a Correctional Setting Guidebook* gets that message out through an explanation of the evidentiary benefits of a cell phone forensics program, a review of the technology available to help agencies examine contraband cell phones, an outline of the issues involved in starting an internal cell phone forensics program and a synopsis of relevant legal issues and case law.

“It’s important for people to know that there is no one technology that will solve all their problems. It’s just like anything else in security and corrections, you need a multi-pronged approach where stopping phones from coming in in the first place is key,” Shaffer says.

“Ten years ago correctional agencies weren’t thinking much about cell phones and now they’ve had to develop a whole new capacity,” Russo says. “Developing the internal capacity to examine them is probably something that every agency should consider if there is any kind of a cell phone problem. On the other hand, it’s not for every agency. If you find only a few in a year, there are external resources you can use, and the guide provides information on that too.”

You can download *Cell Phone Forensics in a Correctional Setting Guidebook* from https://www.justnet.org/pdf/00-Cell-Phone-Forensics-1020-FINAL.pdf.

**Highlights**

The CX CoE serves as the authoritative resource in the 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 2014, the CX CoE supported NIJ’s research, development, test and evaluation activities as follows:

- Coordinated the transition of the administration of the Field Search software to NLECTC-National.

NLECTC Annual Report 2014  43
- Expanded the scope of the Electronic Monitoring Resource Center to include all corrections-related technology. After renaming the site as the Corrections Technology Resource Center (CTRC), the CX CoE coordinated the transition of administration of the CTRC to NLECTC-National.

- Responded to 45 requests for technical assistance.

- Supported professional associations such as the American Probation and Parole Association (APPA) and the American Correctional Association (ACA) primarily through participating in their respective technology committees. Staff helped develop an issue paper for APPA on the use of social media in community corrections.

- Contributed content for articles appearing in professional journals, including TechBeat; Corrections Today, the ACA journal; and Perspectives, the APPA journal.

- Managed the Offender Tracking Standard Special Technical Committee (STC) and its efforts to develop the first standards and testing program for offender tracking system technologies. Staff is also working to validate the test methods outlined in the current draft standard.

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

- Supported the Federal Cell Phone Working Group on the issue of contraband cell phone use in correctional facilities. The Center hosted a webinar for corrections practitioners on fixed cell phone location and detection systems.

- Published a monthly electronic newsletter that provides information on new developments in corrections technology and has more than 4,600 subscribers.

- Published Practical Guide to Offender Tracking Evidence, a resource designed to help criminal justice agencies understand the issues to consider in preparing for events where offender tracking equipment and associated data can be called into court as evidence.
- Continued work on a project to facilitate information sharing of offender tracking data through the development of a National Information Exchange Model (NIEM) conformant Information Exchange Packet Documentation (IEPD).

- Conducted an operational evaluation of hand-held cell phone detector devices. A draft final report is currently undergoing peer review before publication.

- Provided support to an NIJ-funded Oklahoma University project that seeks to automate the analysis of GPS-generated data.

For more information on the projects and programs in NIJ's correctional portfolio, contact Jack Harne at Jack.Harne@usdoj.gov, phone (202) 616-2911.
From Fingerprints to Photos to Flexible Training, Forensics Gets Out of the Lab and Into the Field

Fingerprints from the suspect, wanted for a host of other crimes, matched to those in a database right there at the scene of the traffic stop…repeat visits to the scene of a crime through stored panoramic images…required training converted to an at-your-convenience online package.

These are just some of the projects undertaken by the NIJ Forensics Technology Center of Excellence (FTCoE) in 2014 that extend the application of forensics far beyond the laboratory.

Report Provides Insight into Mobile Fingerprint Technology

When a research team first sees the published results of its labors, moments of doubt often follow, moments of thinking “Was it worth the effort?” and “Will it reach anyone?”

For one FTCoE research team, those doubts didn’t linger for long. Shortly after the Internet publication of Landscape Study of Mobile ID Fingerprint Devices in January 2014, the team received an email from
a law enforcement branch chief, who was considering the use of biometrics for intelligence, telling them the report provided exactly the information he needed, and that it “provided some great insight” and would help his agency decide whether to implement the technology.

Mobile ID Fingerprint Devices provides a “landscape” view of issues related to the devices’ use and a survey of commercially available products. The 34-page report also includes case studies of successful adoption. Agencies selected were based on their use of mobile ID devices and other digital fingerprint capture technology for identification of deceased persons, as well as for broader law enforcement uses such as routine patrol and suspect identification. The NIJ Forensics Technology Working Group had placed practitioners’ need for information on this technology on its high-priority list for a number of years, leading to the FTCoE’s decision to produce the report. When the research team members realized the large number of commercially available options served to further complicate practitioners’ decision to whether to adopt this technology, the FTCoE decided to perform a more-encompassing landscape study instead of an in-the-field evaluation that would showcase only a small number of the technologies available.

“This technology has been around for a while, and NIJ wanted to find out about the potential barriers that may be keeping its use from becoming more prevalent, and about ways in which they could help spur its adoption. Thus we found case studies that showed, at a high level, the benefits that have followed its implementation,” says Jonas Hall, one of the technical contacts on the FTCoE research team.

FTCoE Director Dr. Jeri Ropero-Miller, who provided oversight to the project, adds that all landscape studies share a goal of saving time for practitioners who are potential adopters: “One of our goals is to prevent them from purchasing something that doesn’t meet their needs. They can scan the report to see what is available, and they can get first-hand stories from actual users in addition to information such as instrument specifications from commercial sources.”

Some of the jurisdictions providing first-hand accounts reported that as knowledge of the technology spread in the community, the number of false identities given to officers dropped, and overall, the use of mobile devices enabled officers to identify suspects much more quickly. Other benefits included a reduction in the time needed to identify deceased persons, which sped up investigations. This led to a reduction in the need to use DNA for identification, which helped decrease DNA testing backlogs.
As with any technology, the benefits come with drawbacks. Ropero-Miller says that early in the investigative process, it became clear that device and database interoperability posed a major challenge, and for an agency considering implementation, learning about the technology’s use in neighboring agencies is key. She adds that as with implementing any new technology, funding is always an issue. In addition to the cost of the devices, adoption of the technology includes various IT expenses related to developing and maintaining databases, and managing servers to store information.

Another issue that often arises with technology development is the need for training. With mobile ID fingerprint devices, the ability to capture a good quality image can make a difference in how well the technology works. Some devices include a scan quality indicator that tells operators if they’ve successfully captured an image or if they need to scan again; regardless of the quality of images obtained in the field, jurisdictions should be aware that legal issues will ultimately require verification by expert analysts in the lab. Moline Prak Pandiyan, a member of the research team, says it is important for agencies to field test the technology and to be aware of FBI and National Institute of Standards and Technology device standards before making a purchase decision: “Real-world testing will help potential users understand if this technology is a viable solution for their departments.”

Landscape Study of Mobile ID Fingerprint Devices can be downloaded from https://rti.connectsolutions.com/p6jrhaggn0f/.

**Panoramic Imaging Technology Widens Agencies’ Crime Scene View**

The report on the District Attorney’s desk lays out the evidence piece by piece, measurement by measurement, the result of months of careful investigation. Precision crime scene reconstruction helps make the case, details made available because the investigators “returned to the scene of the crime” multiple times for more research. Details provided not by holding a scene closed, but by reviewing panoramic images stored in the agency’s computer system.

The Department of Forensic Science at Virginia Commonwealth University (VCU), through the FTCoE, evaluated three panoramic imaging technologies used for digital crime scene documentation and published the results in 2014. VCU’s Michelle Peace says that over and over again, agencies that had successfully implemented one of the technologies told her how much they valued the ability to revisit a crime scene days, even weeks or months later: “Every
agency that we talked to seemed passionate about the technology and had confidence in their ability to use it. It can deliver a lot of strengths to an investigation, but it doesn’t necessarily replace taking photographs and measurements at the physical scene. Instead, it’s another tool in the toolbox.”

The evaluation, which compared three different technologies to assess their capabilities, requirements, benefits and challenges, resulted in the publication of A Technical Evaluation of Three Panoramic Crime Scene Imaging Technologies, available for download on the Technology Transition reports page of the FTCoE website (https://www.forensiccoe.org/reports.aspx). Researchers looked at operational use, hardware and software needs and pricing, as well as training and technical requirements, for 3rd Tech’s SceneVision-Panorama, the Pansocan MK-3 and Leica ScanStation C10. SceneVision-Panorama uses limited on-scene hardware to blend traditional photographs into a single panorama; Panoscan MK-3 rotates to record a complete panorama as a single image; and Leica ScanStation C10 system records a full panorama and also collects millions of data points via a three-dimensional laser scanner, thus allowing additional measurements to be taken at a later time.

“I work and help train crime scene investigators through the Virginia Forensic Science Academy. We’re always talking about advancements in crime scene investigation, and I realized that some really small agencies were buying expensive tools that turned out to be so complicated, the agency never used them. There’s a wide spectrum of these tools available, and no one had objectively evaluated any of them head-to-head, so we developed a plan to look at several technologies that had a wide range of capabilities,” Peace says.

Deciding up front how an agency will use the technology is one of the most significant steps in its procurement decision, she adds. There are multiple ways that agencies can implement the use of panoramic imaging technology, ranging from making a quick scan of a crime scene before physically collecting evidence to taking detailed scans of potential targets such as courthouses and schools as part of a preparedness plan.

“Every agency talked about the value of going back into a crime scene after it’s been released, to revisit it and better understand the spatial relationships, to potentially put themselves at a victim’s or suspect’s or witness’s vantage point. This could be a week after a scene is released, or two or three years,” Peace says. “The ability to document spatial relationships is invaluable
when you get to court. It can be used to reconstruct crash scenes or more quickly document really large scenes like fire or explosion scenes."

Agencies may not need to invest in the most expensive instrument, Ropero-Miller says, and should remember that more complex technologies also require more complex ongoing training: “Some agencies are able to dedicate personnel to these more complex technologies, but a smaller agency might want something simpler that all their investigators can use as needed.”

**Online Certification Takes Training “Off the Road”**

*No more one-week sessions on the road, living out of a suitcase. No more packing up extensive and expensive training equipment. No more manually correcting exams. Not since Minnesota has converted its Breath Alcohol Certification (BrAC) training to an online system, thanks to assistance from an NIJ-funded program.*

Using an NIJ training grant, RTI International developed the original concepts for the online training and then customized training for several states, starting with New Hampshire in 2009. Additional NIJ support allowed several more states to receive the training.

Dr. Peter Stout, senior research forensic scientist, explains that every state has legislated regulations for officers conducting breath testing analysis.

“It’s one of the few areas in the forensic sciences where there is a widespread licensure framework,” Stout says. “There are an estimated 100,000 to 200,000 certified officers in the United States, and probably 50,000 need recertification or recurring training every year. States go about this in various ways, but they all share the challenge of getting people to the training, or training to the people.”

By creating the capability for online recertification, the program helps states implement their training in a more cost-effective manner.

“Take a big state like Arizona. Officers are very spread out geographically and there’s a lot of cost involved in getting an officer to Phoenix,” Stout says. “You have to think about hotels, overtime, all of that.”
The online training packages mirror the basics of onsite training. There’s a lecture component that covers changes in procedures and the law, an assessment test and a practical demonstration of instrument usage. Stout says the practical demonstration “was the part we really had to work on developing, creating something close enough to reality so that it is an effective tool for online delivery.”

Each state training package follows the same framework, he says, but with each subsequent iteration, the simulated instrument test became more complex. Staci Bennett, forensic science supervisor for the Toxicology Section and Calibration Laboratory of the Minnesota Bureau of Criminal Apprehension’s Forensic Science Laboratory, says the programming and the simulations are effective and efficient.

“Before, officers had to come to our lab for training, or several times a year, we packed up all of our instruments and left the office for a week to do training in a regional location,” Bennett says. “Either way, officers had to travel and their departments had the expense of paying for lodging, per diem and overtime to cover for them. We believe the savings involved for Minnesota law enforcement agencies outweighs the development and ongoing maintenance fees.”

Stout says the savings is a difficult concept for states “to get their hands around. A lot of the cost for training is on the agency, and it can be difficult for a state to grasp its full scope. But if you stop and think about it, if you can get an officer to do this online and not take up staff time, it obviously costs the state less too.

“We spent a lot of time on the workflow, not only on whether they can stop and start at their convenience, but how many times do they get to give a wrong answer: Is it just once and you’re done? What do you do with people who fail...and you will have people who fail,” Stout says. “The design is so much more than just the content, and we also want to make the end user experience easy, from registration until finish. You need to have customer support in place for the challenges, because there will be challenges.”

New Hampshire, as the first state to launch the training program, has the most experience in dealing with those challenges, but according to Nancy Mobile of the New Hampshire State Police Forensic Lab, the challenges that have come up have been handled by the developer working in conjunction with the state.
New Hampshire has fewer than 2,000 certified operators of breath alcohol devices, all of whom must be recertified annually. Mobile says that in the first year of the project, approximately 10 to 20 percent of officers took online training rather than travel to Concord for face-to-face instruction. Now, 75 to 80 percent of certified operators prefer the online alternative.

**Highlights**

In furtherance of its mission to provide current research and information to the forensic professional community, the FTCoE performed the following in 2014:

- Hosted 95 online presentations and knowledge transfer events on a variety of forensic technologies and capabilities, delivering more than 23,000 content hours to the forensic community.

- Disseminated NIJ-funded research, and delivered technology assistance and Web-based technology transfer workshops, to more than 12,000 registered practitioners.

- Showcased the FTCoE and disseminated NIJ-funded research through workshops at the 2014 American Academy of Forensic Sciences (AAFS) Meeting in Seattle in February; Mid-Atlantic Association of Forensic Scientists Meeting during April in State College, Pa.; International Association of Chiefs of Police Meeting in Orlando, Fla., in October; and 2014 American Society of Criminology in San Francisco during March.

- Hosted Web-based training and dissemination of grantee presentations, attended by more than 700 participants.

- Hosted five Forensic Technology Working Groups (Standard DNA, Non-Standard DNA, Instrumental Analysis - Controlled Substances and Toxicology, Impression and Pattern/Trace Evidence and Crimes Scene - Crime Scene and Medicolegal Death Investigation) on December 9-10 in the Washington, D.C., area.

- Facilitated the NIJ Crime Laboratory Directors Meeting in September, and published reports created from discussions at the meeting.

- Published and disseminated nine reports, available through the FTCoE website:

— Two landscape studies: Handheld and Portable Raman Spectrometers and Mobile ID Fingerprint Devices.


Through the Organizing and Transferring SANE/SAFE/SART Knowledge and Best Practices project, facilitated and coordinated efforts for the national response to sexual assault, including:

— Federal Stakeholder Meeting to identify current knowledge and best practice gaps.

— SANE/SAFE/SART Practitioner Stakeholder Meeting to discuss best policies and practices that address the identified gaps. The entire meeting was archived and is available online at https://www.forensiced.org/training/viewcourse.cfm?moduleid=C82587CF-5C70-48E9-B941-625A023FAA3D for use by other agencies as an educational piece.

— Best Practices for the National Response to Sexual Assault Practice and Policy Forum to summarize and present the project conclusions, with onsite attendance in Washington, D.C., and more than 400 online attendees.

— Organizing the SANE/SAFE/SART Knowledge and Best Practices Report, which summarizes and documents the entire project, including discussion points and recommendations. (Available at https://www.forensiccoe.org/docs/FTCOE_SANE-SAFE-SART_Final_Report_120114.pdf)

— Provided technology assistance to Y-STR and Cheminformatics database projects.
— The Y-STR database added more than 5,500 new haplotypes in 2014 and averaged more than 1,500 searches per month. (Available at https://www.usystrdatabase.org/)

— The Cheminformatics database, forensicDB, currently has 3,234 records representing approximately 6,722 spectra. (Available at http://www.forensicdb.org/)

■ Analyzed performance metrics in the 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 and increase impact for forensic applications.

■ Hosted a four-part online panel discussion concerning current approaches in familial DNA searching. The series elucidated the current landscape of policies and procedures addressing familial DNA searching. It convened experienced and knowledgeable subject-matter experts from across the country, and has been attended in both live and archival formats by more than 700 participants.

■ Hosted a two-day Technology Transition Workshop in Pittsburgh in September for 20 onsite attendees and 68 online attendees. FTCoE partner Duquesne University led the workshop, which focused on the utility and features of expert systems for interpreting DNA data. All workshop content has been archived and is available for viewing on the FTCoE website.

■ Hosted a two-day Technology Transition Workshop on 3D scanner technology in Olathe, Kan., in October for 22 onsite attendees and 24 online attendees, led by FTCoE partner Johnson County Sheriff’s Office Criminalistics Laboratory. The goal of this workshop was to enhance forensic science practitioners’ knowledge and understanding of capabilities of the most prominent 3D crime scene scanning technologies with two established forensic applications: Leica ScanStation and Faro Focus. All workshop content has been archived and is available for viewing on the FTCoE website.

■ FTCoE partner West Virginia University presented on the Modernization of Gunshot Residue Analysis at the AB SCIEX meeting in June in Baltimore, and the Scientific Working Group on Gunshot Residue meeting in Orlando, Fla., in November, as well as publishing an article in the May issue of Analytical Chemistry titled “Skin Permeation of Organic Gunshot Residue (OGSR): Implications for Sampling and Analysis.”
For more information on the Forensic Technology Center of Excellence, contact Gerald LaPorte at (202) 305-1106 or by email at gerald.laporte@usdoj.gov.
The Future of Body-worn Cameras for Law Enforcement

Whether you’re choosing a new smartphone or an upgraded computer or just a breakfast cereal, today’s marketplace offers so many choices it can seem overwhelming.

In the past couple of years, the selection of body-worn cameras (BWCs) has become no different: the number of law enforcement agencies looking to implement the technology has grown significantly, and so have the number of devices available for procurement. Body-Worn Cameras for Criminal Justice: Market Survey, a new publication produced by the Sensor, Surveillance, and Biometrics Technologies Center of Excellence (SSBT CoE), provides assistance to agencies looking to implement this technology by looking at devices and summarizing their features in a consistent manner.

Lars Ericson, SSBT CoE director, says that by reporting the same information in the same way, and using the same units of measure, agencies can make a strong “apples to apples” comparison of the different devices on the market: “We want them to get the right system for
their needs and their capabilities. As with most technologies, there’s no one size fits all answer, particularly when funding considerations come into play.”

This new publication makes that kind of “apples to apples” comparison for 18 commercially available devices, tripling the number listed in *Body-Worn Camera Market Survey*, a fact sheet produced by SSBT CoE in 2011 and included as an appendix in *A Primer on Body-Worn Cameras for Law Enforcement*. The expanded *Body-Worn Cameras for Criminal Justice: Market Survey* serves as a companion piece to the September 2012 *Primer*, which focused on factors an agency should consider when planning to deploy the technology.

“Since we published the *Primer*, more and more departments have seen the value of deploying BWCs, value related to factors such as accountability, capturing video for evidentiary purposes and obtaining video that relates to citizen complaints,” Ericson says. As more agencies began deploying the devices, more vendors entered the market, leading to more available options and more potential confusion. “With the new market survey, we wanted to compare and contrast these new devices to help agencies make the decision that is right for them. We focused exclusively on commercial products because we wanted to develop a publication that would be immediately relevant.”

SSBT CoE obtained the information needed to produce the publication by issuing, through the National Institute of Justice, a request for information in the *Federal Register*. The RFI solicited input on more than 20 different topics and features, and SSBT CoE staff reached out to the vendor community to ensure awareness of the request. All but one of the vendors contacted provided information on their systems.

“A department considering what to purchase could be overwhelmed by the different options, or could be swayed by an aggressive marketing campaign when another device might be a better option,” Ericson says. “In addition to funding considerations, some features may appeal to one department, while another may want a different option. For example, you might think that all agencies would want cameras that capture video images in the dark, but when you consider how that technology fits into the logistics of a criminal case, you might realize that isn’t the best option for your department because it doesn’t represent what the officer sees. That type of evidence could complicate a jury’s opinion.”
Other features addressed in the *Market Survey* include, but are not limited to:

- Mounting options.
- Maximum video resolution.
- Recording speed.
- Recording format.
- Time/date stamp capabilities.
- Field of view.


**Highlights**

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

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

- Identifying technology and operational requirements.
- Supporting NIJ’s research and development programs.
- Testing, evaluating and demonstrating technologies.
- Supporting the adoption of new technology.
- Developing technology guidelines and standards.
- Providing technology assistance and support to criminal justice agencies nationally.
Highlighted activities for 2014 include:

- Published numerous reports, studies and market surveys in support of criminal justice needs and NIJ’s R&D mission. Details of specific tasks are described in subsequent bullets, with a listing of reports made publicly available in 2015 included here for reference:
  


- Completed test and evaluation (T&E) of the second-generation prototype of a long-range facial recognition binoculars, developed by a third-party grantee under NIJ R&D funding.
The tool is intended to aid undercover surveillance by law enforcement. SSBT CoE administered device performance evaluation through field testing and a subject data collection, and collected face images from 100 subjects at varying ranges and by using various collection devices. (West Virginia University conducted the data collection on behalf of the CoE). The dataset mirrors the one collected for the first-generation device for cross comparison and baseline match performance analysis. SSBT CoE delivered the final report to NIJ, which is expected to be published on the National Criminal Justice Reference Service (NCJRS) website in early 2015.

- Produced a comprehensive market survey of commercially available body cavity screening for criminal justice agencies. The report focuses on systems and devices for screening non-metallic objects and/or items concealed within body cavities. It discusses technological limitations pertaining to the type of materials detected and/or the ability to detect contraband inside body cavities. The report provides a summary of technical specifications for 12 screening systems and is publicly available through both NCJRS and JUSTNET (https://www.ncjrs.gov/pdffiles1/nij/grants/246710.pdf).

- Completed T&E of through-the-wall sensors (TTWS) for law enforcement applications. The program focused on Federal Communications Commission-certified commercially available systems in conjunction with a late-stage prototype developed by a third party through NIJ R&D funding. These devices can offer increased situational awareness during certain law enforcement operations. SSBT CoE collected measurement data across several types of structures and operational scenarios. The Center published a best practices report of TTWS devices for operation by law enforcement and first responder agencies that provides advice, tactics and information related to the use of TTWS in operational settings (https://www.justnet.org/pdf/ThroughWallSensorBestPractices-508.pdf), and delivered a full report on the testing, analysis and results to NIJ (https://www.ncjrs.gov/pdffiles1/nij/grants/245944.pdf).

- Provided T&E of a video analytics software suite prototype developed to predict and detect group behaviors in surveillance video. A third-party NIJ grantee developed the software to aid criminal justice surveillance in facility, location or institutional monitoring. The evaluation leveraged data from a collection administered by West Virginia University to gather video data on group and crowd behaviors. That collection resulted in 45 hours of video and contained 207 subjects performing 80 different scenarios. Analysis of the video data
established subject behavior ground truth and investigated event detection. The detailed T&E report was delivered to NIJ and is expected to be published through NCJRS in 2015.

- Concluded the nationwide Latent Fingerprint Interoperability Survey, the only comprehensive effort that establishes the level of interoperability of automated fingerprint identification systems (AFIS) maintained by U.S. state and local law enforcement agencies. SSBT CoE sent the survey to state-level law enforcement agencies with an AFIS in all 50 states and the District of Columbia, as well as to all local law enforcement agencies identified as having an AFIS. The survey was motivated in part by a need identified in the 2009 National Research Council report, *Strengthening Forensic Science in the United States: A Path Forward*. A total of 49 state agencies and 86 local agencies responded. NIJ, with key input from SSBT CoE, published a summary of the survey results (https://ncjrs.gov/pdffiles1/nij/247910.pdf).

- Initiated a second round of research into contactless fingerprint technology for criminal justice and defense. This work is sponsored by the U.S. Department of Defense Office of Defense Biometrics & Forensics. In 2012, the Center undertook a biometric collection of fingerprint data from traditional scanners and next-generation contactless devices. This data was the first of its kind across the two classes of scanners using the same subject population. It was used to evaluate the match performance and interoperability of contactless versus contact fingerprint data, and results were published in a 2014 report (https://www.ncjrs.gov/pdffiles1/nij/grants/245146.pdf). The success of this initial work has stimulated further research into the performance and interoperability of contactless and contact fingerprint data collection from other devices, as well as the effect of minutia deviations on match performance.

For more information on the Sensor, Surveillance, and Biometric Technologies Center of Excellence, contact Mark Greene, Grants and Policy Division Director of the NIJ Office of Science and Technology, at (202) 307-3384 or by email at Mark.Greene2@usdoj.gov.
PIT Maneuver Project Nears Completion

The police cruiser closes in on the fleeing suspect vehicle and sends it into a spinning stop as the backup vehicles close in and surround it, preventing escape. That’s the way it happens in the movies and on television, anyway.

In reality, law enforcement officers know that the PIT Maneuver is an extremely dangerous tactic with a small window of effectiveness, and research by the National Institute of Justice (NIJ) Weapons and Protective Systems Technology Center of Excellence (WPSTC) attempts to quantify its potential for effective employment.

Since 2012, WPSTC staff has been working with the Michigan State Police (MSP) Precision Driving Unit to characterize vehicle dynamics during the employment of the maneuver. The remaining steps in this project are finalizing the technical report and DVD, making them available to NIJ and to the criminal justice community at large. (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.)
Conducted as part of the research project, analysis of both target vehicle tracks and pursuit vehicle tracks has provided some interesting evidence. WPSTC and MSP identified a range of speeds for effective PIT maneuver employment against a Dodge Charger equipped with electronic skid prevention (ESP) technology (between 35 and 55 MPH). In order to effectively employ the PIT maneuver against this type of vehicle, MSP driving instructors had to modify their PIT technique with more aggressive steering input and braking to avoid double tapping the target vehicle and/or causing serious damage to both vehicles. It turns out that centerline deviation of an ESP-equipped Dodge Charger is significantly smaller than that of a non-ESP-equipped Ford Crown Victoria. A Crown Victoria targeted by the PIT Maneuver will possibly exit the roadway as a result, while the Charger will probably remain on the roadway if traveling on a two-lane road. Also, it is more likely that the pursuit vehicle (no matter whether it is a Crown Victoria or a Charger) will exit the roadway when using the PIT maneuver against a Charger, no matter the speed, when traveling on a two-lane road. The hypothesis is that the use of a combination of more aggressive steering and braking by the pursuit vehicle driver in order to overcome the ESP technology in the Charger causes the pursuit vehicle to leave the roadway.

**Highlights**

Operated by the Pennsylvania State University (PSU) at its Applied Research Laboratory (ARL), WPSTC supports NIJ’s 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, test and evaluation (RDT&E) activities in the areas of less-lethal devices, officer safety equipment and pursuit management.

WPSTC includes programs and projects in PSU’s ARL, Colleges of Engineering and Agriculture, and Pennsylvania Transportation Institute.

Highlighted activities in 2014 include:

- Received a database with more than 10,000 officer injury reports from J.A. Montgomery Risk Control, which has collected data from more than 30 different police organizations in New Jersey. The database is being groomed to help inform a revised draft of *A Law Enforcement Safety Reporting System: The Need for Such a System and the Level of Effort Required for Implementation*. This report discusses the need for a national near-miss incident reporting system for reducing law enforcement officers’ injuries and improving their
safety. It also outlines the level of effort required to stand up and maintain such a system. The report suggests calling such a system the Law Enforcement Safety Reporting System (LESRS).

- Provided cross-over (dual-use) support to the U.S. Department of Defense (DoD) Non-Lethal Weapons Program. Since its inception, the WPSTC has leveraged 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. DoD has a significantly larger budget for R&D in this area, while NIJ provides a “live environment” from which to obtain very useful user feedback. The two audiences also have similar, but varying, requirements that often can be complementary.

- Continued work on the Multi-Threat Field Uniform (MTDU) 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. Agreements have been finalized with participating departments and 60 law enforcement officers will take part in a wear trial in 2015. WPSTC developed and finalized a participant survey instrument and contracted to have the material produced and the shirts created (each officer will receive two shirts.) Intertek, the laboratory used by the U.S. Army’s National Soldier Protection Center, will conduct post-wear trial testing to determine if the bloodborne pathogen protection application degrades during the wear trial. The results of this assessment will have a long-term impact on future uniform design and procurement.

- Produced a revised version of Less-Lethal Guidebook, a comprehensive overview of less-lethal weapons and technologies. The original version has proven quite popular, especially with smaller police departments considering adding to their minimal force options. The guidebook provides the user with operational scenario considerations as well as the current state of research and testing. It also lays out a process for planning for, acquiring and managing munitions, weapons and technologies, and addresses training, legal and policy issues, and public acceptability.

- As it has for the past several years, provided investigative field support, on request, for conducted energy weapon-involved incidents that require assessing device functionality. 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 rule the device in or out of consideration in a post-incident inquiry.

- Continued to collaborate with NIJ to support the attendance and participation of criminal justice professionals in the International Law Enforcement Forum (ILEF). Prior to establishment of WPSTC, Penn State created ILEF for the free exchange of ideas, information and best practices worldwide about minimal force options. Workshops take place every 18-24 months and active web-based discussions on social media are ongoing. The most recent workshop took place in Belfast and Londonderry, Northern Ireland, in October 2014.

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.
During 20 years of service to the criminal justice community, the National Law Enforcement and Corrections Technology Center (NLECTC) System, through its component centers, has continuously served as a conduit between researchers and criminal justice professionals in the field on technology issues. Working in today’s real and virtual worlds, NLECTC continues to identify urgent and emerging technology needs and convey those needs to the National Institute of Justice (NIJ). NIJ, in turn, identifies best practices or sponsors the research and development needed to address those needs.

Whether the NLECTC System is helping NIJ develop and disseminate equipment performance standards and technology guides; supporting the transfer and adoption of technology into practice by law enforcement and corrections agencies, courts and crime laboratories; distributing technology information through various methods of outreach; or providing scientific and technical support to NIJ’s research, development, test and evaluation (RDT&E) projects, the Center System continues to help NIJ set its research agenda and fulfill its mission to provide objective and independent knowledge and tools to reduce crime and promote justice, particularly at the state and local levels.
In 2015, the look and feel of the NLECTC System will change, but the component centers will continue to play a crucial role in enabling NIJ to help law enforcement, corrections, courts and other criminal justice agencies address their technology needs and challenges.