TECH*Beat*

Dedicated to Reporting Developments in Technology for Law Enforcement, Corrections and Forensic Sciences

HOUSES OF WORSHIP
TRAINING PROVIDES SECURITY PLAN GUIDELINES

P.3

REPORT EXAMINES DNA MIXTURE INTERPRETATION SOFTWARE TOOLS
P. 6

DRAFT REVISIONS TO BALLISTIC-RESISTANT STANDARD ADDRESS NEEDS OF THE FIELD
P. 10
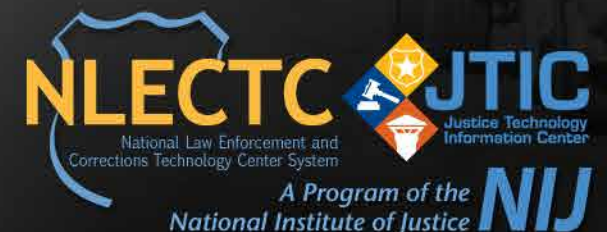
NLECTC
National Law Enforcement and Corrections Technology Center System

JTIC
Justice Technology Information Center

A Program of the National Institute of Justice
NIJ

The NLECTC System

The Justice Technology Information Center (JTIC), a component of the National Institute of Justice's National Law Enforcement and Corrections Technology Center (NLECTC) System, serves as an information resource for technology and equipment related to law enforcement, corrections and courts and as a primary point of contact for administration of a voluntary equipment standards and testing program for public safety equipment.

JTIC is part of the realignment of the NLECTC System, which includes the Justice Innovation Center for Small, Rural, Tribal, and Border Criminal Justice Agencies, which focuses on the unique law enforcement challenges faced by those types of agencies; the National Criminal Justice Technology Research, Test and Evaluation Center, which provides technology-related research and testing and operational evaluations of technologies; and the Forensic Technology Center of Excellence, which supports technology research, development, testing and evaluation efforts in forensic science. In addition, a Priority Criminal Justice Needs Initiative exists to assess and prioritize technology needs across the criminal justice community.

For information, visit www.justnet.org or contact (800) 248-2742.

NCJRS
National Criminal Justice Reference Service

NCJRS is a federally funded resource offering justice and substance abuse information to support research, policy and program development worldwide.

For information, visit www.ncjrs.gov.

ANDROID AND IPHONE APPS AVAILABLE

TECH Beat

Android and iPhone apps are now available to access *TechBeat*. Keep current with research and development efforts for public safety technology and enjoy interactive features including video, audio and embedded images.

iTunes:
http://www.justnet.org/iphoneapp/

Android:
http://www.justnet.org/androidapp/

HOUSES OF WORSHIP
Training Provides
SECURITY PLAN GUIDELINES

By Becky Lewis

In the aftermath of the June 2015 Charleston church shooting, houses of worship (HOW) in South Carolina's Newberry County began asking the sheriff's office for help in creating a safety plan. The office created a program and offered a training session. It filled up in what seemed liked minutes.

So staff offered a second session. It filled up just as fast. A third went on the schedule, and calls began pouring in for it too.

"With this kind of response, we're now making plans to put the training on our website, and we're certainly willing to share it or provide assistance to other agencies facing the same kind of need," says Newberry County Sheriff Lee Foster.

Chief Deputy Todd Johnson, who is also a Baptist minister, did the background research and developed the Safe Sanctuaries training, then revised it with input from a focus group of local HOW leaders.

"We developed a comprehensive training that addresses more than just active threats," Johnson says. "We cover medical emergencies, including the need to have an AED [automated external defibrillator] on hand because the average age of most worshippers continues to rise. We cover hazardous weather. We cover Hazmat situations. We emphasize the need to plan for all of these eventualities so if something happens, you immediately know how to respond."

In particular, he says, South Carolina's concealed weapons permit law allows individuals to carry a firearm inside a recognized religious institution only "with the permission of the appropriate governing body, so we have to talk them through how to develop an appropriate governing body. We talk to them about making threat assessments, whether the HOW needs to give express permission to someone to carry a firearm, and the ramifications and liability concerns related to someone's shooting in a crowded sanctuary. We want them to take a bigger view of the whole security picture and get them to think bigger than an actual single event."

To reach those goals, the Newberry County Safe Sanctuaries training uses a PowerPoint presentation, handouts and a Civilian Response to Active Shooter Events (CRASE) video on the August 2012 Sikh temple shooting in Wisconsin. In addition to the topics already mentioned, the training covers the need to form a medical response team from members who are trained personnel, developing "perimeter security" through parking lot patrols and two-way radios, and ideas as simple as not leaving money lying around

the facility. Participants have ranged from very small HOW to Newberry First Baptist, one of the larger churches in a county of less than 38,000 residents. With so much material to cover and so many new ideas being introduced, focus group meeting and participants from the first session have returned, and told Johnson they learned even more the second time.

"Our goal is to impart information, not hand out sample policies. We're providing guidelines so they can begin to discuss what they need to do to make their own plan. One of the things we do is encourage them to call their local law enforcement agency, their fire department, their EMS service, and ask them to come walk through the facility and point out ideas," Johnson says. "We really try to stress that building relationships is key."

In addition to continuing training sessions and planning to post materials on the sheriff's office website, Foster says his office has plans to create additional training that does focus more on active threat events, possibly incorporating more from the CRASE training, which is offered by the Advanced Law Enforcement Rapid Response Training Program (http://www.alerrt.org/ofcm/CourseTypes/catalog/80).

For more information on the Safe Sanctuaries training offered by Newberry County, call the Newberry County Sheriff's Office at (803) 321-2211.

The National Institute of Justice is developing an app to help houses of worship develop a safety and security plan. For information, contact Mike O'Shea, NIJ senior law enforcement program manager, at michael.oshea@usdoj.gov.
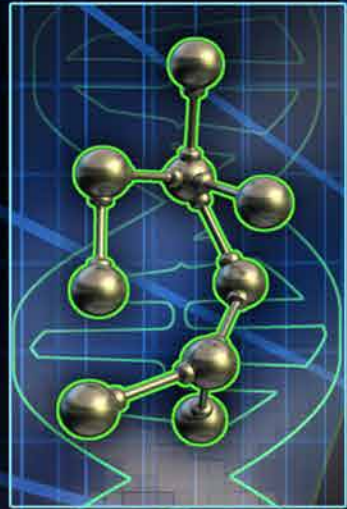
REPORT EXAMINES
DNA
Mixture Interpretation
SOFTWARE TOOLS

By Becky Lewis

Brochures. Fact sheets. Reviews clipped from technical journals. All of them laid out in different formats, all of them promoting different types of information. Sometimes it's hard for a decision maker to make sure everything in the pile is actually "fruit," let alone whether the information is all "apples."

At least when it comes to selecting a DNA mixture interpretation software tool (MIST), the National Institute of Justice Forensic Technology Center of Excellence (FTCoE) has sorted a confusing pile into a document that ensures no apples-to-oranges comparisons have accidentally become part of the process.

Evidence can contain a mixture of DNA from more than one person. *Demystifying MIST: Landscape Report for DNA Mixture Interpretation Software Tools* (available at https://rti.connectsolutions.com/mist/), presents an overview of 13 MIST tools. (For more details on the report contents, see sidebar, "Providing a Basic Understanding of What's Out There.") FTCoE landscape study reports provide a broad view of issues and products identified as having value and usefulness in forensic applications.

```
begin
    comment DNA program
print the primes less than
1000 using the
            sieve method.;
    Boolean array
sieve[2:1000];
    integer p, count;

    comment Eliminate the
multiples of the argument
prime number;
    procedure eliminate(p);
        integer p;
        begin
            integer i;
            for i := 2*p
step p until 1000 do
                sieve[i] :=
false
        end;
```

"There's a lot of information out there on mixture interpretation software tools, and it's confusing. You hear different things from vendors, at workshops, at conference booths and in the media. There are just all these pieces of information," says Dr. Patricia Melton, senior research forensic scientist at FTCoE. "Administrators were struggling with how to get all of the necessary information, and how to use it to make the best decision for their laboratories."

With that in mind, she says FTCoE staff set out to create a one-stop-shop resource that presents information "without a pitch, without a spin on it, to help the laboratory figure out what is best for an agency based on its needs."

FTCoE staff talked to manufacturers, developers, practitioners, academics and researchers, and conducted an extensive literature review, to inform the report. Particularly key is a table that lays out characteristics of the 13 MIST reviewed, side by side.

"We've gotten nothing but positive feedback about that table," Melton says. "People keep saying this is the best table ever, it gave them the roadmap they needed. It lets you look at everything side by side, and you can pick out the characteristics you want and narrow down your choice."

For administrators and procurement coordinators who do not have a technical background, the overview and summary sections present a nontechnical viewpoint that helps them key in on questions to ask of their forensic specialists. Melton says that no one wants to be in the position of simply signing off on something because someone else requested it, and these nontechnical portions of *Demystifying MIST* will help them learn the information they need.

10111110100100
10100100101111

"It was challenging to find a format. If someone wanted to know more about Software Tool X, we didn't want them to have to read through 30 pages of text looking for bits and pieces about it. The way the report is set up with individual profiles from the laboratories and from the vendors on each tool, a reader can turn right to the tool or tools they're interested in and get what they need," Melton says. "We worked hard to partition it so someone doesn't have to sit with a bunch of highlighters and make notes."

The report also focuses, in a highly technical fashion, on the need for a strong validation plan, and a table lists stakeholders who are willing to share their validation plans and provide guidance to laboratories just starting the process. Melton says she can't say enough good things about the cooperation and collaboration the FTCoE received from the field, as laboratory representatives told her: "It took us four tries to get a good plan and we're happy to share it, and we're happy to look at someone else's plan and offer feedback."

"The wonderful thing about the forensics community is they are just so open to being involved in projects that give back to the community," Melton says. "We had wonderful experiences with key individuals involved in mixture interpretation, and they had addressed the really hard questions of how do I validate, how do I train my analysts, how do I present in court. We had quality, honest conversations with these stakeholders, and they speak the same language as our readers."

Since the FTCoE posted the report last summer, it's received more than 300 hits, and staff are working on plans for keeping the information current and fresh.

For more information, contact Dr. Patricia Melton at (919) 541-6546 or pmelton@rti.org. For information on the projects and programs of the National Institute of Justice forensics technology portfolio, contact Gerald LaPorte, Director, Office of Investigative and Forensic Sciences, at Gerald.LaPorte@usdoj.gov.

Providing a Basic Understanding of What's Out There

Demystifying MIST: Landscape Report for DNA Mixture Interpretation Software Tools summarizes considerations that impact procurement of, training with and validation using DNA mixture interpretation software tools (MIST). It offers a basic understanding of tool use, benefits and limitations, and provides a landscape view of currently available MIST to assist forensics decision makers with their procurement and training plans. To help them choose the tool that best meets their needs, the FTCoE explored software features, validation considerations, technical support and training options.

Demystifying MIST includes a literature review, profiles provided by vendors and profiles provided by labs that have evaluated tools, and key findings and recommendations, including:

- Finding a software tool that fits the laboratory's need is critical. Potential areas to evaluate include time of analysis, type of interpretation model the software performs, and type of training and support offered.

- Laboratories must look beyond the initial cost of the tool and consider intermediate and long-term financial commitments. Even if a laboratory chooses one of the free tools, substantial resources are needed for labor associated with the validation and analyst training. Additional cost considerations include maintenance agreements.

- Training should cover three major areas: the application of the likelihood ratio (LR), the math model the tool uses and the correct use of the tool, all of which will need to be explained fluently in court.

- The internal validation process for implementing a DNA mixture interpretation software tool will be challenging, as the scope of the validation must incorporate both the mathematical and the software component of the chosen system across a variety of samples that mimic the complex mixtures observed in casework. Therefore, the laboratory should be cognizant of additional resources in labor, time and finances to support the scope of the validation, as it will be a more extensive process than that of previous validation studies.

(Adapted from *Demystifying MIST,* Overview pp. 1-3, Summary p. 33.)

Draft Revisions to BALLISTIC RESISTANT Standard Address Needs of the Field

By Becky Lewis

With the release of Ballistic Resistance of Body Armor NIJ Standard-0101.06 in 2008, the National Institute of Justice (NIJ) and its Compliance Testing Program (CTP) launched a new era in body armor testing, one that for the first time included testing armor that had been subjected to a rigorous conditioning protocol and greatly expanded the number of armor panels put through the testing process. With the introduction of the Follow-up Inspection and Testing (FIT) program in 2011, the CTP began providing oversight of the first-ever testing of production samples of ballistic-resistant models listed on the program's Compliant Products List (CPL).

Yet, not long after the FIT program got underway, in June 2012, NIJ began making plans to develop the next iteration of the standard. A Special Technical Committee (STC) composed of practitioners (law enforcement officers who use and are knowledgeable about ballistic-resistant body armor), test laboratory staff and subject-matter experts from NIJ, the CTP and other agencies began meeting in February 2013 to discuss revisions needed for the upcoming NIJ Standard-0101.07. Plans call for a draft of that standard to be released for public comment later this year via JUSTNET, the website of the National Law Enforcement and Corrections Technology Center (NLECTC) System.

"NIJ 0101.06 represented a significant step forward in relation to the amount of data collected and the additional testing imposed on armor to provide confidence in its performance in the field," says Dan Longhurst, standards coordinator with the Justice Technology Information Center (JTIC), a component of the NLECTC System that administers the CTP. "Since its introduction in 2008, operational needs have changed and experience administering the standard has identified areas for potential incremental improvements."

Longhurst notes that unlike the major changes of NIJ Standard-0101.06, the latest revisions will consist mainly of refinements and clarifications, many of which will impact only the test labs and the CTP. Changes affecting law enforcement agencies and officers in the field fall mainly in the areas of protection levels, type of ammunition used in testing, vocabulary refinements and testing of female armor.

Over the past several years, NIJ has convened several focus groups of female officers to help inform the development of a test protocol specific to female armors, and CTP staff engineers have used that input to help them devise new and appropriate test methods.

"Because manufacturing techniques have improved to accommodate female officers with more comfortable armor that provides better coverage, the standard needs to ensure that these armors are adequately tested to the same rigor as flat armor has been tested in the past. This includes assessing different-sized bust cups and cup production techniques," Longhurst says. "It also requires that shot placements and angles are specified in such a way as to ensure consistent and reliable testing."

The ammunition used to take those shots has also been a subject of extensive discussion in STC meetings; the standard specifies not only the caliber of ammunition, but also the specific manufacturer and model for quality control purposes. One proposed change would introduce the use of 7.62 x 39 mild steel core (MSC) and 5.56 mm M855 ammunition into hard armor plate testing. The ammunition specified in NIJ Standard-0101.06 represents a large gap between the two existing levels of hard armor protection, and bringing these two types of ammunition into the test matrix will help close that gap and provide a better base level of protection for officers.

The STC has also discussed changing protection level names of those hard armor plates and the soft armor vests as well, with a goal of providing greater clarity through nomenclature that instantly identifies the type of protection offered. Also, changing names would provide demarcation between the new standard and previous iterations. And regardless of the names finally chosen, this version of the standard will retire Level IIA, the lowest level of soft armor protection.

"Serving officers on the STC feel that the protection that it offers is considered too low for the threats commonly faced on the street," Longhurst says. Level IIA accounts for only 7 percent of the armor models currently listed on the CPL, an indication that agencies have little interest in purchasing armor built at this lower protection level.

When it comes to purchasing armor at any level, agencies sometimes are hindered by confusing vocabulary, with manufacturers, labs, practitioners and government agencies all using the same term to mean different things, or using different terms to describe the same thing. In order to foster more consistent use of terminology, NIJ Standard-0101.07 will include only a truncated section of definitions and will instead reference the newly released *ASTM E3005-15 Standard Terminology for Body Armor*. As a service to the criminal justice community, NIJ provides free access to this and other ASTM standards through a portal on JUSTNET. For more details and to apply to obtain access, visit https://justnet.org/NIJ_ASTM_Standards_Portal.html.

"NIJ has used input from the field to inform the development of the draft revision to the ballistic standard, and will collect even more during the public comment period. The goal is to ensure that the standard meets the needs of those working in the criminal justice field," Longhurst says.

Sign up to receive JUSTNETNews, the weekly email newsletter of the NLECTC System, or follow NLECTC on Facebook or Twitter, to find out as soon as the standard is released for public comment. To find out more information and to sign up, visit JUSTNET at www.justnet.org.

For additional information on the NIJ ballistic-resistant body armor standard effort, contact Mike O'Shea, NIJ senior law enforcement program manager, at michael.oshea@usdoj.gov.

TECHshorts is a sampling of the technology projects, programs and initiatives being conducted by the Office of Justice Programs' National Institute of Justice (NIJ) and the National Law Enforcement and Corrections Technology Center (NLECTC) System, as well as other agencies. If you would like additional information concerning any of the following TECHshorts, please refer to the specific point-of-contact information that is included at the end of each entry.

In addition to TECHshorts, *JUSTNET News*, an online, weekly technology news summary containing articles relating to technology developments in public safety that have appeared in newspapers, newsmagazines and trade and professional journals, is available through the NLECTC System's website, www.justnet.org. Subscribers to *JUSTNET News* receive the news summary directly via email. To subscribe to *JUSTNET News*, go to https://www.justnet.org/app/puborder/subscribe/subscribe.aspx, email your request to asknlectc@justnet.org or call (800) 248-2742.

Note: The mentioning of specific manufacturers or products in TECHshorts does not constitute the endorsement of the U.S. Department of Justice, NIJ or the NLECTC System.

Follow-Up Report on Virginia's Threat Assessment Teams Released

National Institute of Justice

A follow-up report funded by the National Institute of Justice, *Threat Assessment in Virginia Schools: Technical Report for 2014-2015*, describes the student threat assessment process in Virginia public schools, with information on the prevalence of threats across school levels, the kinds of threats made by students, how schools responded to threats, and the outcomes for students and their intended victims. The primary focus of this report is on threats to harm others; it is a descriptive summary of survey findings that does not attempt to reach final conclusions or recommendations about threat assessment practice in Virginia schools.

Data behind the research came from a school safety survey conducted annually via its website by the Virginia Center for School and Campus Safety, part of the Virginia

Department of Criminal Justice Services, with analysis conducted by a team led by Dr. Dewey Cornell from the Youth Violence Project of the Curry School of Education at the University of Virginia. The report is available for download at http://curry.virginia.edu/uploads/resourceLibrary/UVA_Threat_Assessment_Report_ready_for_release_3-11-161.pdf.

A previous report, *Threat Assessment in Virginia Schools: Technical Report of the Threat Assessment Survey for 2013-2014,* provided information about the initial impact of the threat assessment teams, which were mandated by the Virginia General Assembly starting with the 2013-2014 school year. That report was profiled in an article published in the July/August 2015 issue of *TechBeat* (https://www.justnet.org/InteractiveTechBeat/eTECHBEAT/eTechbeat_JulAug_2015/index.html).

Statistical Analysis Tools Available From Bureau of Justice Statistics

Bureau of Justice Statistics

The Bureau of Justice Statistics has tools available to examine data on adults on probation and parole. The Corrections Statistical Analysis Tool (CSAT) – Probation, allows users to examine data collected by the Annual Probation Survey on adult probationers. It includes all adults, regardless of conviction status, who have been placed under the supervision of a probation agency as part of a court order. The Corrections Statistical Analysis Tool (CSAT) – Parole, allows users to examine data collected by the Annual Parole Survey on persons sentenced as adults. It includes parolees who were conditionally released to parole supervision by parole board decision, by mandatory conditional release, through other types of post-custody conditional supervision, or as the result of a sentence to a term of supervised release.

The CSAT tools allow users to create custom tables and include frequently asked questions and a user's guide. For more information, go to http://bjs.gov/probation/ and http://bjs.gov/parole/.

Report on Firearms Assaults Against Law Enforcement Officers

Office of Community Oriented Policing Services, Bureau of Justice Assistance and Major Cities Chiefs Association

Understanding Firearms Assaults Against Law Enforcement Officers in the United States attempts to answer important questions regarding firearm assaults against law enforcement officers. It examines the differential risks that are thought to influence the use of deadly force against police officers in the United States.

Initially developed as a framework for discussion in the 2014 Officer Safety and Wellness Group roundtable dedicated to identifying best practices for reducing firearm assaults and ambushes, the report reviews the group's findings on law enforcement policies, procedures, training, and agency characteristics that can reduce officer deaths and injuries.

The report is divided into three sections: the meeting's findings and recommendations, a review of 50 years of literature written about situational factors that could lead to assaults, and data identified through a current study. To read the report, go to *http://ric-zai-inc.com/Publications/cops-w0797-pub.pdf.*

PUBLIC SAFETY TECHNOLOGY
In The News

JUSTNET

Following are abstracts on public safety-related articles that have appeared in newspapers, magazines and websites.

Missouri Takes Steps to Address the "Graying" of Prison Population

Public News Service-MO, (03/28/2016)

Missouri is one state that has taken the initiative to accommodate an aging prison population. Linda Redford, director of the Central Plains Geriatric Education Center at the University of Kansas, notes that Missouri has set up enhanced-care units in some larger prisons. In some cases, inmates are learning health-care skills by helping take care of each other. Some states have an early-release program for elderly prisoners.

http://www.publicnewsservice.org/2016-03-28/criminal-justice/missouri-takes-steps-to-address-the-graying-of-prison-population/a51050-1

New Law Will Make It a Felony to Remove GPS Monitoring Device

WESH.com, (03/31/2016)

A new law, backed by the Domestic Violence Task Force in Orange County, Fla., will make it a felony to remove a GPS monitoring device. Law enforcement will be able to move to immediately arrest someone who cuts off a monitor rather than going to court and requesting a warrant. The law may provide greater safety for victims of domestic violence, local officials said.

http://www.wesh.com/news/new-law-will-make-it-a-felony-to-remove-gps-monitoring-device/38792098

Paws With a Purpose

Clay Today, (03/16/2016), Kenneth Detwyler Jr.

A Florida county is participating in a program to benefit both prison inmates and shelter dogs. Clay County Animal Care and Control recently teamed up with a Jacksonville Beach-based animal welfare organization, Pit Sisters. Five Clay County canines will go to prisons as part of Pit Sisters' program called Teaching Animals and Inmates Life Skills. Inmates will train, socialize and care for the dogs, with the goal of finding a home for the animals.

http://claytodayonline.com/stories/paws-with-a-purpose,1511

Click here for recent public safety-related articles from the news media.

Go

WWW.JUSTNET.ORG

JUSTNET News. Includes article abstracts on law enforcement, corrections and forensics technologies that have appeared in major newspapers, magazines and periodicals and on national and international wire services and websites.

Testing Results. Up-to-date listing of public safety equipment evaluated through NIJ's testing program. Includes ballistic- and stab-resistant armor, patrol vehicles and tires, protective gloves and more.

Calendar of Events. Lists upcoming meetings, seminars and training.

Social Media. Access our Facebook, Twitter and YouTube feeds for the latest news and updates.

Do More With Less. Highlights creative programs and resources to help agencies meet challenges as budgets shrink and demands on departments grow.

Tech Topics. Browse for information on law enforcement, corrections and courts technologies.

Public Safety Technology in the News.
Click here for recent public safety-related articles from the news media.
Go

You Tube
http://www.youtube.com/JUSTNETorg

f
https://www.facebook.com/JustNetorg

https://twitter.com/JUSTNETorg

JUSTNET