

# TechBeat

February 2018

by JTIC

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## About TechBeat



TechBeat is the monthly newsmagazine of the National Law Enforcement and Corrections Technology Center System. Our goal is to keep you up to date on technologies for the public safety community and research efforts in government and private industry.

### **Subscriptions:**

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### **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 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.



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The National Institute of Justice is a component of the Office of Justice Programs, which also includes the Bureau of Justice Assistance; the Bureau of Justice Statistics; the Office for



Victims of Crime; the Office of Juvenile Justice and Delinquency Prevention; and the Office of Sex Offender Sentencing, Monitoring, Apprehending, Registering, and Tracking.

### **[WWW.JUSTNET.ORG](http://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.

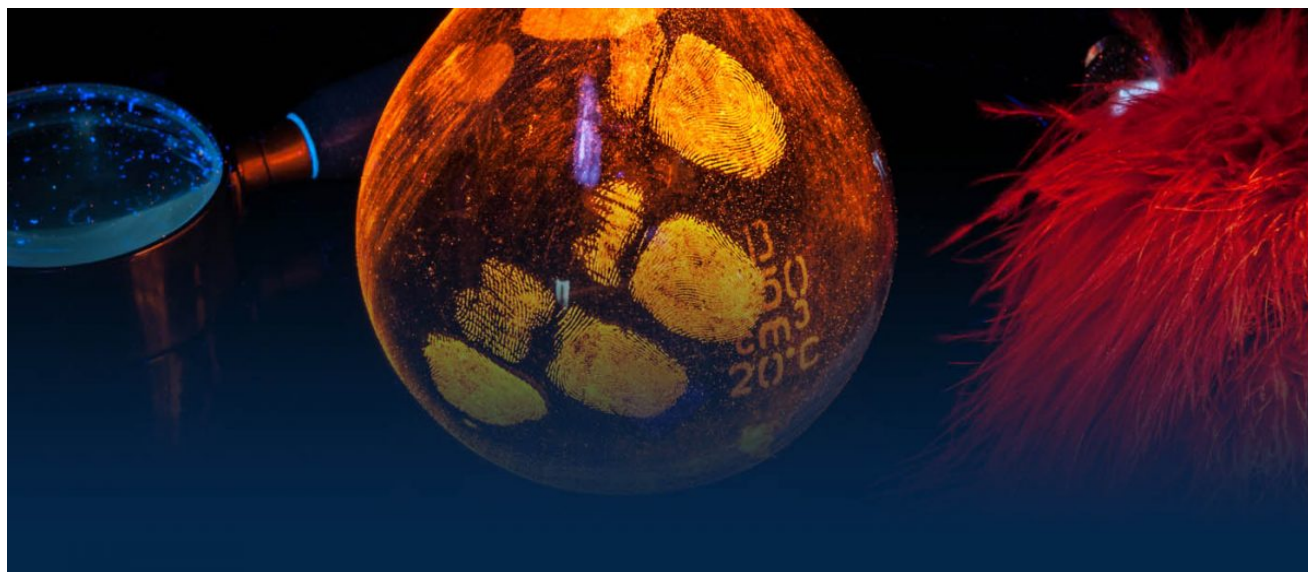
**Testing Results.** Up-to-date listing of public safety equipment evaluated through NIJ's testing program. Includes ballistic- and stab-resistant armor, patrol vehicles and tires, and more.

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# ALS Sheds a Different Light on Crime Scenes

## ALS Sheds a Different Light on Crime Scenes

To a casual observer, it might seem like the investigator is wasting his time: setting up his camera, putting on some kind of goggles and using nothing more than a flashlight to supplement the available lighting.

Except that's not an ordinary flashlight. It's an alternate light source (ALS), and the difference it can produce in detecting and documenting evidence would quickly make a believer out of that skeptical bystander.

Released in January 2018 by the National Institute of Justice's Forensic Technology Center of Excellence (FTCoE), *Landscape Study of Alternate Light Sources* provides a basic understanding of the technology's uses, benefits and limitations, and includes a glossary, case studies and information on products currently available on the market. The FTCoE is part of NIJ's National Law Enforcement and Corrections Technology Center System.

ALS technology has been in use for a number of



years, but recent innovations have led to a crowded and sometimes confusing market, with more than 50 devices from which to choose. The information included in the report is derived from current literature and interviews with users and technology developers, providing a thorough assessment of the considerations that affect procurement, training and use. It also includes product tables highlighting ALS devices available for purchase.



“ALS is well-established in the field for crime scene and sexual assault investigations, and other applications as well,” says Jeri Roper-Miller, FTCoe director. “There have been several advances in recent years and the technology has become very portable. Handheld devices can be used by just one person, and you can greatly enhance photography by using its capabilities.”

“The technology has been consistently improving with the use of LEDs, better filters and reduced battery size,” says Rebecca Shute, who led the team that produced the report. “This has led to the market’s being really crowded, which is great, but it also creates a challenge for agencies looking to replace or implement the technology. Products range from small handheld flashlights that use only one wavelength to something the size of a shoebox that uses 16 or more wavelengths. Costs can range from \$20 to over \$10,000.”

All of these factors combined to make the technology a candidate for one of the center’s landscape reports, which more often focus on cutting-edge technology, but always seek to help law enforcement agencies and forensic laboratories select the device that works best to meet their needs. When it comes to ALS, those needs most commonly include crime scene investigation, forensic biology, latent prints, trace evidence, medicolegal death investigation and forensic nursing, and the report provides illustrative scenarios for each type of use.

“We designed this report based on applications,” Shute says. “We understand that many agencies use ALS, both in the lab and in the field, and we wanted to provide a way for them to make better informed purchasing decisions. We wanted them to be able to see themselves in the report and say ‘this is me.’ ”

ALS devices included in the scenarios and the report emit light in the visible and ultraviolet regions of the electromagnetic spectrum. The ALS causes certain materials to fluoresce,

which enhances the ability to visualize specific evidence. Evidence illuminated by these light sources can be seen by using a barrier filter, such as goggles, and documented for court purposes with a standard digital camera equipped with an appropriate filter.

“You can use ALS devices to detect a wide variety of evidence, things like hairs and fibers, body fluids, even gunshot residue,” Shute says. “They can save a lot of time at crime scenes, and as we all know, time is valuable. And you don’t have to go to a Mercedes model to get good results; agencies often do a lot of research and still choose the smaller, less expensive devices.”

She reminds agencies that choosing the right barrier filter also plays a key role in effective ALS use, and adds that it takes proper training to prove a device’s worth.

Ropero-Miller says the training could come via a train-the-trainer format once someone in the agency gets up to speed on the use of the equipment, adding, “This is a technology that can be very useful no matter what the size of the agency. A small or rural agency with more budget constraints can still implement it at an affordable low cost.”

Shute made use of some of that training herself, taking a hands-on ALS photography class to help inform the research: “I had conducted a large number of interviews with users over the telephone that were helpful, but I didn’t understand what they meant by certain things, such as the challenges of using a device with a ‘hot spot.’ By taking the training, I got to use it first-hand and observe others using it first-hand, and I learned that using ALS requires patience, keen eyes, knowing what to look for and choosing the right filters.”

All of those considerations — training, the right filters, sifting through the numerous available devices — combine to make this technology innovative, even though it’s not new, Ropero-Miller says: “When we think of innovation and novel technologies, we think they have to be completely new, but I think ALS is a good example of how a well-established technology can become so enhanced and innovative that it’s worth doing outreach to ensure the field knows about the advances.”

*Landscape Study of Alternative Light Sources* can be downloaded from <https://rti.connectsolutions.com/p9p72qsvhon/>. For more information on the programs of the FTCoE, contact Jeri Ropero-Miller at [jerimiller@rti.org](mailto:jerimiller@rti.org). For more information on forensics programs of the National Institute of Justice, contact Gerald LaPorte, Director, Office of Investigative and Forensic Sciences, at [Gerald.LaPorte@usdoj.gov](mailto:Gerald.LaPorte@usdoj.gov).

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# Certified Field Search Instructors Share Their Knowledge

## Certified Field Search Instructors Share Their Knowledge

There's an African proverb that has been used in many contexts in the fight against illiteracy: Each one, teach one. When it comes to the Certified Field Search Instructors (CFSI) program, that proverb could be paraphrased as: Each one, teach many.

In the four years that Dr. Jim Tanner has been teaching CFSI classes on behalf of the National Institute of Justice (NIJ) and the Justice Technology Information Center (JTIC), 129 individuals have earned certification to return and train their coworkers, and often train professionals from other law enforcement agencies as well.

Tanner, who helped develop the software 12 years ago, says a conservative estimate of the users reached by the training is “many many thousands,” far more than he could reach alone in the days when he taught classes of individuals how to use the free computer forensic software. Field Search allows users to quickly and efficiently search a target computer and create a detailed report of the findings. (For more information on Field Search, visit <https://www.justnet.org/fieldsearch/fieldsearch.html>.)

More individuals will get a chance to spread that knowledge after they complete the current offering of the course, set for March 22-23, 2018, in Boulder, Colo. The instruction is free; individuals must pay their own transportation and lodging costs, and bring along a notebook computer. In these days of tightened budgets, getting training for an entire department for the cost of one individual's trip is a real bargain, Tanner says. (Agencies often make Field Search training available to staff from other nearby agencies as well; for assistance in finding a trainer, visit <http://www.kbsolutions.com/>.)



“It’s really more of a hands-on seminar than a class, bringing individuals to a knowledge level about Field Search comparable to that of the designer and developer,” says Tanner, who created the software along with Jim Persinger in 2006. “I explain and explore all of its elements, and cover some common pitfalls encountered in teaching and some tricks to use in class.”

He emphasizes that the class does not teach how to use the software itself; in fact, attendees must pass an online exam demonstrating thorough knowledge of how to use the software before gaining entrance. And before they go on to earn their teaching certification, they must pass two additional in-class exercises as well.

“Basically my goal is to get them to understand ‘what’s under the hood,’ so when they get questions from their own students, they have enough knowledge to answer them. There’s a PowerPoint presentation, but quite frankly, that’s not how you teach forensic software,” Tanner says. “You teach it by having them do intensive hands-on work in class.”

Once individuals complete the class and obtain certification, they also gain:

- Automatic access updates and “cheat sheets” on new features.
- Updated manuals.
- Email bulletins on minor tweaks.
- The opportunity to beta test new versions of the software (the current Version is 5; this is the first CFSI class on that version).
- Direct access to ask questions of Tanner through his website.
- A new feature, a shared blogspace hosted by JTIC where they can network and brainstorm

with other CFSI.

The certification belongs to the individual, not the agency, meaning that instructors can take their training on to a new agency or even into retirement.

“In addition to giving them hands-on experience during the two-day class, I also look at their personalities to ensure they’re ready to make that personal commitment to training and doing a good job. Ultimately, they represent NIJ, JTIC and Field Search and before I authorize someone, I want to be sure they will do a good job of that,” Tanner says. He notes that of the 131 individuals who have taken the class, only two have failed.

Once they’re certified, Tanner encourages instructors to check his website to ensure they have the most current software version before they themselves teach a class. Only CFSI can access the software through that portal; through the JUSTNET website, JTIC distributes the software to interested individuals after first verifying that they are either sworn law enforcement, a government employee or a member of the U.S. military.

“To the best of our knowledge, there are no copies of Field Search in unauthorized hands. We have no idea how many times it has been copied, but we’ve never heard that there’s a copy floating around freely and getting into the wrong hands,” Tanner says.

Although the train-the-trainer concept of CFSI does greatly reduce costs for an agency, many other training programs have gone to online learning, which would cut costs even farther. However, Tanner says that although he’s given it consideration, that’s a concept that just doesn’t work well with forensic software.

“During the training, I have assistants who help me walk the classroom, look at screens and troubleshoot,” he says. “I don’t know of any forensic software that trains online. The CFSI training is very intense, I probably stuff six days’ worth of materials into two, and there’s homework as well. There are a bazillion different types of computers out there they could encounter and they really need to know the ins and outs of the software structure to make Field Search work on all of them.”

So while distance learning isn’t likely in the near future, Tanner hopes the free classroom space through his part-time consulting work with the Probation Department of the 20th Judicial District of Colorado could lead to expansion to two sessions a year. His wife has provided volunteer assistance with meeting planning, and he remains committed to keeping

Field Search completely free and available through JTIC.

“It’s been heavily used both in the United States and around the world and has greatly increased public safety. That’s why I’m committed to keep on doing it,” Tanner says.

For more information about the upcoming training, visit [www.kbsolutions.com/CFSISyllabus.pdf](http://www.kbsolutions.com/CFSISyllabus.pdf) or contact [CFSI@kbsolutions.com](mailto:CFSI@kbsolutions.com).

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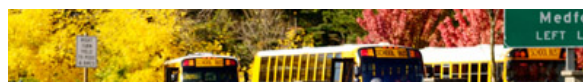


# Institutions of Higher Learning Enthused About Free Active Shooter Video

## **Institutions of Higher Learning Enthused About Free Active Shooter Video**

A consortium of Boston-area colleges and universities — institutions known for being innovative — recently completed a project aimed at keeping other campuses from “reinventing the wheel.”

In fall 2017, the 17 schools of the Boston Consortium for Higher Education (<http://www.boston-consortium.org>) announced the availability of an unbranded active shooter training video aimed specifically at institutions of higher learning. Available free on request, the video allows colleges and universities to add their own branding and message to the opening and closing frames, with the caveat that the Boston Consortium and Yale University, which developed the original script, receive acknowledgement in the credits. Since announcement of the video’s release in mid-October, 76 additional schools have requested copies, a number that impresses Consortium Director of Program and Administration June Kevorkian.



“We thought that only small colleges would be interested, but we’ve received requests from institutions of all sizes and from all across the country,” she says. “I’m pleased at the number of schools and how enthusiastic they are about it.”



Those 76 schools are in addition to the Consortium members, all of whom are posting it on their websites, using it in classroom instruction and offering it in small-group training.

“When you think about the fact that 17 different schools with different needs and ideas and thoughts worked together on this video, I believe that they deserve a lot of credit for being able to collaborate and compromise so well, ending up with a product of which they are proud and that others around the country see as a really great asset,” Kevorkian adds.

The video runs less than eight minutes in length and uses many of the principles being taught around the country to address an active shooter situation as its basis. Activity takes place in campus settings including a library, classrooms, labs and residence halls; filming takes place from a first-person perspective; and the video includes a diverse student population. Members of the team watched a number of videos produced by other universities to get a feel for what they wanted to include.

“We looked at all the videos we could find that related to colleges and universities and tried to determine the common threads, and what we liked and didn’t like. Then we tried to pull the best sequencing and messaging out of those,” says Eileen O’Donnell, emergency management planner at Boston College. “Ohio State has an excellent one, as does Yale University.”

Stephen Morash, emergency management director at Boston University, adds: “The first video we screened was “Run Hide Fight” from the city of Houston and the U.S. Department of Homeland Security. A lot of us thought it was a good training tool, but we did get some feedback that it was a little too violent and then of course, it’s in an office setting and we wanted an academic setting. We started screening other videos and we really liked the Yale video a lot.”

In fact, the team liked the Yale video so much the Consortium asked for permission to base their script on it. Emerson Productions, the creative team from Emerson College, hired the



actors and provided the production process needed to make the video a reality, and all of the Consortium members contributed funding in addition to using grant funding from the Davis Educational Foundation.

“Producing a commercial-quality video takes an enormous amount of resources. We all had the same need and we all wanted to educate our campuses on this issue,” says John Tommaney, director of emergency management at Boston College. “We realized that we are some of the bigger schools in the Boston area and that the smaller ones have the same needs. That’s why we set out to create a video that can be used by any institution.”

“We’d all seen that other schools had created custom videos and it was a project that each of us wanted to do,” says Geoffrey Bartlett, director of emergency management at Tufts University. “We realized that for any one of us to do a project like this independently was quite a challenge, and that we could work on it together and create one video that we all could use.”

David Barber, senior emergency management specialist at MIT, adds: “This particular group of emergency managers had been working together successfully on various projects for several years. Because of those ongoing relationships, we were able to talk this over and realize it was something we could do better as a group.”

While members of the team gave partial credit for the video’s success to their recognition of a common need and the strength of their cooperative relationships, they also credited Kevorkian and the Consortium for keeping the project on point, on track and on schedule and ensuring that “we delivered the product we wanted to deliver.”

For more information, contact June Kevorkian at (339) 225-3824 or email [jkeorkian@boston-consortium.org](mailto:jkeorkian@boston-consortium.org). View a version of the video branded to Boston College below, or visit [https://www.youtube.com/watch?v=xa89laJ\\_CkE](https://www.youtube.com/watch?v=xa89laJ_CkE).



*Article photo:TFoxFoto/Shutterstock*

*Main photo: Monkey Business Images/Shutterstock*





## State and Federal Prison Population Declined in 2016

### *Bureau of Justice Statistics*

The number of prisoners in state and federal correctional facilities fell by 1 percent from 2015 to 2016, according to the Bureau of Justice Statistics report, *Prisoners in 2016*. It was the third consecutive year that the U.S. prison population declined.

State and federal prisons held an estimated 1,505,400 prisoners in 2016, 21,200 fewer than in 2015. The population of the Federal Bureau of Prisons accounted for 34 percent of the total change in the prison population, dropping by 7,300 prisoners to 189,200 prisoners. Although the overall prison population decreased, the number of prisoners held in private facilities increased 2 percent in 2016.

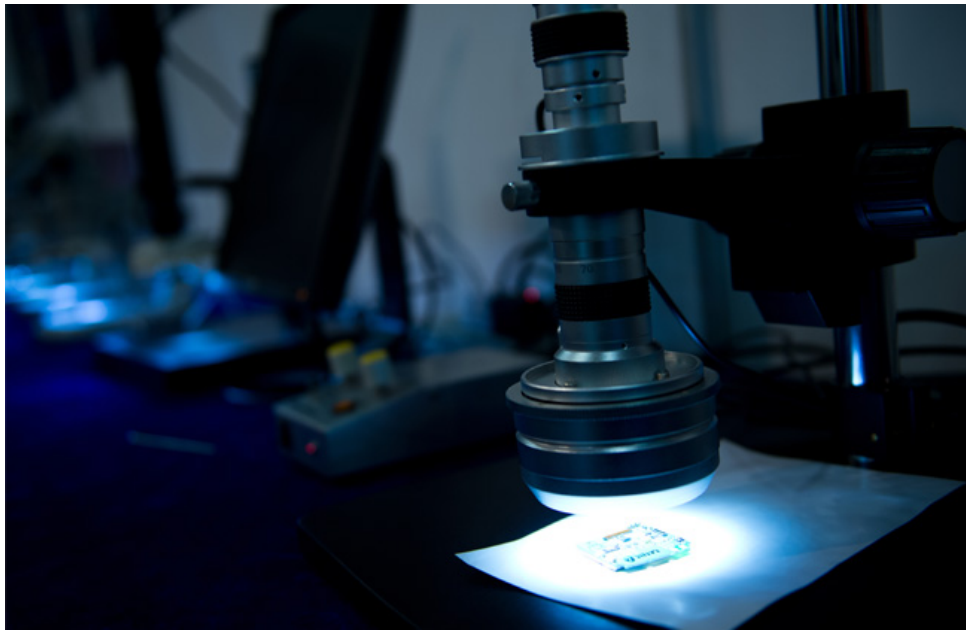
State and federal prisons admitted 2,300 fewer prisoners in 2016 than in 2015. The BOP accounted for the majority (96 percent) of the decline, down 2,200 admissions.

More than half (54 percent) of state prisoners were serving sentences for violent offenses at

year-end 2015, the most recent year for which data were available. Nearly half (47 percent) of federal prisoners had been sentenced for drug offenses as of Sept. 30, 2016, the most recent date for which federal offense data were available. More than 99 percent of those drug sentences were for trafficking.

To read the report, click [here](#).

*Main photo: Thinkstock/Gettyimages*



# Linking Suspects to Crime Scenes With Particle Populations

*National Institute of Justice*

This article describes research into the forensic value of very small particles in solving crimes.

Researchers examined cell phones, handguns, drug packaging and ski masks from the San Diego County Sheriff's Office to determine if such particles can make physical evidence more valuable in court cases. The point of this study was to test particles taken from actual pieces of evidence, apply established analytical and interpretive methods, and determine the evidential value of such particles.

The researchers used a combination of swabs and scanning electron microscope techniques to sample 30 handguns, 31 cell phones, 36 drug packaging specimens and 32 ski masks. Overall, 82 percent of the VSP specimens recovered showed "sufficient variety and complexity in their VSP profiles to allow meaningful classification."

To read the article, click [here](#).

*Main photo: hxdbzy/Shutterstock*