

# TechBeat

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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.

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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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# Rapid DNA Forum Showcases the Technology

## **Rapid DNA Forum Showcases the Technology**

*If you only know about DNA testing from watching television, you may think the process goes “collect a sample, put it in a machine and boom! You have results.”*

*If you’re a forensic scientist, you know that the actual process is much more painstaking, includes more steps and takes much longer. However, with the August 2017 passage of the Rapid DNA Act by Congress and the movement of Rapid DNA technology into the commercial market, the “television perception” has moved one step closer to reality.*

Rapid DNA instruments automate and accelerate things, allowing law enforcement officers trained in the process to take a cheek swab and use a Rapid DNA instrument housed in the station to produce a result. This result can then be compared to the FBI’s Combined DNA Index System (CODIS) and used, for example, to provide preliminary identification of victims and eliminate or confirm investigative leads. Current best practices call for law enforcement agencies to send additional samples to a DNA lab for confirmation that an expert witness can testify to in court.

The National Institute of Justice (NIJ) invested in early advances in Rapid DNA in 2008 via research related to the creation of microchips for the eventual miniaturization and speedy processing of DNA. By 2017, its evolution had reached the point where a bipartisan bill backed by the forensic science and law enforcement communities permitted the comparison of Rapid DNA results to CODIS. Coincidentally, this bill



became law on Aug. 18, one day after the end of a three-day Rapid DNA forum hosted by the NIJ Forensic Technology Center of Excellence (FTCoE). This forum brought together not only members of the law enforcement community, but also representatives from various federal government agencies, the American Society of Crime Laboratory Directors (ASCLD) and vendors.

“It was great to bring all of those stakeholders together so they could see each other’s points of view,” says Donia Slack, FTCoE associate director. “Law enforcement sees the technology as something they can do themselves — sample in, answer out. ASCLD wants to make sure they don’t push its limits in a way that puts a law enforcement officer on the stand who lacks the technical expertise to testify about the results. One of the things we did at the forum was showcase different use cases to emphasize the need to use this in tandem with results obtained from a crime lab.”

The forum gave the two commercial vendors the opportunity to present their technologies, including time for hands-on demonstrations, and gave participants time to exchange points of view and discuss the various ways in which the technology could be used.

“We gave law enforcement participants an opportunity to talk with FBI representatives about ‘Are we able to do this? How can we do that?’ ” says the FTCoE’s Sarah Norsworthy. “People have been talking about using it for years now and it’s finally at the forefront.”

In addition to being able to ask questions of the FBI representatives, law enforcement representatives had the opportunity to talk with forensic scientists from ASCLD, which is presently working on developing best practices guidance on how to use Rapid DNA technology responsibly, and also to discuss technology applications such as:

- Pre-processing of sexual assault samples. Although much attention has focused on officers' being able to take a cheek swab and process it immediately, the technology works with many types of casework samples.
- Identification of remains in mass fatality events. Because the instruments are portable, they could be taken into the field and used at the site.
- Improved border security. Using Rapid DNA technology could allow agents to quickly determine whether an individual has illegally crossed a border before or whether a group of individuals claiming to be a family are actually related, which has implications related to human trafficking.

“It was great to have all these people in the room and have them say, ‘Huh, I’ve been thinking about it all one way and there are all of these other applications,’ ” Slack says.

One drawback to implementing use of Rapid DNA is the cost, which puts the purchase price of an instrument out of reach for many medium and smaller law enforcement agencies.

“There are hefty costs and agencies will say ‘That sounds great but I don’t know if we can afford it,’ ” says Slack, noting that it costs approximately \$100 to \$150 to process each sample in addition to the purchase price of the instrument itself. “However, a DNA analyst pointed out to me that with the focus on violent crimes and sexual assault, when a high-profile case comes in, they have to stop everything they’re doing and process those samples. It interrupts the workflow on various instruments and disrupts individuals’ caseloads. With Rapid DNA, they could start that sample running and continue with the rest of their day. In that case, the savings from enhanced efficiency would offset the cost of the processing.”

Norsworthy further notes that vendors are often willing to work with individual agencies on pricing, and will also provide initial training and assistance with setup.

Taking all of those factors into account — the need for crime lab backup, learning best practices, considering ways to use the technology and the cost — gives law enforcement agencies much to consider about the technology. Agencies also need to consider the recently released position statement from ASCLD (<http://www.asclld.org/wp-content/uploads/2017/11/ASCLD-Position-Statement-RAPID-DNA.pdf>), which states, in part “at this time, ASCLD supports a position for database inclusion of single source known reference profiles only. ASCLD supports a position for continued database inclusion of crime scene samples after expert review, as provided by current DNA testing protocols in an accredited crime laboratory.” The FTCoe can help with those technology considerations with its recently

released In-Brief, which can be downloaded from <https://rti.connectsolutions.com/p9f9rm31iju/>.

*For more information on the FTCoE Rapid DNA Technology Forum and the technology in general, contact Donia Slack at [dslack@rti.org](mailto:dslack@rti.org); or email Sarah Norsworthy at [snorsworthy@rti.org](mailto:snorsworthy@rti.org).*

*Article photo: isak55/Shutterstock*

*Main photo: Image Wizard, PeterPhoto123/Shutterstock*



# Officer Creates Comic to Help Students Make Good Choices

## Officer Creates Comic to Help Students Make Good Choices

*Spider-Man. Wonder Woman. Thor. Batman. Superman. All comic book figures that have entertained millions worldwide, and also have had a positive impact on the lives of some young people.*

*A new team of superheroes joined them in the comics arena in fall 2017, a team that may never reach quite as large an audience, but may join them in having a positive influence on preteens across the country: the superheroes of Team G.R.E.A.T.*

Created, written and drawn by Clarksville (Tenn.) Police Officer Greg Granderson, Vol. 1 of the comic “When Gangs Strike Fear...A City Needs Heroes,” can be found on the Gang Resistance and Education Training (G.R.E.A.T.) website as a free digital download (<https://www.great-online.org/Documents/Public>



[/PDF/team-great-comic.pdf](#)) that officers and teachers can use to supplement the G.R.E.A.T. curriculum in elementary and middle schools. Volume 1 supplements the first two lessons in the curriculum, focusing on the consequences of making bad choices; Granderson presently is working on finalizing Volume 2, which will accompany lessons 3 and 4, and scripting Volume 3, which goes with the final two lessons in the program.

“I’ve always been a fan of comics, and I often say Stan Lee [creator of Spider-Man] kind of raised me a little bit,” says Granderson. “Look at the impact it has: half the movies at the box office stem from comics.”

Granderson, a former military police officer, moved into coordinating the department’s G.R.E.A.T. program from patrol in 2012 and quickly realized comics represented a medium that could be entertaining and grab students’ attention.

“Comics influenced a lot of the life decisions I made and helped me with the moral choices behind them. I knew what they did for me as a child and thought I could take advantage of that,” he says.

Working on his own time, Granderson started out in 2015 to script the books and locate a local art student interested in doing the drawing. When none could be found, he began researching ways to create the art himself, and found a user-friendly CGI program that allowed him to generate his own art, even though his freehand drawing skills are, by his own admission, nearly nonexistent.

“I had no background in art at all, just my love for comics. Having grown up reading them, I knew what they should look like. The art of comics is a very freestyle medium, it’s not like producing a novel,” Granderson says.

In the course of researching software, he located a mentor who also produces his own online comic books that helped him get started and make his conception of Team G.R.E.A.T. become a reality.

And just as a mentor gave him a hand in getting his comic books started, another mentor taught him the skills that have made his G.R.E.A.T. presentations in such demand that schools outside the Clarksville city limits want him to come to their schools: vaudeville-type “feats of strength” such as tearing phone books in half, bending a 45-inch steel bar with his

teeth and breaking bricks with his head.

Using the motto “Unhealthy choices make us weak — healthy choices make us strong,” Granderson takes a one-hour presentation out into more than a dozen Montgomery County schools in addition to teaching the one-week G.R.E.A.T. curriculum to fifth-graders in 15 Clarksville schools. Granderson says he learned the skills from Dennis Rogers, called “Pound for Pound the World’s Strongest Man,” (<http://www.dennisrogers.net/pound-for-pound/>) while working as part-time youth pastor prior to taking on the G.R.E.A.T. curriculum. That love of working with youth led him to apply for the department’s G.R.E.A.T. instructor position when it became available, and Police Chief Al Ansley approved of his pitch on offering the “feats of strength” program to the county schools, which don’t have their own G.R.E.A.T. program.

Three years later, Granderson again had to pitch and sell an idea, this time the comic books to the G.R.E.A.T. board, in order to get the series posted on the website for nationwide use. Granderson himself does not use the comic in his classroom presentations; rather, he makes sure all the teachers he works with are aware of its availability. Granderson says he would like to eventually see printed copies become available, with any proceeds going back into the G.R.E.A.T. program.

For more information, visit <https://www.facebook.com/gregsegicomics> or contact Jim Knoll, Public Information Officer, Clarksville Police Department, at (931) 648-0656, ext. 5673, [jim.knoll@cityofclarksville.com](mailto:jim.knoll@cityofclarksville.com).

*Article photo: Greg Granderson*

*Main photo: Courtesy of the Clarksville (Tenn.) Police Department*



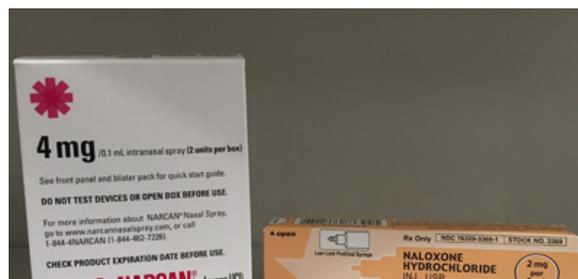
## Michigan School Introduces Naloxone Kits, Training

### Michigan School Introduces Naloxone Kits, Training

Not that many years ago, portable automated external defibrillators (AEDs) were the tools of emergency medical personnel, used judiciously under physician supervision. Today, they hang on the walls of office buildings, airports, shopping malls, houses of worship, schools and other locations.

Now there's another lifesaving tool slowly making its way from the EMS toolkit into more mainstream areas: naloxone, which is used to reverse opioid overdoses. In Gaylord, Mich., administrators and staff at Gaylord High School and Gaylord Middle School receive training to ensure they know how, and when, to use the naloxone kits available in the school offices.

“Our take is, we hope we never have to administer it, but if it can save a life, the downside of using it doesn't come close to the downside of not using it,” says Brian Pearson, superintendent of Gaylord Community Schools.



The free naloxone kits, supplied to the school through a partnership between a pharmaceutical company and a national foundation, were



brought to the school district's attention by Up North Prevention, a community initiative to advance substance abuse prevention efforts in northern lower Michigan. Up North's Linda Gall, a certified prevention specialist, learned about the program at a conference and brought it to the school for consideration. The district school safety committee made the decision earlier in 2017 to implement the project for the 2017-2018 school year.

Pearson explains that the committee includes local law enforcement, EMS, the district attorney, various community organizations and parents, and it meets regularly to discuss current issues and how the members can work together to continue to make Gaylord a safe place to learn.

“Our goal is to foster a safe and collaborative culture. You need to ensure safety first for kids to learn. You can have the best teachers in world, and if your students don't feel safe, they won't learn well,” he says.

The committee worked with the board of education to develop a clear policy on how and when to use naloxone, and that protocol starts with calling 911 before administering the drug. All teachers receive basic training from the state police and local EMS on how to recognize the signs and symptoms of an overdose, and office staff receive more detailed training on using the kits.

Corey Hebner, the community state trooper for the Gaylord area, has conducted numerous train-the-trainer sessions for his fellow law enforcement officers, and provides oversight to the training at Gaylord. He says its basic focus is on awareness of the signs and symptoms of an overdose, which can include heavy perspiration, a grayish hue to skin, shallow breathing, skittish behavior and/or passing out.

In northern lower Michigan, as in much of the rest of the U.S., first responders are being faced with heroin mixed with the powerful synthetic opioids fentanyl or carfentanil, sometimes requiring multiple doses of naloxone to reverse the overdose. Hebner emphasizes the need to call 911 immediately and to assume that one kit may not be enough to help.

“The beautiful thing about naloxone is if it is something else, the drug has no effect and causes no adverse reaction,” Hebner says. Training also provides staff with information on

problem behaviors to watch for that might indicate a need for an intervention that could potentially prevent an overdose, Pearson says.

“Brian is very proactive instead of reactive. He’s looking at the whole picture and we need to see more of that,” Gall says. “If other schools also take that approach, it becomes one more layer of prevention for the whole community.”

Up North Prevention works with various aspects of drug prevention in the community and in the schools in 14 counties, and has assisted with training at 55 local law enforcement agencies in the past two years, resulting in at least 39 lives saved due to naloxone use. Getting the program started in Gaylord, which is the largest school district in the area (approximately 3,200 students in grades K-12), may encourage other schools in the area to apply for the kits as well, Pearson says.

In a small town like Gaylord (population less than 4,000), school events like football games and plays draw in hundreds of spectators, and the buildings themselves are also heavily used for local craft fairs, worship services and the like. While Pearson likened the naloxone kits to epi-pens and Hebner drew the parallel with AEDs, they join Gall in agreeing that naloxone is a way of rendering aid in a medical emergency whose time has come.

“Even if there’s only a one in 100 chance that we might ever use this to save a life, it would be ridiculous not to do this,” Pearson says.

For more information on how Gaylord Community Schools administer its naloxone program, contact Brian Pearson at [pearsonb@gaylord.k12.mi.us](mailto:pearsonb@gaylord.k12.mi.us). For more information on Up North Prevention and its programs, contact Linda Gall at (989) 732-6761 or Laurie Ames at (989) 732-6761.

*Article photo: PureRadiancePhoto/Shutterstock*

*Main photo: Matty Symons/Shutterstock*



# NIJ Begins Process to Update Standards for Law Enforcement Firearms

## NIJ Begins Process to Update Standards for Law Enforcement Firearms

*National Institute of Justice*

The National Institute of Justice (NIJ) has formed a Special Technical Committee (STC) to tackle updating standards for law enforcement shotguns and autoloading pistols, and creating a new standard for patrol rifles.

NIJ develops and publishes voluntary equipment standards that specifically address the needs of law enforcement, corrections and other criminal justice agencies to ensure that equipment is safe, reliable and performs according to established minimum performance requirements.

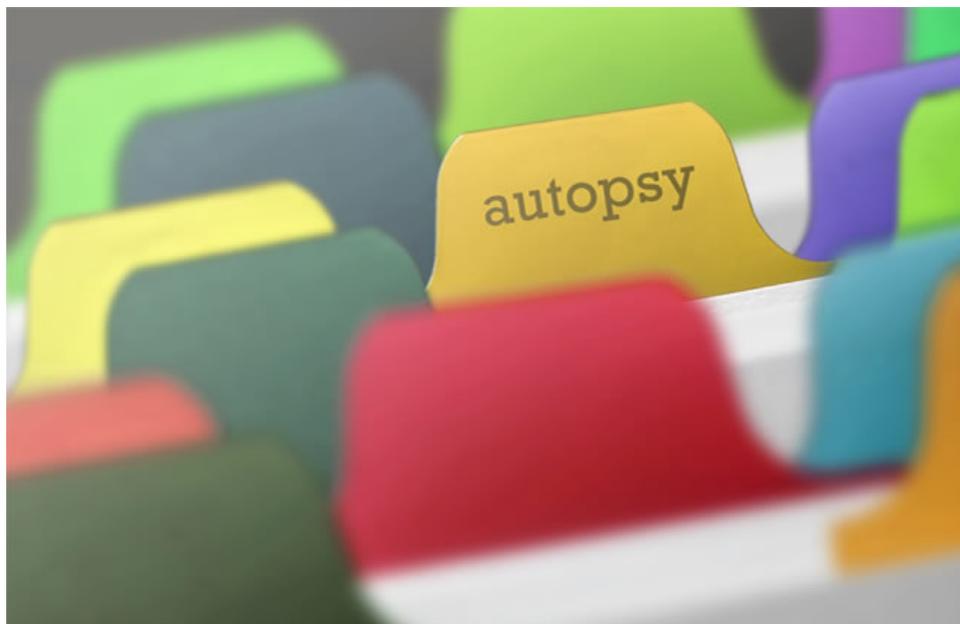
The Special Technical Committee on Law Enforcement Firearms is to update and revise the minimum performance standards, *Autoloading Pistols for Police Officers, NIJ Standard 0112.03 (Revision A)* and *12-Gauge Shotguns for Police Use, NIJ Standard 0113.00*, and develop a new minimum performance standard for patrol rifles. The STC is to articulate the

minimum performance requirements that U.S. law enforcement should demand of their pistols, shotguns and patrol rifles, and how to test firearms to determine if they conform to the requirements.

The STC includes individual firearms subject matter experts from federal, state and local law enforcement agencies; ballistics test laboratories; and individuals knowledgeable in standards development and product certification.

For information about NIJ standards efforts, click [here](#).

*Main photo: Glenn R. McGloughlin/Shutterstock*



# Using Advanced Imaging Technologies to Enhance Autopsy Practices

## Using Advanced Imaging Technologies to Enhance Autopsy Practices

*National Institute of Justice*

This NIJ Journal article discusses how using computed tomography (CT) scanning technology can help augment autopsies. The article explains how the use of advanced imaging technologies, such as CT, prior to or in place of a traditional (gross anatomy) autopsy would be advantageous in some situations.

The technology could offer solutions to some challenges faced by the medicolegal community, such as limited resources or conditions or circumstances that make the cause of death not easily diagnosed through a traditional autopsy.

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

*Main photo: TypoArt BS/Shutterstock*