



THE
CRIMESCENE
NEWSLETTER OF THE LAKE COUNTY CRIME LABORATORY

Financial Report

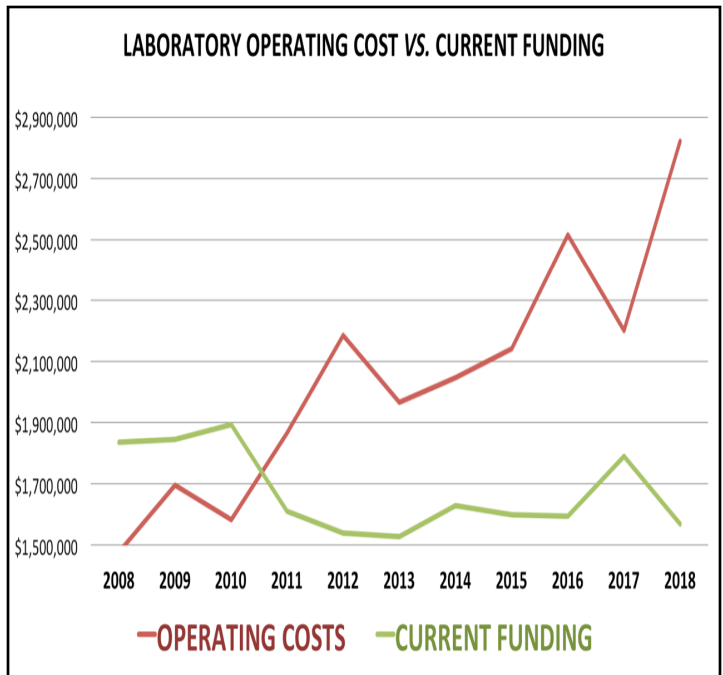
BY ROBERT SBERNA

“The Crime Laboratory is the most important crime-fighting tool we have in Lake County,” said Lake County Prosecuting Attorney Charles Coulson. “But we are facing a very serious financial crisis. An investment in our Crime Laboratory is vital to a safe and secure Lake County community in the years to come.”

The surging demand for forensic services, particularly drug testing and DNA analysis, has stretched the limits of the Lake County Crime Laboratory’s staff and resources.

A look at the Crime Laboratory’s evidence submissions during the past 10 years shows that the DNA caseload is up 241 percent. While the growth in DNA testing has resulted in more criminal cases being solved in Lake County, the increased workload has come at a steep cost, said Dr. Karen Zavarella, a Crime Laboratory DNA analyst.

“For the past decade, we’ve been running at a financial deficit,” Zavarella (CONTINUED ON PAGE 3)



Muzzled by DNA

BY ROBERT SBERNA

On April 4, 2017, Susan endured one of her worst nightmares. Susan’s 5-year-old son and 3-year-old daughter were abducted by her live-in boyfriend, Clarence Davis. The 24-year-old Davis had brandished a gun at their Willoughby Hills apartment complex and then sped away in Susan’s car with the children inside.

The abduction by Davis, an unemployed security guard with a history of violence, triggered a Northeast Ohio Amber Alert. The alert was cancelled several hours later when Davis’s sister took custody of the children and returned them unharmed to the Willoughby Hills Police Department.

Soon after, police recovered Susan’s car in Cleveland. Located inside was a full (CONTINUED ON PAGE 5)

Community Crime Lab

BY ROBERT SBERNA

In February 1975, when Charles Coulson first came to Lake County as an assistant prosecutor, the Lake County Crime Laboratory was in its second year of operation, staffed by just two scientists and housed in the basement of Lakeland Community College.

As Coulson's career has advanced—he has served as Lake County Prosecuting Attorney since 1995—he has watched proudly as the Crime Laboratory has greatly expanded its capabilities and achieved many notable milestones.

"I've seen the lab grow until it now includes every major forensic discipline," said Coulson. "The most significant development was the implementation of our DNA section. In cases where DNA is available for analysis, it is the gold standard for solving crimes. The Lake County Crime Laboratory has the most advanced form of analysis, including touch DNA. Nowadays, we don't need to have a bodily fluid such as blood, semen, or saliva to do DNA testing. With our ability to process touch DNA, we can use skin cells or even sweat that has dropped at a crime scene to get the identity of a perpetrator. For example, we had a safecracking case where one of our scientists saw a little tiny stain presumed to be sweat at the crime scene. She tested it and found DNA. From that evidence, police were able to identify the safecracker."

Coulson takes particular pride in the Crime Laboratory becoming accredited by the American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB) in 2000. In 2009, the Crime Laboratory achieved international accreditation by the ASCLD/LAB.

"These important accreditations mean the Lake County Crime Laboratory operates under the most stringent standards in the world," Coulson said. "Our scientists are known throughout the country and have received several prestigious awards. They also go to other crime labs to assess their operations and help them get accredited."

Coulson noted that Dave Green, a Crime Laboratory trace evidence expert, received the 2016 ASCLD/LAB Assessor Excellence Award. Green also earned the 2012 Outstanding Scientist Award from the Midwestern Association of Forensic Scientists, an organization of over 1000 scientists. Recently, the American Academy of Forensic Scientists announced that Green will be the recipient of its 2019 Meritorious Service Award (Criminalistics section).

"Doug Rohde (the Crime Laboratory's supervisor of chemistry and toxicology) is one of only a few experts in Ohio who is court-qualified to render an opinion as to the effects of alcohol and drugs on impaired drivers," said Coulson. "In fact, I get calls from other prosecutors throughout the state who want to use Doug because of his expertise. We're lucky to have him in our own back yard."

Among Lake County's most pressing current issues, said Coulson, is the opioid epidemic that is responsible for tripling overdose deaths from 2015 to 2017.

"The drug problem has grown every year, and it continues to grow," said Coulson. "I see no reason to believe that it will not continue to expand in the future. The Crime Laboratory is working hard to keep pace with the drug problem, but we now have backlogs. We need additional staff to handle the increased workload."

Coulson cautioned that the opioid problem affects every area of Lake County. "It's not just young people who are involved—we are seeing that people of all ages are using drugs," he said.

Drug use is not only increasing in Lake County, but new and more deadly drugs are appearing in our community. Crediting the Crime Laboratory for its work in identifying new substances, Coulson said, "Doug Rohde is seeing new opioids hit the streets on a weekly basis, with many of them coming from overseas."

Rohde was the first forensic scientist in Ohio to identify the synthetic opioid U-47700 in an overdose death in Lake County in 2016. The drug (known by its street name "pink") was so new that it had not yet been listed on federal or state lists of controlled substances. Rohde's identification of U-47700 led to Ohio being the first state to control its use.

Rohde diligently tracks the spread of fentanyl and other opioids seized from drug dealers or discovered during autopsies of overdose victims. When deadly fentanyl analogs such as carfentanil began turning up in the Crime Laboratory, Rohde alerted Lake County law enforcement agencies and first responders to warn them to use extreme caution when handling the drugs. Just a few grains of carfentanil, which is 100 times more potent than fentanyl, can be deadly to humans or K-9 dogs if inhaled or absorbed through the skin.

Coulson noted that Lake County's drug problem has spurred an increase in gun-related offenses. Over the past five to ten years, the number of violent crimes involving guns has risen substantially.

"When I first became (CONTINUED ON PAGE 7)

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said. “In 2008 and for several years after that, we had a financial reserve that we could draw on, but now our current funding only brings in about half of the amount we need.”

The Crime Laboratory receives its operating funds through a countywide tax levy that voters passed in 1999. The laboratory’s services are provided to Lake County law enforcement agencies at no cost, while out-of-county agencies are charged a fee.

“Back in 1999, we had seven full-time scientists” said Zavarella. “Now, almost 20 years later, we only have ten scientists working full-time in the lab in spite of our increasing workload.”

But even with a streamlined staff, the Crime Laboratory’s financial projections are dire. It costs approximately \$2.5 million a year to operate the lab. “At this point, if we don’t come up with additional funding to cover our deficit, we’re in big trouble,” cautioned Zavarella. “We cannot continue to operate without employee layoffs and a substantial decrease in services.”

She explained that the financial crunch is the result of numerous factors, including the growing caseload and the soaring price of testing supplies.

“The chemicals and other products that we need for DNA testing are the Crime Laboratory’s biggest expense,” said Zavarella. “It’s a huge expenditure and it’s getting larger. Ten years ago, it cost about \$300 to pro-

cess a DNA case. Now it’s closer to \$2,500 per case. And not only has the price of testing supplies increased, but the cost of acquiring and maintaining equipment has risen significantly.”

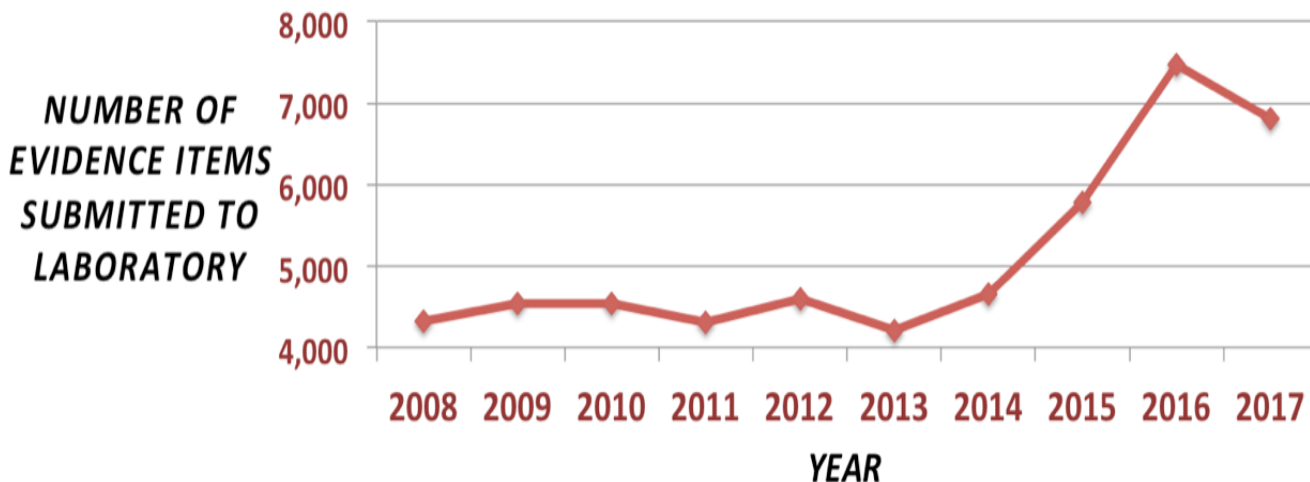
Crime Laboratory Director Linda Erdei added that the cost of supplies is expected to continue trending upwards. “The chemical reagents we use for DNA are more technologically advanced and more costly to manufacture,” she said. “The instruments are also becoming more expensive. We use our equipment as long as we can, but after so many years, it’s difficult to get replacement parts. Then we have to buy new instruments. Some can cost over \$100,000.”

In addition to the expenses of supplies and equipment, the Crime Laboratory must annually send its scientists for training in order to comply with requirements set by the international accrediting body.

The Crime Laboratory’s current staff includes three full-time DNA analysts, which will be cut down to two in May when one of the analysts retires. “That retirement will take us to the bare minimum of DNA staffing,” said Zavarella, explaining that laboratories must employ at least two full-time DNA analysts to comply with quality assurance standards.

Along with its escalating DNA workload, the Crime Laboratory is also straining to handle a skyrocketing number of drug cases, (CONTINUED ON PAGE 4)

INCREASING CASELOAD



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primarily due to the opioid epidemic that is affecting Lake County. Doug Rohde, the Crime Laboratory’s supervisor of chemistry and toxicology, estimated that drug submissions are on pace to nearly double since 2008.

Despite its precarious financial state, the Crime Laboratory is working hard to help law enforcement solve cases and to keep Lake County safe. “We are a small but mighty lab that provides services that are not available from other crime labs,” said Zavarella.

For example, the Crime Laboratory has the capability to analyze touch DNA, which requires only a few skin cells to obtain a DNA profile.

“There are other crime labs that process touch DNA, but they will only do it for violent crimes,” Zavarella said. “But we even process touch DNA from property crimes such as car thefts and home break-ins. That’s important because we are helping Lake County law enforcement get lower-level criminals off the streets before they escalate to more serious crimes.”

The Crime Laboratory’s DNA collection has paid off: Since 2008, its DNA “hits” on the national CODIS (Combined DNA Index System) database have jumped 687 percent (that’s a “wow” increase, noted Zavarella). A hit occurs when an unknown DNA profile is uploaded to CODIS and it matches an offender’s stored DNA profile.

Another key advantage of the Crime Laboratory is its ability to analyze evidence through multiple forensic disciplines. For example, when a weapon is submitted, the scientists can test it for fingerprints as well as DNA.

Some labs do not provide multi-discipline processing—the submitting law enforcement agency has to pick one discipline or the other, which only provides a limited analysis of the evidence.

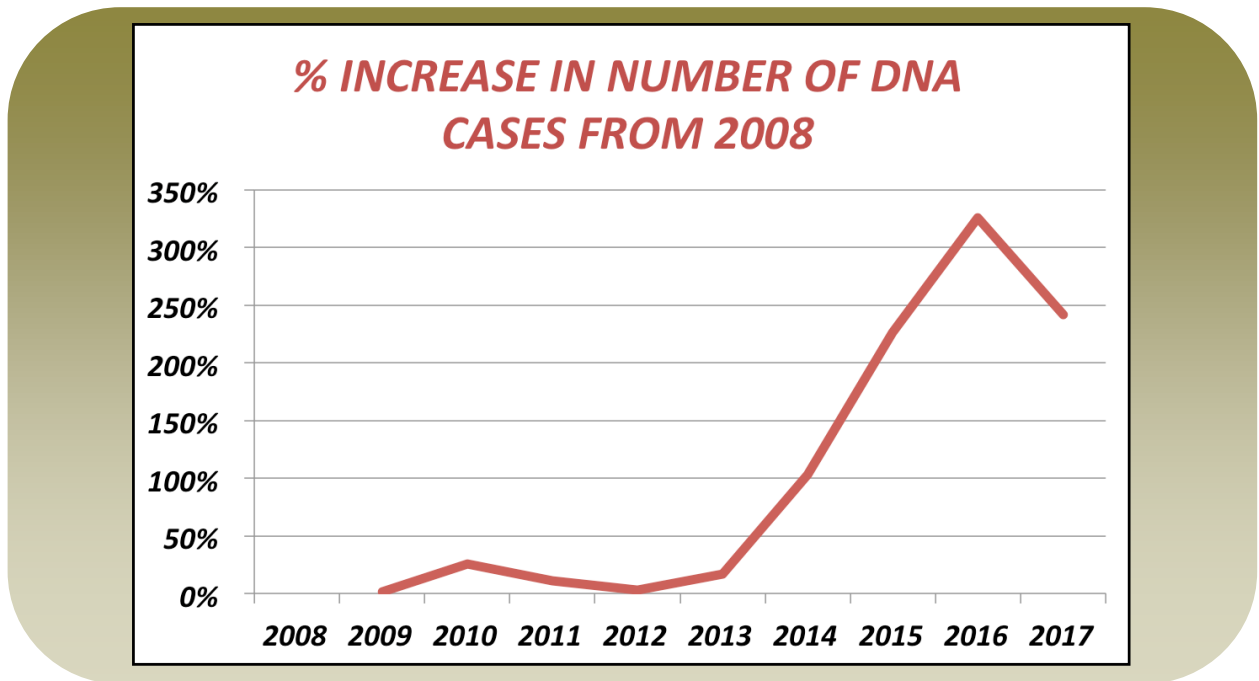
Zavarella also noted that the Crime Laboratory’s small size enables scientists to easily communicate with each other. “The scientists can walk down the hall to consult with each other,” she said. “Whereas, in bigger labs, the scientists are often housed in separate buildings. Because we have one location and we are local, the various Lake County law enforcement agencies have easy access to us. We can expedite evidence between the police and our lab and thereby speed up our processing time and lab results.”

That prompt analysis of evidence is not only crucial to police, but also to prosecutors and other participants in the criminal justice system, said Coulson.

“One of the most important reasons to have a local crime lab is to get evidence analyzed quickly,” he noted.

“The longer it takes to solve a crime, the less chance you have to solve it,” Coulson said.

“By having a lab that can act immediately, we solve crimes that would go unsolved without a lab. In serious cases such as homicides, the Crime Laboratory has provided DNA results in 24 hours instead of the weeks and months that it would take if we had to rely on other labs. We’ve also had fingerprint analyses done in minutes instead of weeks. Having our own lab means that we will analyze all of the evidence—we don’t have to pick and choose what (CONTINUED ON PAGE 6)



Muzzled by DNA

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magazine loaded with 9mm ammunition. Two days after the abduction, Davis, who was not the father of the children, turned himself into police and was arrested.

As Davis sat in the Lake County Jail awaiting his court hearing, Willoughby Hills police continued the investigation and learned that Davis had threatened Susan with his gun during an argument several days before the abduction. Susan stated that during that incident, Davis had pushed the muzzle of his gun into her mouth while telling her that he was going to kill her children. She told police that she didn't immediately report the incident because she was afraid that Davis would follow through on his threat.

Davis had initially faced two counts of felony abduction, but with Susan's new information, the Lake County Prosecutor's Office considered bringing more serious charges.

"When we received information that Davis had pinned Susan to her bed and shoved the gun in her mouth, we immediately sent the gun to the Lake County Crime Laboratory for DNA testing," said Michael A. Barth, the Lake County assistant prosecutor who handled the case.

The Crime Laboratory also received a swab from inside Susan's cheek in order to compare her DNA to

At the Crime Laboratory, DNA Technical Manager LeAnne Suchanek, who typically handles 15 to 30 cases at a time, bumped the Davis case to the top of her work list and quickly began processing his gun for physical evidence.

"Because we were told that Davis had actually put the gun in her mouth, we planned to swab the muzzle for DNA," said Suchanek. But even before collecting a DNA sample, Ray Jorz, the Crime Laboratory's senior fingerprint/firearms examiner test-fired the handgun to confirm it was operable. Jorz then checked the gun for latent fingerprints that would indicate a link to Davis.

"Fingerprinting has to be done before DNA because when we swab for DNA, it can smear the prints and render them unusable," noted Suchanek, who also serves as the Crime Laboratory's assistant director.

"In normal circumstances, when we test for the presence of DNA on a firearm, we are trying to determine whether or not a person was in possession of that firearm," Suchanek said. "We therefore collect swabs from the grip, trigger, and/or the slide of the firearm. The muzzle (the front end of the barrel) is not typically handled by a person who has possession of it. But because we received information that there may have been saliva from the victim present on the muzzle, the circumstances of this case dictated that we swab that part of the gun."

Suchanek did find DNA on the muzzle, presumably from saliva, but she dispelled the popular misconception that saliva itself contains DNA. "Saliva is just liquid," she said. "However, since it picks up tiny skin cells from the lining of the mouth, we examine the saliva to look for those skin cells. We then amplify those cells to get a DNA profile."

The DNA found on the gun muzzle was indeed a match to the DNA from Susan's cheek swab. "We also found a mixture of DNA on the gun's grip and trigger that we could attribute to both Davis and Susan," Suchanek said.

Faced with the Crime Laboratory's test results, Davis pleaded guilty to abduction and kidnapping with firearms specifications. On August 28, 2017, he was sentenced to nine years in prison by Lake County Court of Common Pleas Judge Vincent A. Culotta.

"The Crime Laboratory's work in comparing the victim's DNA with the DNA found on the gun helped us to resolve this case," said Barth. "Without the timely turnaround and lab results, (CONTINUED ON PAGE 6)



Defendant's firearm containing Susan's DNA.

any DNA that might have been left on the gun.

"With Davis in jail and unable to post bond, we put a rush order on the lab test," said Barth. He explained that whenever a suspect is incarcerated, prosecutors must file criminal charges or otherwise resolve a case within a specified time frame so that the person's speedy trial rights aren't violated.

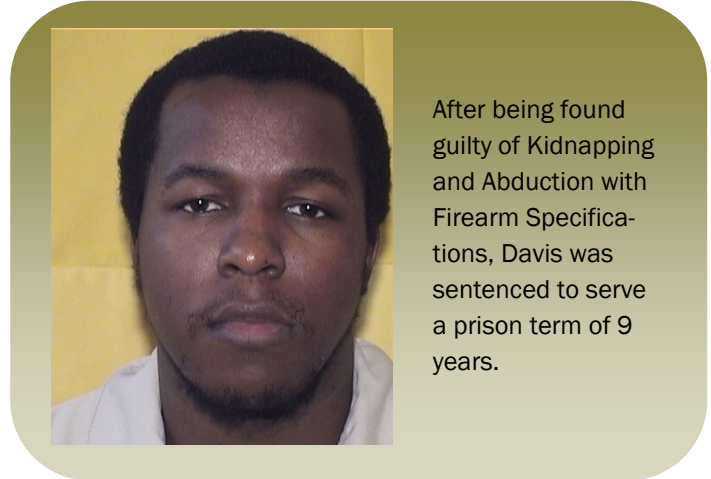
Muzzled DNA

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this case would have been much more difficult to prosecute. As prosecutors, it's great that we have such a good rapport with the lab's scientists. It makes things run more efficiently when we can pick up the phone and speak with them. In this case, I was able to speak with LeAnne Suchanek and ask her to expedite our request. She and the other scientists then did everything in their power to get the testing completed promptly."

Barth noted that the work of the Crime Laboratory also benefits the victims of crime. "In Susan's case, the forensic results corroborated her story, which helped convince the defendant to plead guilty," he said. "If the case had gone to trial, I think it would have been traumatic for Susan to testify in open court and have to relive the experiences of having a gun put in her mouth and her children kidnapped."

Without the Crime Laboratory's expertise and resources, more cases might go to trial, and those victims



After being found guilty of Kidnapping and Abduction with Firearm Specifications, Davis was sentenced to serve a prison term of 9 years.

would have to face their perpetrators, said Barth, adding, "and there's always a possibility that a perpetrator might not be found guilty in court. For Susan and many other victims, the Crime Laboratory helps bring closure." 📌

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evidence will be processed."

Timely processing of evidence can be a source of great comfort to crime victims, noted Karen Kowall, chief assistant prosecutor in the criminal division of the Lake County Prosecutor's Office.

"Being able to act with urgency for the victims of a tragic event is critical," she said. "We want to do everything within our power to locate a suspect that has the DNA of our victim on their person, or recover property for a victim. So it's very important to have a local crime lab that can respond quickly and marshal its efforts."

Kowall also credited the Crime Laboratory's collaboration in developing investigative leads. She noted that the scientists can be counted on to return to a crime scene, if necessary, to search for new physical evidence.

"Our scientists are always willing to drop everything and go out to a crime scene. Without a local crime lab, that wouldn't happen. It's a huge advantage to have scientists who are so dedicated to their jobs. They are willing to utilize all of their scientific capabilities to provide the most complete and accurate forensic results. This helps law enforcement to solve crimes and the justice system to bring closure to victims," said Kowall.

She added that the Crime Laboratory's accessibility extends equally to defense attorneys. That sort of forensic science transparency, said Kowall, breeds confidence

in the criminal justice system and can also speed the progress of court proceedings.

"The forensic science stuff is tough; it takes a lot of time to understand," Kowall said. "If prosecutors and the defense team have an equal opportunity to understand what the test results mean, then we're less likely to argue about trivial matters. The conversation can then lead to the difference between a change of plea and a court trial. The advantage of a plea agreement is that it brings finality, both for the defendant and the victim. The case is resolved in a shorter period of time, and we don't have lingering questions."

When you have the forensic evidence, you get the pleas, Coulson said. "Nothing makes our job easier than giving the Crime Laboratory's forensic results to defense counsel and having them realize that they don't have a defense. Criminals will not necessarily be truthful with their own defense counsel. However, when confronted with lab results, it's difficult for the perpetrators to claim that they weren't at a crime scene."

In Coulson's view, the Lake County Crime Laboratory serves an indispensable role in taking criminals off the street and helping prosecutors resolve cases through plea agreements. 📌

Community Crime Lab

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prosecutor, I used to say that half of all crime was related to drugs,” Coulson said. “We saw that people were committing robberies to buy drugs, or dealers were fighting and shooting each other for control of turf. That has changed: It is no longer 50 percent—it is now more like 90 percent of our crime involves drugs. The gun-related violence we’re seeing is a byproduct of the drugs. Fortunately, the Crime Laboratory’s firearms division has done a great job of processing the guns that we confiscate. Without these firearms experts, we wouldn’t be able to examine all of the firearms and link fired bullets to a particular gun.”

Throughout his career, Coulson has been a vigorous advocate of the Crime Laboratory, often calling it the “best crime-fighting tool in Lake County.” His view is shared by elected officials and the heads of police and fire departments throughout the county. Many of these law enforcement and fire professionals say the Crime Laboratory’s timely evidence processing and convenient access provide immeasurable help to their investigations.

Here are a few of their comments:



David Anderson, Former Mayor, Willoughby

In my 26 years as a mayor, I was able to witness the Crime Laboratory’s great work firsthand. One of the most important things in solving any crime is getting lab results quickly. In that respect, the Crime Laboratory is a gem for Lake County. For example, we had a violent murder committed during a home invasion. Our police officers were able to lift a partial fingerprint from an outdoor window ledge. The Crime Laboratory promptly analyzed the print, and we picked up the suspect within hours. That quick turnaround is crucial because the suspect might have been gone from the area the following day. Having a local crime lab has made our community safer.



Matt Byers, Chief, Madison Township Police Dept.

Like most law enforcement agencies in Lake County, our agency must work with limited funding and limited specialization. The ability to get immediate assistance in the field from the experts of the Crime Laboratory is a huge asset. Their

assistance at crime scenes and their rapid turnaround time with lab tests give Lake County law enforcement a marked advantage in keeping its residents safe.



Daniel Dunlap, Sheriff, Lake County

The sheriff’s office uses the Crime Laboratory often. One of the great things about having a local crime lab is that we don’t have to travel a long distance with evidence to another lab and take time away from our other responsibilities.

The Crime Laboratory provides quick test results, which help us to take violent criminals off the streets quicker. It’s important to note that Lake County has never had a backlog of rape test kits. Because we have a local crime lab, we’ve been able to keep up to date on processing evidence and uploading it to DNA databases.



Frank Huffman, Chief, Painesville Township Fire Dept.

I’m a big fan of the Lake County Crime Laboratory, particularly because of the quick turnaround we get on lab tests. With other labs, it can take weeks to get results. At fire scenes, if our K-9 dog detects the presence of an accelerant

such as gasoline or diesel, we can take the sample to the Crime Laboratory, and Dave Green will analyze it and tell us in a couple of days what the chemical composition is. Sometimes Dave will even come out to a suspected arson scene and make sure that we are handling evidence correctly.



Randy Ice, Chief, Wickliffe Police Dept.

The Crime Laboratory is an essential component of the criminal justice system for every law enforcement agency in Lake County. We get much quicker response by having a lab right here in the county. For example, we had a bank robbery in August 2017. Getting DNA results back in a timely fashion was an important element of solving that case. Sometimes the information we get back from the Crime Laboratory is the linchpin we need to have probable cause to make an arrest. (CONTINUED ON PAGE 8)



LAKE COUNTY CRIME LABORATORY

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An ASCLD/LAB-International Accredited Testing Laboratory since 2009
An ASCLD/LAB-Legacy Accredited Testing Laboratory 2000-2009

Community Crime Lab

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**Kevin Knight, Chief,
Mentor Police Dept.**

In recent years, the Crime Laboratory has helped keep Lake County safer by quickly identifying new dangerous opioids when they hit the streets. They also help keep our police officers safe by telling us how to handle these new drugs.

The Crime Laboratory has also been great with touch DNA. Some labs will only test for touch DNA in cases that involve violent crimes, but the Crime Laboratory

will test for touch DNA on property crimes such as burglary and thefts. That can help us tie cases together, even in situations where we didn't realize the cases were connected.



**Larry Reik, Chief,
Eastlake Police Dept.**

We get fingerprints and DNA results back quickly from the Crime Laboratory, which helps us get plea agreements. That means that victims don't have to relive traumatic experiences by testifying in court. The Crime Laboratory's DNA analysis has been amazing. We had a case in which a bottle was found in a car. The scientists matched DNA from the bottle to a suspect, which enabled us to determine that the suspect had been in that car. The Crime Laboratory is able to upload DNA to the national CODIS database, allowing us to keep track of people if they choose to continue their criminal ways. ➔

The CRIMESCENE

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