The Houston Forensic Science Center’s annual symposium will be held Friday, September 21 at Rice University’s Grand Hall and will focus on the opioid epidemic plaguing the United States.

Titled Hooked on Drugs: Opioids’ Impact on the Justice System, the morning event will feature a diverse panel of federal government officials, advocates and forensic experts who will discuss various factors contributing to the nationwide “opioid” epidemic and the short- and long-term ramifications for the legal system.

Each year, HFSC holds a symposium during National Forensic Science Week to highlight topics impacting the national and international forensic community.

Dr. Peter Stout, HFSC’s CEO and president, said with dangerous opioids, such as fentanyl and carfentanil—an elephant tranquilizer—being sold on the streets of Houston and in other major U.S. towns and cities, it is important to raise awareness about the impacts.

“Dangerous opioids and other synthetic drugs are harming people across the country and putting added stress on the health and justice systems,” said Dr. Stout. “I believe we have an obligation to educate people about the dangers of these drugs.”

This event is free and open to the public. Register today!

Following is the agenda and schedule:

8:30 a.m. to 9 a.m.: Keynote address from Texas State Rep. Garnet Coleman on how the Legislature is tackling the opioid epidemic

9 a.m. to 10:30 a.m.: Each panelist will give 15-minute presentations moderated by Dr. Stout. The order and corresponding topics for each speaker is as follows:

Judge Brock Thomas: Houston’s attempt to use reintegration and veteran treatment courts to address drug-addicted defendants

Dr. Paul Speaker, associate professor of finance at West Virginia University: the economic impact of the opioid crisis on forensic laboratories

Leonard Kincaid, executive director of the Houston Recovery Center: how the City’s sobering center is addressing new and different drug symptoms and addictions

Patrick Tynan, a forensic analyst with HFSC’s seized drugs section: new drugs HFSC sees and measures it is taking to protect analysts from potentially toxic evidence

Katharine Neill Harris, Rice University’s Baker Institute fellow in drug policy: discusses national and regional drug trends

Amy Wilson, editor of the Cincinnati Enquirer’s Pulitzer Prize-winning series on opioid addiction: an overview of the research done for the story and what they learned

10:30 a.m.: Break

10:45 a.m. to noon: Moderated questions to panel, as well as questions solicited from audience.

We hope to see you there!
A Few Words From Our
PRESIDENT

Opioid addiction has been devastating towns and cities in the Northeast and Midwest since 2013, but Houston had largely been spared. This is small comfort for Houstonians who have lost friends and family to opioid addiction.

As has been the trend with other epidemics, Houston is often the conduit traffickers use to get drugs to other parts of the United States, but the usage and overdoses lag behind by about two years.

So now, as the Houston Forensic Science Center see a disturbing _ and rather rapid _ uptick in the number of drug cases that test positive for potent and lethal opioids, we have to wonder: Will we now start feeling and reeling from the impacts of the opioid crisis?

And those impacts are significant and expensive.

According to the Centers for Disease Control and Prevention (CDC), more than 42,000 died from an opioid overdose in 2016 and the epidemic that year cost the U.S. more than $500 billion.

In those numbers are the costs to the crime labs. In parts of the United States, crime labs are seeing backlogs in their drug sections grow. They do not have the staffing or financial resources to keep up with the requests. And the avalanche of opioid cases has drawn resources away from other casework, threatening the ability to provide results for other crimes.

Crime labs are being forced to prioritize between crimes. Laboratories are struggling to take extra precautions and even understand what adequate protection looks like for staff who risk deadly exposure to the drugs they are analyzing. Police and other first responders are also needing added protection, and it all has a price tag.

The scale of the opioid epidemic in this country is staggering. Each year, the US has a similar loss of life to opioid overdoses as it experienced in military casualties in the Vietnam War, which killed about 58,000 people.

Since 1999, more than 200,000 people in the United States have died due to opioid overdoses, and the number has been rising in the past five years as the epidemic peaks.

Almost all of us now know someone who has overdosed. If they survived, they face a lifelong struggle with addiction.

We need every tool available to investigators so they can break the supply chain. We need pharmaceutical companies and healthcare to step up, take responsibility and look for solutions. We have to invest in rehabilitation. I choose to invest.

For more information, please visit our website at www.houstonforensicscience.org
A murder victim is discovered in an empty alley. HFSC Crime Scene Investigators have conducted a thorough search, but the evidence has yielded few substantial results. The only items that seem helpful are the victim’s wallet, house keys and a cellphone, an Apple iPhone 6s.

In 2018, a cell phone can be a trove of useful information for Houston Police Department investigators, prosecutors and defense attorneys. That is, if the data stored in the phone can be accessed after a search warrant has been obtained.

Amid a national and high-profile public debate about when and how to provide police and other investigators access to private phone-user information, phone manufacturers, especially Apple, have developed encryption codes that make it difficult, and sometimes impossible, for digital and multimedia forensic analysts to decipher.

Now, in the latest round of back-and-forth technology between Apple and digital software acquisition programs, HFSC has acquired a product that can successfully unlock certain Apple devices, providing investigators with data analysis of a phone’s content.

Designed specifically to unlock Apple devices, the digital software utilizes proprietary, brute-force technology to infiltrate the security code and steadily work through the different passcode variations, a process that can take hours.

And although the technology is groundbreaking, it can still take days and even weeks or months to penetrate an iPhone.

Allison Sudik, an HFSC forensic analyst in the digital and multimedia division, said an individual’s cellphone is a fountain of information.

The retrieved data can be a trove of useful information for investigators, providing evidence in an investigation, corroborating existing evidence and supporting the case. The software also enables HFSC digital analysts to corroborate existing evidence in an investigation.

The Houston Forensic Science Center has spent several months on projects meant to improve processes in supply chain management and in how its DNA section interacts with the national DNA database, CODIS. Both projects focus on efficiency and quality.

The supply chain or how HFSC handles procurement impacts all staff. The project team had been tasked with improving the process to prevent casework delays. “HFSC needs supplies to function,” said Paula Evans, the project lead. “With the improvements we’ve made we’ve taken unnecessary strain off our laboratory disciplines so they can focus more on their primary role.”

Meanwhile, a separate team has been looking at CODIS, a database that provides investigators with crucial investigative information.

“We selected the CODIS process as our first project due to its high impact on forensic biology operations as well as the entire company and its stakeholders,” said Aimee Grimaldi, the project lead.

The team focused on stakeholder needs and found the group did not have sufficient staff. Additional staff have been hired, internal and external training has been conducted and will be ongoing and the manner in which information from CODIS is shared has been improved.

The new software allows HFSC to successfully unlock about 80 percent of Apple devices. HFSC receives about 1,000 devices annually.

Previously, HPD officers were aware of the limitations of penetrating an Apple device—often bypassed requests to retrieve digital data from newer Apple devices. Now these requests are becoming more frequent.

Ryan Johnson, manager of HFSC’s digital and multimedia division, said an individual’s cellphone is a fountain of information.

“The software will not get into every iPhone... it could take 15 years”

“Any time we are able to get into a device it is going to help with actionable intelligence as far as moving the case forward,” Johnson said. “We are able to find out crucial information concerning a lot of different areas, such as websites, text messages, emails and geo-positioning.”

The retrieved data also enables HFSC digital analysts to corroborate existing evidence in an investigation, Johnson said.

Apple’s ever-changing encryption code for its devices presents challenges. Newer models boast more sophisticated and efficient coding that has reduced hackers’ ability to exploit openings in the software encryption.

While the software has made more digital information accessible, HFSC analysts still encounter challenges when processing certain Apple devices.

“The software will not get into every iPhone,” Sudik said. “Based on the complexity of the passcode, it could take 15 years before access is granted.”
It was just before Christmas in Houston when a serial robber began plaguing businesses, individuals and financial institutions. In just three weeks, as people shopped in between work, holiday parties and run-of-the-mill meetings, the Houston Police Department linked between the 20 robberies. The suspect was armed and threatening people, and HPD believed it was only a matter of time before someone got hurt. Unless he could be caught.

To do this would require close cooperation and communication between HFSC and HPD. And we delivered, leading HPD Chief Art Acevedo to award an official commendation to all who participated, among them HFSC latent print staff members, Jonathan Petranek, Brenda Merritt and Tim Schmahl.

The hunt for the suspect began in earnest in early December as the incidents piled up and investigators realized they could all be linked.

The investigators spoke to Mr. Schmahl, HFSC’s latent print manager, and asked him to prioritize the evidence from several robberies. He got to work, and sent to the latent print processing lab a ransom note left behind during a December 1 robbery at a Walgreens.

Mr. Petranek, a latent print processor, chemically developed and photographed latent prints on the ransom note. Once Mr. Petranek developed useable prints, latent print examiner, Ms. Merritt, analyzed the photographs to determine if any of the prints were suitable for further examination. Those that passed muster were uploaded into the Automated Fingerprint Identification System (AFIS), a civil and criminal database of fingerprints.

Pay dirt.

One of the latent prints from the note “hit” against a print in the AFIS database, meaning Ms. Merritt had a preliminary association she could now review more closely for confirmation. Once she had completed her comparison, latent print examiner David Hyde verified her results.

Ms. Merritt, however, noticed an additional item of importance while looking for fingerprints in AFIS. It appeared the suspect had been previously arrested, but under a different name. She compared the fingerprints and confirmed the two individuals were one and the same.

Mr. Schmahl promptly provided the suspect’s information to the case detectives. Investigators now had a name and a face, a person known to them who had previously been arrested for theft.

By January 3, the suspect was in custody, arrested by police as he attempted to withdraw cash from an ATM using someone else’s card. Once again, HFSC provided stakeholders with the right answer at the right time, ensuring forensic information is used to improve public safety for all Houstonians.

Rodney Lee Allen, who also used the alias Walter Allen, has been charged with six first-degree and second-degree felony charges.
The headline went viral: “Harris County sergeant treated after touching fentanyl-laced flyer.” Days later a second headline: HPD officer rushed to the hospital after exposure to an unknown drug. The panic that accompanied these events in Houston stems in part from months of media, legislative and public attention to the national opioid crisis and the potential toxic effects of fentanyl and other opioids.

Ultimately, lab tests revealed neither involved potent opioids. So, what is fentanyl and why is it a concern?

Fentanyl is a potent opioid used in hospitals and by doctors as a pain reliever and anesthetic. It is typically prescribed in a patch that adheres to the skin. Opioid abuse had long been isolated to healthcare professionals and those suffering from chronic pain. In recent years, though, fentanyl and other more deadly opioids have become readily available on the streets. Addiction is running rampant and the justice system is reeling from the impacts. And while Houston has seen an increase in opioid use in recent years, it has lagged behind other parts of the country.

That is, until recently. In 2015, HFSC had only one fentanyl case. By 2017 there were 24. By mid-July 2018 there were 17, signifying a continuous uptick. So far, HFSC has seen seven different types of opioids. Some of the deadliest include carfentanil, an opioid whose only approved use is as a tranquilizer for large animals, such as elephants. It is 10,000 times more potent than morphine. A lethal dose of carfentanil is the size of a couple of grains of salt.

Now that fentanyl is increasingly more accessible and cheap, it’s being mixed with other drugs on the streets and being sold in a powder form. Imagine mixing a cake,” HFSC’s seized drugs manager James Miller explained. “You toss in all the ingredients, such as flour, cornstarch and salt. Is there a way to tell how much of each ingredient is distributed throughout the mix once you bake the cake? No.”

Imagine that mix cake is oxycodone or Xanax in their powder form, Miller continued. “Toss in some powdered fentanyl. With just one kilogram of fentanyl, a total of 500,000 pills could be pressed and sold. There is no way to tell how much of that one kilogram of fentanyl is distributed in each pill, meaning even one pill could contain a lethal dose,” Miller said, noting just a few grains of fentanyl is potentially lethal. People addicted to prescription pills, such as Xanax or hydrocodone, buy them on the street, unaware they could be buying a deadly dose of a potent opioid.

This trend cannot be ignored, forcing HFSC and law enforcement to take measures designed to protect staff. Law enforcement officers and EMTs now carry Narcan, a drug that can reverse or stop an opioid overdose. HFSC’s seized drugs section has increased personal protective equipment used by lab analysts and limits access to its lab. The section now also works in teams of three when dealing with potential opioids: one analyst works the case, another stands by to administer Narcan upon any seen symptoms of exposure, such as dizziness, lethargy and trouble breathing, and a third is there to dial 911 if necessary.

If you or someone you know is suffering from a drug addiction, visit https://www.addicted.org for a list of Drug & Alcohol Centers in the U.S. or by dialing 1-800-304-2219 for confidential, 24/7 assistance.

The Houston Forensic Science Center has seen an uptick in the number of opioid cases arriving in the lab for analysis. The Houston Forensic Science Center has seen an uptick in the number of cases it is receiving that are testing positive for synthetic opioids, such as fentanyl and carfentanil. Houston typically lags behind the rest of the country when it comes to drug epidemics, and has followed a similar trend with this one. Opioids use began increasing in the Northeast and Midwest in 2013. By 2015, there was a full-blown epidemic in these areas with thousands of people abusing the drugs and overdosing. By 2016, the Centers for Disease Control and Prevention reported 116 people nationwide were dying daily from an opioid overdose. More than 42,000 died from an opioid overdose in 2016 and the number has increased since.

The opioid crisis is costing the country more than $500 billion a year.
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