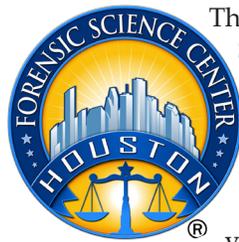


WHAT'S NEWS @ HFSC

HOUSTON FORENSIC SCIENCE CENTER • AUGUST 2018

HFSC's DNA mixture reinterpretation project: what is this and what does it mean?



The Houston Forensic Science Center, along with other crime labs in Texas that do DNA analysis, has spent the past 18 months reviewing years worth of data to determine if any DNA evidence needs to be reinterpreted due to changes made by the FBI and advances in technology and data analysis.

The time-consuming, resource intensive project is an example of how ever-evolving knowledge and slight changes to protocol and procedure can impact cases that are decades old.

HFSC, based on the criteria set by the Texas Forensic Science Commission (TFSC) with the help of defense attorneys, is reviewing hundreds of cases dating back as far as 20 years.

"This project pulls resources from current-day casework and is difficult for us to complete in a timely manner," said Dr. Peter Stout, HFSC's CEO and president. "However, because we know the changing technologies and knowledge can significantly impact people's lives we are determined to complete this project in collaboration with other stakeholders and partners."

The mixture reinterpretation project, which is focused on cases in which the evidence analyzed had on it the DNA of more than one person, surfaced in mid-2015 when the FBI informed crime labs it had found a slight error in the population statistics it distributes to crime labs. Those statistics are used nationally by analysts who need to assign a statistical value to a DNA profile found on evidence. For

example, it is not enough to say that Jane Doe "cannot be excluded" from an evidence item. The analyst must say by what probability, for example one in 100 or one in a quintillion. To do this, most labs use one of two federally created population databases, in part to ensure they are using a similar foundation to determine the statistical value of DNA evidence presented in court.

The FBI stated the error it found should have no statistical significance on previously analyzed cases. But in Texas, prosecutors requested recalculations for cases that had not yet gone to trial to ensure no data would be overstated or misrepresented in court.

This decision led to a discovery of much greater importance. As crime laboratories began reviewing those old cases _ thinking the only thing of significance was those population statistics _ they began to notice that as they used current-day interpretation to review old data the changes could in fact be more significant. In some cases, with current knowledge, labs would not have even interpreted certain complex mixtures, requiring them to issue new findings voiding old conclusions. In a few cases in Texas, the statistical value changed from one in several million to one in just a few hundred, making what appeared to be significant DNA evidence far less significant.

As a result of these findings, the TFSC asked all crime labs in the state to review all cases in which statistics were used to interpret DNA mixture data.

And now, time that could be spent on incoming casework, is divided with that needed to do justice to old cases that once appeared closed.

HFSC'S OPIOID SYMPOSIUM



REGISTER NOW!



4 Forensic licensing kicks in on Jan. 1, 2019



6 CSIs process vehicles better, deluge latent prints



8 HFSC's seized drug section gives the right answer at the right time



A Few Words From Our PRESIDENT

HOUSTON FORENSIC SCIENCE CENTER

Peter Stout, PH.D.
CEO/President

In the world of forensics no case really ever dies or goes away _ at least not the high-profile ones. Why? The nature of science itself makes it that way. Unlike some other fields, science is always changing. Every day, we learn something new, often canceling out what we thought in the past. Or technologies or other innovations allow us to do more than we could previously _ delve deeper and further into a topic or subject, allowing us to learn more than we could just a few years ago.

In forensics, this sometimes means that a result can change or an answer we had can prove to be wrong.

Translation: sometimes, as we learn something new, or find out that what we thought to be true is not in fact true _ such as, the world is not flat _ it forces us to reopen and audit dozens, hundreds and, at times, even thousands of cases.

We reapply new knowledge to old cases, ensuring people have not been wrongfully convicted or that other injustices have not occurred.

And when this happens, our scarce and already overstretched resources, are pulled from daily, current casework.

Turnaround times increase. Backlogs grow. Staff get stressed under the strain of trying to get out new cases while also revisiting old ones.

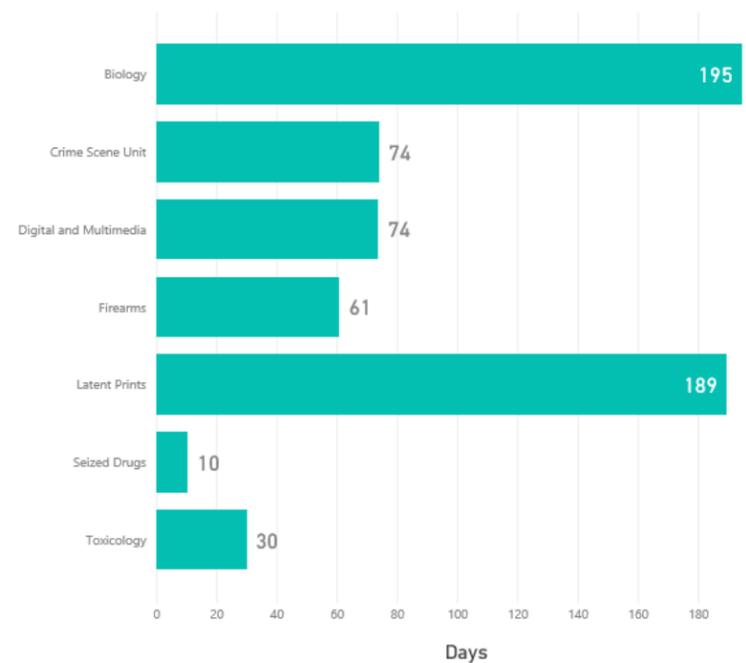
But we insist on getting it right _ even in hindsight. It's our obligation.

Peter Stout, PH.D.
CEO/President

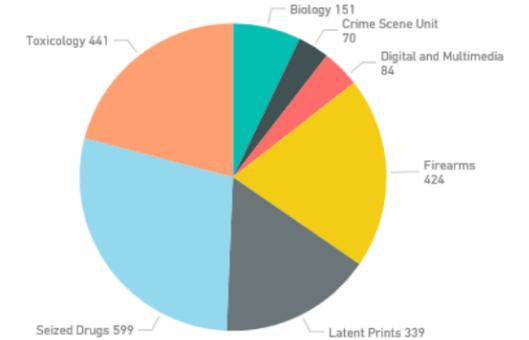
Dr. Peter Stout, HFSC's CEO and president, initially joined the agency in 2015 as its chief operating officer and vice president. He has more than 15 years of experience in forensic science and forensic toxicology. Prior to joining HFSC, Dr. Stout worked as a senior research forensic scientist and director of operations in the Center for Forensic Sciences at RTI International. Dr. Stout also has served as president of the Society of Forensic Toxicologists (SOFT). He represented SOFT in the Consortium of Forensic Science Organizations and has participated in national policy debates on the future of forensic sciences in the United States. Dr. Stout has a doctorate in toxicology from the University of Colorado Health Sciences Center in Denver. Dr. Stout also served as an officer in the U.S. Navy Medical Service Corps.

HFSC At A Glance

Average Turnaround Time for - July 2018



Requests Completed by Section



Turnaround Time - Days	71
Completed Requests	2108

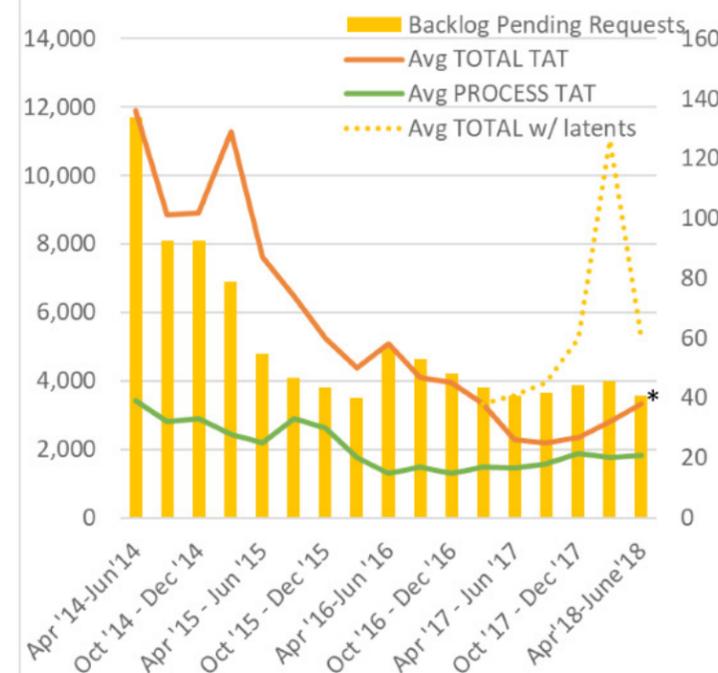
Month Completed

- 01-January
- 02-February
- 03-March
- 04-April
- 05-May
- 06-June
- 07-July
- 08-August

Year Completed

- 2014
- 2015
- 2016
- 2017
- 2018

This data is current as of 8/9/2018.



As the Houston Forensic Science Center works to eliminate backlogs in the latent print and forensic biology/ DNA sections, its turnaround time has increased _ a sign that the oldest cases are being eliminated.

There is a direct link between a shrinking backlog and an increasing turnaround time because the clock starts ticking when a request for analysis is made and stops when a report is issued.

HFSC has also seen an increase in requests. For example, requests for imaging into the firearms database have increased by about 50 percent in recent years. While some of that growth can be attributed to an increase in gun violence, much of it is simply due to growing efficiency in the lab: when investigators see they can get an answer, they ask for it more often.

For more information visit the HFSC website, www.houstonforensicscience.org

HFSC: Texas' Forensic Licensing HFSC ANALYSTS TO BE LICENSED

BY JORDAN BENTON

Texas' forensic licensing law officially takes affect on Jan. 1, 2019, meaning most of the Houston Forensic Science Center's analysts and some technicians will be studying in the coming months to pass a rigorous exam.

The Texas Legislature passed Senate Bill 1287 in 2015, requiring forensic analysts in specific accredited disciplines to be licensed. The Texas Forensic Science Commission, as the state's accrediting body, was made responsible for overseeing the licensing program, including administering the exam and ensuring the qualified people become licensed.

The legislation determined licensing will be required for "any person who on behalf of a crime laboratory accredited under this article technically reviews or performs a forensic analysis or draws conclusions



from or interprets a forensic analysis for a court or crime laboratory."

For HFSC, this means all forensic biology, seized drug, firearms and toxicology analysts must be licensed, as well as technicians who work with the ATF's ballistic imaging system. The licensing does not apply to medical examiners or other forensic pathologists who are licensed

TEXAS IS ONE OF A FEW STATES THAT WILL REQUIRE FORENSIC ANALYSTS TO BE LICENSED

physicians.

The TFSC with the help of a Licensing Advisory Committee comprised of scientists and attorneys began creating the guidelines, exams and exam materials shortly after the Legislature passed the law. A pilot exam given earlier this year _ and which about 40 HFSC analysts took _ helped the TFSC further refine both the test and the study materials.

The exams are rigorous.

The analyst exam is comprised of 110 questions, 10 of which are pilot questions and not scored, that address evidence handling, the Brady Rule and Michael Morton Act, root cause analysis, statistics and other topics. The test taker must get a minimum of 70 questions correct to pass. The technician exam is shorter and does not include the passage on statistics.

Once the exam is passed, staff will be awarded one of three licenses: forensic analyst, forensic technician and forensic biology screener.

Though the full analyst exam is not a requirement for all, HFSC is encouraging its staff to take the full exam so they can be tested on topics such as testimony and statistics, which HFSC consider vital to the field.

Many HFSC staff will be required to become licensed so the quality division is working closely with managers and staff to ensure each applicant has the correct credentials listed and is signed up for the right exam.

HOUSTON FORENSIC SCIENCE CENTER Launches First-Ever Explorer Program

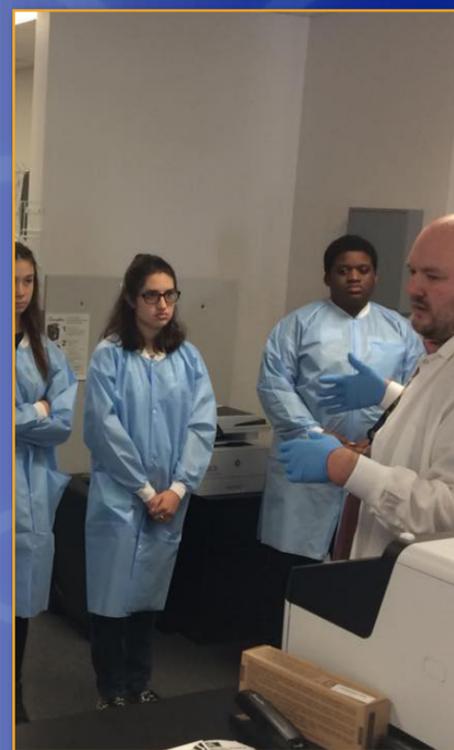
By Schoenstatt Nichols



The Explorers get a look at HFSC's seized drug section



Dr. Peter Stout talks about the firearms section



Latent print processor Adam Whitman talks about the lab

HFSC's first-ever Explorer's Program launched August 9 with an introductory presentation by Dr. Peter Stout, a tour of the facility and an introduction to digital & multimedia forensic analysis.

Originally created by the Boy Scouts of America, the Explorer's Program is meant to educate students about the realities of future career paths. Many law enforcement agencies, including the Houston Police Department, have active programs. But the Boy Scouts wanted to explore the forensic side of the justice system.

The goal is to make the program as realistic as possible. Students participating in the program will be given an accurate representation of forensics and the hard work needed to become an analyst.

"We are hoping to demonstrate how evidence flows from a crime scene, moves through the lab and how information is generated from that evidence," said Laurissa Pilkington, project co-head and latent print examiner with HFSC.

A group of 10 high-school students, primarily juniors and seniors, have been selected to participate in the 2018-2019 program. Each applicant expressed a sincere interest in the field through a 200-word essay, which was the deciding factor for the committee during the final stages of the application process.

Once a month on Saturday the students will meet at the Lt. Berry McDermott Crime Scene House for 2 ½ hours and participate in a hands-on

forensic science experience.

Individuals from each section have volunteered to create and present these activities, Ms. Pilkington said. Each section will have a representative give a 20 to 30-minute presentation about their job before transitioning the students into a higher-end, hands-on activity for the day. In this way, the students will be exposed to each discipline separately.

The program's grand finale will be a full-scale mock crime scene where the students will be asked to combine all the knowledge learned in previous activities and use it to gather and analyze evidence.

"We are not going to sugar coat anything that HFSC employees encounter in everyday casework," said Adam Whitman, project head and lead latent print processor. "If students are introduced to the realities of forensic science now, then they will be better prepared for pursuing it as a career when they reach college."

Both Ms. Pilkington and Mr. Whitman are optimistic about the future of HFSC's Explorer Program and believe it will prove to be a special endeavor worth continuing

"I believe it is important in any field to provide education and resources to those who have an interest in joining that field, and being able to provide this resource is valuable to the students and the community as a whole," Pilkington said. "Maybe one day we will even have an employee at HFSC who got their start in the Explorer's Program."



Dr. Stout SELECTED FOR DOJ FORENSIC GROUP

The U.S. Department of Justice has appointed Dr. Peter Stout, HFSC's CEO and president, to its recently created Forensic Laboratory Needs Technology Working Group (FLN-TWG).

Dr. Stout joins other leading forensic scientists who have been tasked by the Office of Justice Programs' National Institute of Justice to find ways to increase casework efficiency and find innovative solutions that will allow crime labs to keep up with increased demand.

The NJ believes such solutions will help lead to a stronger justice system and increase public safety.

Crime labs nationwide have been struggling for years with increasing demand and limited — if not shrinking — resources.

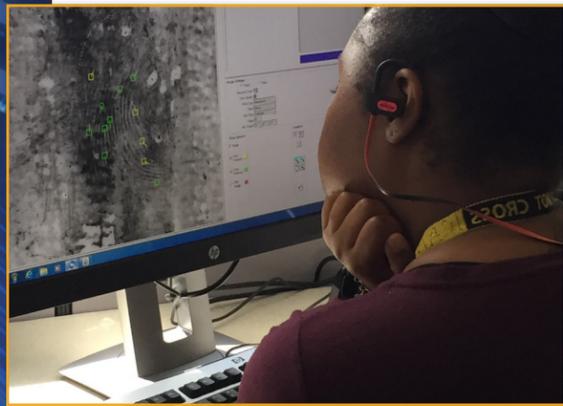
"I am honored to have been asked to work with others in the country to try to find solutions to some of the most pressing issues impacting our justice system," Dr. Stout said.

"Forensic science can be crucial to the proper adjudication of a variety of crimes — but only if labs provide quality, timely results. We will find a way to do that on limited budgets," he added.

Dr. Stout is joined on the FLN-TWG by crime lab directors from across the country, including Idaho, Alaska, Virginia, New York and others.

CSU: LEAVING ITS MARK

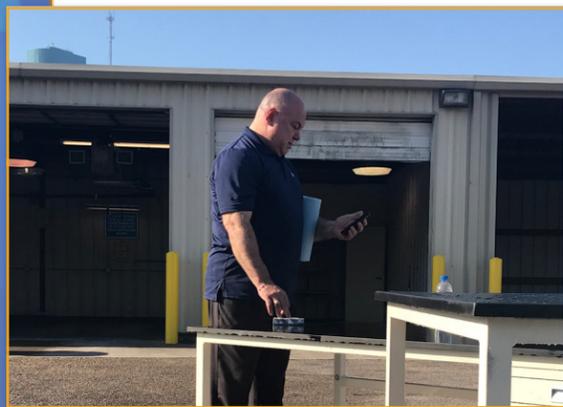
BY KAITLIN MAIN AND SCHOENSTATT NICHOLS



A latent print examiner looks at images on her screen



HFSC's CSIs process vehicles at the Vehicle Examination Bay (VEB)



CSUs process cars for prints and other evidence at the VEB

The latent print powder technique for lifting prints has not changed much since its historical origins nearly a century ago — a rarity in today's forensic world where new technology and advances seem to come daily.

Powder is simple, though. It makes the invisible visible and the unknown known, and remains a staple of crime scene investigation repertoire and a valuable tool for lifting prints from a variety of evidence.

Aware of how useful prints can be to an investigation, HFSC's Crime Scene Unit has increased its efforts in latent print processing both on the scene and in the vehicle examination bay (VEB.) Due to ongoing training and growing on-scene experience, CSIs critically review a crime scene to find the best places to painstakingly and precisely apply powder and spot other areas of investigative relevance

where chemical processes may be more effective.

Investigators must put themselves into the mindset of either the perpetrator of the crime or the victim to assess which areas they potentially touched and how each object may have been maneuvered before carefully handling any items themselves to process as evidence.

And as though this wasn't difficult enough, all the time a CSI has to do everything in a specific way as to not obscure any latent print evidence that may be unseen. CSU began gathering statistics in March 2018 on the number of latent prints lifted and the number of people identified when the prints are developed.

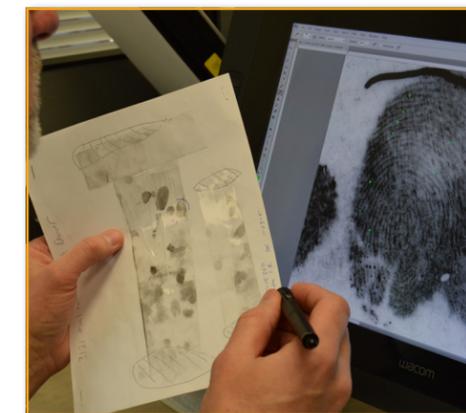
There has been a remarkable 368 percent increase on database hits and a 300 percent increase in the number of people identified.

In just five months, the number of AFIS hits has increased from 25 to 93 and

the number of identifications has risen from 11 to 33 different people.

"These numbers are truly astronomical, and these identifications are undoubtedly providing some much needed, solid information to HPD detectives and investigators trying to solve cases," said Domingo Villarreal, CSU's deputy director.

The improvement results from better processing, awareness and expectations.



"THESE NUMBERS ARE ... PROVIDING MUCH NEEDED INFORMATION TO ... HPD DETECTIVES."

For example, CSIs are notified when a successfully lifted latent print results in an AFIS hit. This tangible result from the increased efforts not only provides a sense of accomplishment but galvanizes the unit to continue to improve their processing techniques and investigative skills.

Each successful identification, as well as the possible leads it provides to stakeholders, bolsters CSU's skills and dedication to tackling the less-than-glamorous, gritty latent lifting process that leaves them looking as if they proudly fought a battle on the inside of a chimney.

With the help of supervisors, directors and cooperation between CSU and the latent print section, HFSC hopes to see a continuous increase in the developed latent prints being identified as the quality of the CSIs' work improves, Mr. Villarreal said.

FAST DRUGS: THE RIGHT ANSWER

HFSC's seized drug section provides quality results at the right time

Right, fast and consistent. This is how the Houston Forensic Science Center's seized drug section has been operating for more than a year.

What does this look like? And what does it mean for Houston's justice system?

HFSC has heard from judges, the district attorney's office, defense lawyers and even grand juries that the fast turnaround time has positive ripple effects throughout the system.

Suspects sitting in jail are able to get out quickly either on bond _ or because there is no drug present _ because of the fast turnaround time on cases moving through HFSC. This is not only good for the suspect, especially those accused of a misdemeanor, but it also eases jail overcrowding, a significant issue in Harris County.

It also allows the courts to close cases more rapidly. A fast result means plea deals can be quickly negotiated when necessary and trials are not held up waiting for lab results. Contrast this to other labs that have turnaround times of six or seven months or even up to a year. It slows the justice system down significantly as trial dates are set back to await lab results or plea deals are put on hold for the same reason. And, of course, some suspects who cannot afford to make bond, remain in jail for months awaiting trial.

Probably, though, one of the most significant changes made possible due to the quick turnaround time on drug testing is in the "impact" court. According to one of the judges who works in that court _ which provides suspects with rehabilitation, community service and other preventative measures rather than a typical jail sentence for a drug conviction _ the entire docket would not be possible without the lab's quick turnaround times.

"When I talk about the right answer at the right time, this is what I think of _ a turnaround time so fast it impacts the defendant, the court, the lab, the investigator

and really the entire justice system," said Dr. Peter Stout, HFSC's CEO and president.

"When we hear this kind of feedback we understand the significant and very real impact the work we do each day has on countless lives," he added.

None of this is easy, however.

James Miller, seized drugs manager, notes in July the section had 13 rush requests where results were reported in less than 24 hours, and completed one request in less than two hours. On average, 599 requests were fully completed and reported in an average of 11 days.

"The trick is working with the stakeholders to balance the rush cases with the normal caseload, because whenever we do a rush case it means that an analyst and reviewers and instruments have to be diverted from routine work," Mr. Miller said.

There are instances when a stakeholder's concerns or desire for a "rush" result are allayed when they learn the average turnaround time is about 10 days and a report will be automatically emailed to them, he added.

Typically, a rush request for seized drugs involves an ongoing investigation when an officer wants to confirm if what has been "bought" is legit to ensure credibility when they return to the dealer to make another buy. Other times, the requesting officer needs results quickly to obtain a search warrant to enter a location where drugs are suspected of being sold. These can include "legitimate" businesses that are selling illegal substances, such as Kush, "bath salts" or male enhancement products, which usually contain generic Viagra.

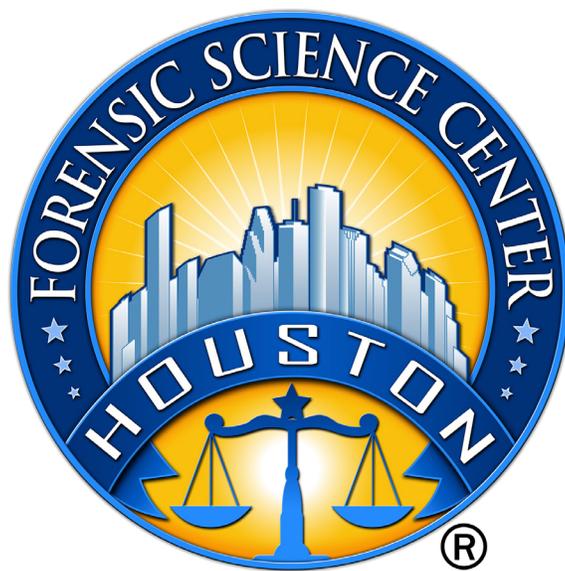
Then there are the situations where there is insufficient probable cause to bring charges so testing of a suspected drug needs to be done quickly, Mr. Miller explained.

"For seized drugs, the right answer at the right time is crucial," he added.



HFSC's seized drug section analyzes substances to determine whether they are in fact illegal drugs, including synthetic cannabinoids (left) and pills (above)

The Houston Forensic Science Center's seized drug section operates on an average turnaround time that is often less than 10 days. During any given month, several rush requests are processed in 24 hours or less. The impacts on the justice system are broad and vast, easing jail overcrowding in Harris County and helping to move cases through the court system more quickly. To do this, James Miller, HFSC's seized drug manager, works closely with stakeholders to understand what and when they need information. By improving processes company-wide to eliminate waste and increase efficiency, HFSC strives to provide stakeholders the right answer at the right time in all disciplines.



CONTACT US

1301 Fannin St, Suite 170 Houston, TX 77002

info@houstonforensicscience.org

(713) 929-6760

LAW ENFORCEMENT AGENCIES, ATTORNEYS AND COURTS

(713) 929-6760 for local calls

(844) 4RENSIC or (844) 473-6742 for toll-free long-distance calls

Fax: (832) 598-7178

info@houstonforensicscience.org

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Houston Forensic Science Center, Attention: HR Recruiter, 1301 Fannin, Suite 170, Houston, TX 77002

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media@houstonforensicscience.org (Media requests)

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(713) 929-6768 (Office)

(713) 703-4898 (Mobile)