

WHAT'S NEWS @ HFSC

HOUSTON FORENSICS SCIENCE CENTER • JUNE 2021

HFSC, HPD, county consider changes to drug evidence handling, storage

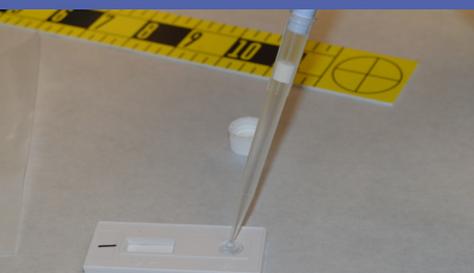
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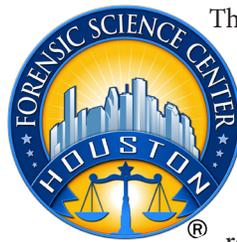
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The Houston Forensic Science Center is in the early stages of negotiations with the Houston Police Department over transferring responsibility of drug evidence handling and storage to HFSC.

As part of the plan, drug evidence would no longer be stored at Narcotics Evidence Receiving (NER) at 1200 Travis and would instead move to a larger, more secure downtown facility that once served as a bank vault.

“The ultimate goal here is to improve the efficiency of evidence handling, storage and disposal while also improving the quality of evidence received by HFSC,” said Dr. Peter Stout, HFSC’s CEO and president.

“Drug evidence is high-risk and high-value and currently a real pain point that draws on HPD resources. HFSC is more knowledgeable and experienced in proper evidence handling as it is so crucial to what we do, making it a win-win for all involved,” he added.

HPD receives and stores hundreds of thousands of evidence items at multiple storage facilities in the city. In the long run it may make sense for HFSC to take over all property responsibilities, however, focusing on drugs for now creates a pilot project situation to better inform future decisions.

The long-term vision is for the county to also join the partnership and for all evidence in the region to be handled under the HFSC umbrella. This would allow for more consistent evidence and improve efficiency for the entire justice system, including the courts. The county has shown interest in participating in

the initial endeavor surrounding drug evidence.

“If we do this, we might also be able to get to a point where we divvy out analysis to the different labs based on capacity,” Dr. Stout said. “That, however, is a plan far off in the future that requires cooperation and intense negotiations between various parties.”

Meanwhile, HFSC has toured the proposed facility with HPD command and city staff as well as some City Council members. HFSC board members have also been offered tours.

There is not yet a clear timeline for completing this project, however, that is one of the first things that will be worked out if all parties decide to move ahead.

HFSC is also looking at possibilities for an onsite incinerator to decrease the transport of drugs. Currently, HPD contracts with an external vendor to destroy drugs and each transport to that facility involves dozens of people, including SWAT teams, to secure the evidence as it is moved across the city. By having an onsite incinerator that risky transport would be eliminated.

Legislation signed by Gov. Greg Abbott makes it more clear to law enforcement and justice agencies, such as HFSC, how drug evidence should be handled.

“This initiative has the potential to improve many processes for us and creates a way for bulk drug evidence to stay out of the lab, reducing time and risk associated with transport,” Dr. Stout said. “I am encouraged and excited by the opportunity this presents for HFSC and for future collaboration with the city and the county to improve regional crime laboratory processes.”



A Few Words From Our President

HOUSTON FORENSICS SCIENCE CENTER

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.

The Houston Forensic Science Center's crime scene unit has been characterized since 2014 _ when HFSC officially took over management of Houston's forensic services _ by change, and lots of it.

First, CSU got a civilian director, then it completely civilianized and all the classified officers transferred back to the Houston Police Department. It created standards and protocols and achieved accreditation. Now, it has a new director and an entire new team of supervisors overseeing many new crime scene investigators.

And, as though all that change in seven years hasn't been enough, the team has continued to operate 24/7 during a global pandemic while the homicide rate has increased by more than 30 percent both in 2020 and to date in 2021.

Amidst all this chaos the unit is now embarking on the first year of a five-year expansion plan. Until now, CSU has operated with fewer than 30 people, responding 24/7 to violent crimes across 685-square miles. The reality in Houston is that professionally trained crime scene investigators respond only to homicides, officer-involved shootings, baby deaths and less than one percent of aggravated assaults. CSU desperately needs to expand to better respond to Houston's needs, to help in the mission of improving public safety *and* to prevent burnout among our staff.

Expanding, however, comes with its own challenges. Training a crime scene investigator can take more than a year. Luckily, HFSC has been able to leverage the training by sending inexperienced hires to one of the leading crime scene academies to provide basic training, shortening the overall process. And this is still a drain on resources since a more experienced CSI must accompany and train newer staff members for several months before they can be authorized to work independently.

This is the reality in every crime lab. Training staff to do this important work is crucial and cutting corners is not an option. The flip side is that it drains resources.

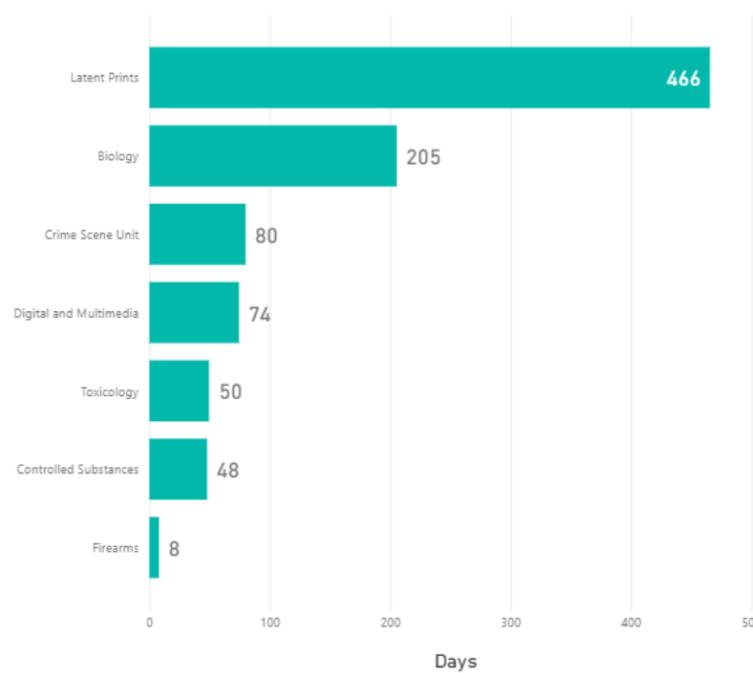
For Houston, however, expanding the crime scene unit will ultimately improve public safety, ensure better evidence integrity and allow law enforcement officers _ who often have to do this task with limited training _ do focus on the things only they can do.

This expansion is long overdue and all Houston residents should be grateful the city has made this a budgetary priority.

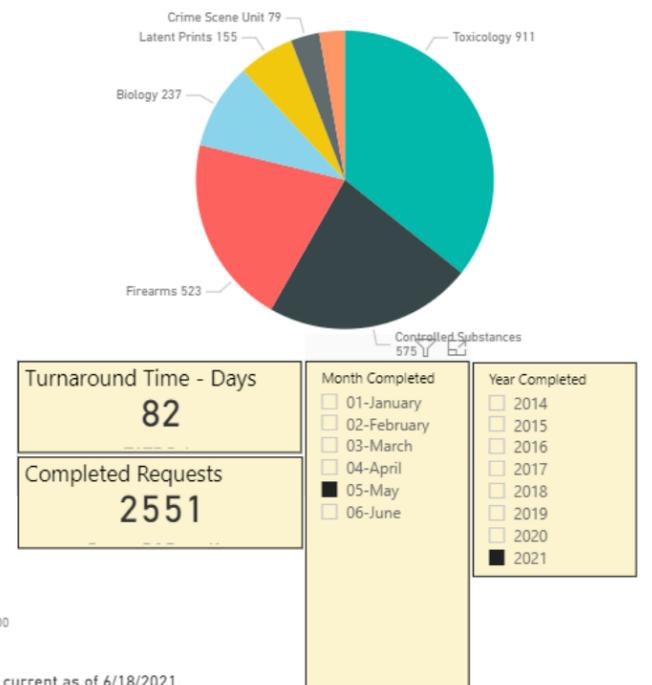
Peter Stout, Ph.D.
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HFSC at a Glance

Average Turnaround Time for May 2021



Requests Completed by Section



Turnaround Time - Days	82
Completed Requests	2551

Month Completed	Year Completed
01-January	2014
02-February	2015
03-March	2016
04-April	2017
05-May	2018
06-June	2019
	2020
	2021

This data is current as of 6/18/2021.

The Houston Forensic Science Center is still struggling with significant backlogs in latent prints and forensic biology/DNA, impacting turnaround time.

The impact is seen most significantly in the chart above in the turnaround time for latent prints. This is because the group is delving into the oldest cases in its backlog and since HFSC begins the count the moment a request is made so when the oldest cases are completed the turnaround time increases. The encouraging news is that a process improvement team has done a deep dive into the section's workflow and processes and will be launching a pilot project aimed at improving turnaround times.

The forensic biology/DNA section has been working toward backlog elimination for about a year, however, it has recently seen a 16 percent increase in requests, forcing the group to revisit its timeline for backlog elimination.

For more information, please visit www.houstonforensicscience.org

National consensus standards

HFSC implements OSAC standards

By Erika Ziemak

The Houston Forensic Science Center recently complied to its 11th Organization of Scientific Committees (OSAC) standard.

Most recently, HFSC complied to two DNA and two digital multimedia standards. It expects to meet July deadlines to comply with one toxicology standard and another in digital multimedia.

OSAC has created a national registry of consensus best practices and guidelines for forensic agencies.

HFSC's journey toward OSAC registry standard implementation began in December 2018 when the board of directors adopted a resolution requiring HFSC to adopt and incorporate any applicable OSAC standards.

"HFSC has been pioneering efforts to adopt OSAC standards and the quality division has to create methods and processes to ensure we are successful," said Dr. Peter Stout, HFSC's CEO and president. "We are now in a position to share our knowledge, lessons learned and implementation processes with others as they too embark on this journey."

As HFSC continues to comply to standards it will also work to improve its implementation program.

The quality division has learned a great deal along this journey, including the need to stick to a timeline, and is encouraging sections to develop milestones to make it easier for them to meet the one-year implementation deadline.

The first thing the quality division did to ensure HFSC could meet the terms of the board resolution was to revise the Quality Manual in February 2019. The revision requires compliance with any applicable OSAC standards, meaning standards relevant to any

forensic service HFSC provides.

HFSC disciplines are required to comply within one year of a standard's publication to the registry. The year provides technical sections time to perform a gap assessment and determine actions necessary to achieve compliance and milestones to help make that process easier to follow.

Because HFSC is pioneering this OSAC implementation program, it has evolved. In the beginning, HFSC selected technical section points of contact to serve as liaisons with the quality division. These "POCs" are responsible for



performing gap analyses and amassing section feedback when a standard is undergoing a required public comment period before it becomes official. This allows HFSC to provide input on the language in the final version.

Since then, the quality division has also integrated adoption checklists into the implementation program. The checklists mirror OSAC registry standards, aid in gap analyses and serve as an auditing tool ensuring compliance to each requirement of the standards. Lastly, implementation is documented on a final form which documents the date compliance was achieved.

HFSC has declared compliance to the following OSAC registry standards:

Biology/DNA

- [ANSI/ASB Standard 020, Standard for Validation Studies of DNA Mixtures, and Development and Verification of a Laboratory's Mixture Interpretation Protocol, First Edition, 2018](#)

- [ANSI/ASB Standard 040, Standard for Forensic DNA Interpretation and Comparison Protocols, First Edition, 2019](#)

Digital Evidence

- [ASTM E2916-19e1 Standard Terminology for Digital and Multimedia Evidence Examination](#)
- [ASTM E3150-18 Standard Guide for Forensic Audio Lab Setup and Maintenance](#)

Seized Drugs

- [ASTM E2329-17 Standard Practice for Identification of Seized Drugs](#)
- [ASTM E2548-16 Standard Guide for Sampling Seized Drugs for Qualitative and Quantitative Analysis](#)
- [ANSI/ASB Best Practice](#)

[Recommendation 037, Guidelines for Opinions and Testimony in Forensic Toxicology, First Edition, 2019](#)

- [ANSI/ASB Standard 017, Standard Practices for Measurement Traceability in Forensic Toxicology, First Edition, 2018](#)

Interdisciplinary

- [ISO 21043-2 Forensic Sciences - Part 2: Recognition, recording, collecting transport and storage of items](#)
- [ASTM E2917-19a Standard Practice for Forensic Science Practitioner Training, Continuing Education, and Professional Development Programs](#)
- [ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories](#)

THE COST OF RISING CRIME

Requests increase in nearly all disciplines



The Houston Forensic Science Center has seen this year a 10 percent increase in average monthly requests, most of it driven by disciplines that closely align with the spike in violent crime.

The significant increase in requests is forcing HFSC to hire additional personnel in some areas while reconsidering timelines for backlog elimination.

"When we see an increase like this we always have to ask how much can we absorb with current resources while still providing stakeholders quality results in a timely manner and when does it become untenable," said Dr. Peter Stout, HFSC's CEO and president.

"At some point, if resources are too tight, quality could be sacrificed and we cannot allow that to happen," he added.

The increase is largely driven by DNA, guns, crime scene and latent prints, four areas directly impacted by violent crime.

The greatest jump in requests has been for work related to the National Integrated Ballistic Information Network (NIBIN) – the ATF-led gun database. There has been a 23 percent increase in NIBIN requests this year. More telling, however, since many requests include more than one firearm, there has been a more than 21 percent increase in guns processed. In 2020, the group averaged just over 420 guns per month. This year, they are processing an average of more than 510 per month.

"This is not sustainable and our veteran NIBIN technicians have been working ridiculous amounts of overtime

to maintain the essential turnaround times," Dr. Stout said. "We are currently looking for a fourth NIBIN technician, but it is unclear if that will be enough or if these numbers will continue to increase."

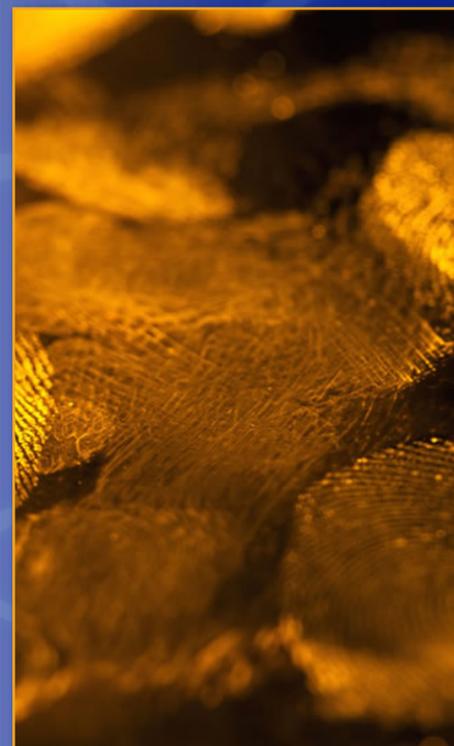
Meanwhile, requests for DNA analysis have increased more than 16 percent this year, forcing the group to reconsider its timeline for eliminating its backlog.

And requests for latent print processing have increased more than 18 percent. That too is not sustainable and we've hired two additional latent print processors who still need to complete training. Once the group of four gets the backlog under control one of the processors will train to become an examiner, helping with the backlog in latent print comparisons.

"This is a constant juggling game of resources," Dr. Stout said. "The reality is that as well-resourced as HFSC is compared to other laboratories nationwide, we still struggle to keep up with demand, especially as it increases."

The crime scene unit is most impacted by the increase in requests, especially homicides, which spiked more than 30 percent in 2020. That trend continues this year, including a 22 percent increase in requests for vehicle processing.

"This was going to be a tight budget year without this increase," Dr. Stout said. "We will spend the year having difficult conversations and making hard decisions and choices about where to focus our resources."



Right answer: DNA, NIBIN seal the deal



Twice in the past month scientific results from the Houston Forensic Science Center helped free a person wrongfully suspected of sexual assault and nab a person suspected of murder.

The two separate incidents, which ended with opposite results, underscore how crucial it is for HFSC to release quality results when the system most needs those answers.

"I often say that the right answer too late is no better than the wrong answer on time and this month we've seen exactly why," said Dr. Peter Stout, HFSC's CEO and president.

"People think crime labs help police 'nab the bad guy.' But that's not our job. Our job is to provide scientific information that will inform investigators, prosecutors and defense to ensure justice is served," Dr. Stout added.

Earlier this year, in a case that made headlines in early June, the Harris County District Attorney's Office dropped charges against an Uber driver who had been accused of sexually assaulting a passenger. After two years of lost income, shame and helplessness, DNA analysis found that the biological specimens collected from the victim did not come from Khandaker Rahman,

Two recent cases in Houston highlighted how crucial scientific evidence can be to ensuring justice. In one, DNA results excluded a man charged by police in a sexual assault. In a second, a cartridge casing linked to a firearm helped police track down a suspected murderer.

the Uber driver.

However, it remains unclear whose DNA that is, though it could at any time "hit" against another DNA profile in the national database, CODIS.

"Thankfully, while Mr. Rahman spent several years accused of a crime he didn't commit, DNA evidence excluded before a conviction or other adverse impacts that could have cost many more years of his life," Dr. Stout said.

"Unfortunately, the real perpetrator remains free, and yet, this is a great example of why forensic science is all about the right answer regardless of which side it helps," he added.

Meanwhile, in another HFSC section, firearms technicians and examiners helped narrow in on a suspect from an April homicide.

Crime scene investigators collected cartridge casings at that homicide scene in the parking lot of a Dave & Busters and Houston Police Department staff uploaded images of that evidence into



the National Integrated Ballistic Information Network (NIBIN,) the ATF's gun

database.

Four days later, there was an accidental shooting of a 3-year-old boy. HFSC NIBIN technicians test-fired the gun collected at that scene and within two days it "hit" against the evidence collected at the homicide a few days earlier.



Firearms examiners confirmed the hit and, along with additional cellphone data, officers filed murder charges.

"Clearly, when science is done correctly it can either help the defense or the prosecution," Dr. Stout said. "At the end of the day, we don't care who it 'helps' so to speak. Our mission is to be committed to the truth through the delivery of quality, timely science to our stakeholders."

Multimedia in a race with technology

Rapidly changing technology keeps analysts, section on their toes



The Houston Forensic Science Center's digital analysts are in a never-ending race against some of the most powerful corporations in the world: the tech companies that produce smartphones, laptops and some of the latest and greatest artificial intelligence-equipped products.

The ability to keep up with the constantly upgraded and updated technology can mean the difference between extracting information that can be crucial to an investigation and completely failing.

Often, the owner of the device will provide permission and access, making it easier for digital examiners to extract information. The real challenges arise when the court has granted a search warrant to access the device but the owner has not provided the passcode information.

Like other forensic units nationwide, HFSC's multimedia group relies on external products created to bypass passcodes, but even those tools do not have a 100 percent success rate and can lag behind evolving technology.

"When new phones come out we're at the mercy of Cellebrite and others ... to get into the phone," said Doug Gotfredson, a supervisor in the multimedia section. "But if it's the ultimate latest or greatest, there could be issues ... Things are more in our favor if the device is more popular because then the vendors will support them."

Phone manufacturers, such as Apple, make it difficult by creating complex, encrypted devices and passcodes. For example, it could take 20 years to break a six-digit passcode because there are so many possibilities.

The issues, however, extend far

beyond phones, which in the current world could be evidence in any case. Phones, though, are only one way to extract information about what an individual has been doing. GPS trackers and other data gathering tools exist in everything from a smartwatch, an Alexa, an iPad and, yes, in a vehicle.

The multimedia section began offering "infotainment" services in May 2020 and completed 12 requests last year. This involves a digital analyst removing the "infotainment" system _ where radio, phone, GPS, bluetooth and other data is stored _ from a vehicle and extracting data that could be used in an investigation.

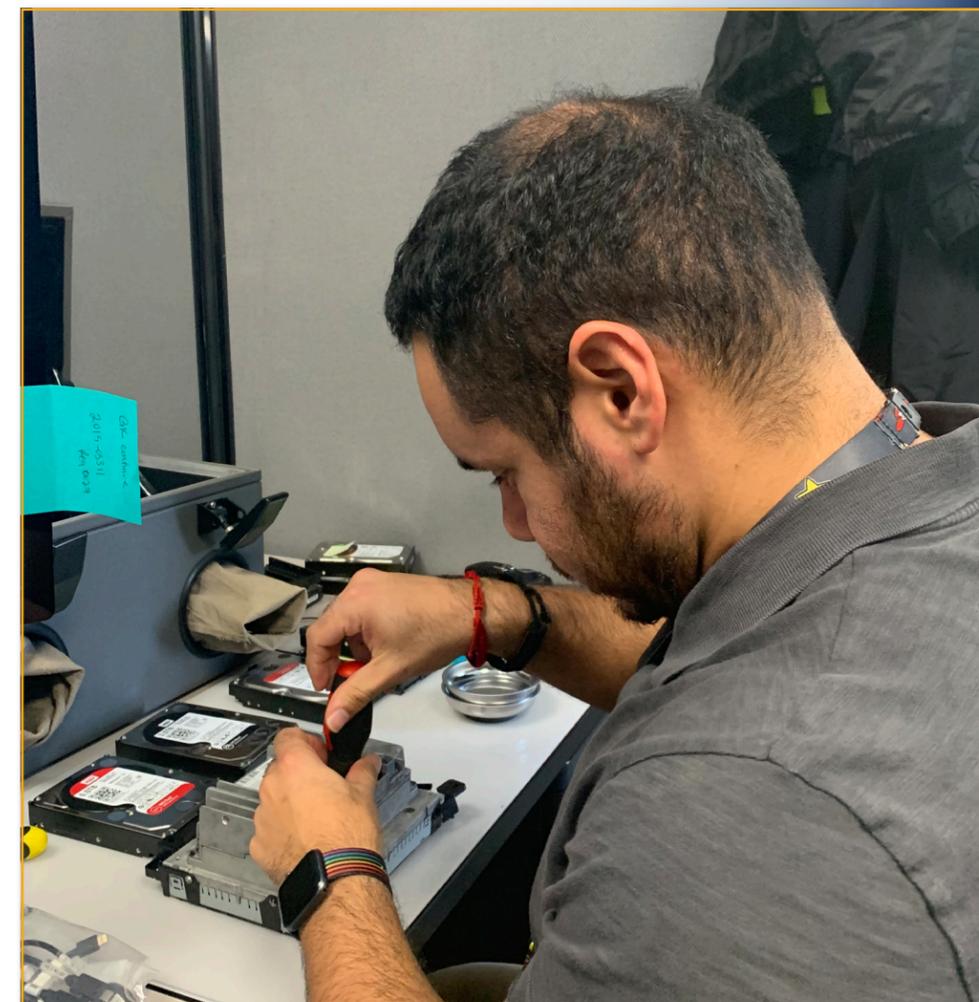
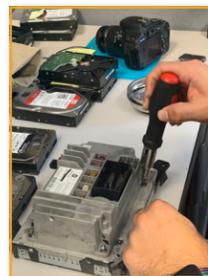
Again, attempts to extract information are not always successful, but to try the system must first be removed, a task that can take a half-day or more.

This year, the group has already had 16 requests for this service, seven from June 1 to June 16 alone.

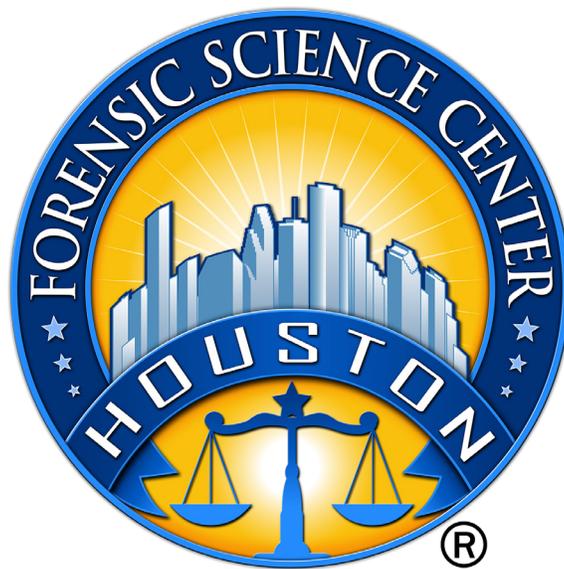
"When successful we can extract data such as car events _ so for example, when a door opens or closes _ seat belt clicks, location information, calls placed and more," said Preston Coleman, a digital analyst. "But cars are more fragmented than phones because make, model and trim all determined whether an external vendor can get into it."

This work, though, is becoming more crucial as people rely on these devices more often.

"Digital work is expensive and challenging, but in this day and age, we must make every effort to keep up with the technology and provide quality, credible data to our stakeholders," said Dr. Stout, HFSC's CEO and president.



The Houston Forensic Science Center's multimedia section extracts data from digital devices, such as phones, smartwatches, car "infotainment" systems and other items that use artificial intelligence, such as Alexa. The biggest challenge, however, is keeping up and ahead of the constantly evolving and changing technology. As systems become more encrypted and passcodes more complex, digital analysts race to keep up through new training programs and with the use of new products designed to help extract data. In the current world, digital data can exist in nearly every case.



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