

# WHAT'S NEWS @ HFSC

HOUSTON FORENSIC SCIENCE CENTER • SEPTEMBER 2020

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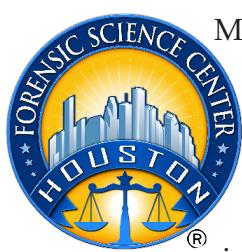


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## HFSC launches new testing method to differentiate hemp from marijuana



More than a year after a Texas law legalizing hemp products sent marijuana prosecutions into upheaval, the Houston Forensic Science Center has implemented a new testing method that differentiates between hemp and marijuana.

The new method, launched September 8, is only applicable to plant products. HFSC, like nearly all other public laboratories in Texas, is still unable to differentiate between hemp and marijuana in items such as edibles, oils and waxes.

"This new testing method provides at least some information to stakeholders looking to determine whether an item of evidence is marijuana or hemp," said Peter Stout, HFSC's CEO and president.

"HFSC will need more time, additional resources and potentially new, more expensive instruments in order to expand testing to non-plant products," he said.

Marijuana prosecutions came to a near halt in June 2019 after the Texas Legislature passed a law designed to legalize commercial hemp products.

The law defined anything with a delta-9 tetrahydrocannabinol (delta-9 THC) concentration of 0.3 percent or less as hemp. Items with a delta-9 THC concentration above that threshold would be illegal marijuana. THC is the cannabinoid that causes a "high."

However, when the law passed public crime laboratories that had never before been asked to determine THC concentrations in suspected marijuana evidence did not have the capability to conduct such analysis.

Prosecutors struggled bringing marijuana possession charges without a lab report, hampering prosecutions statewide.

The method HFSC and other crime labs in the state are using measures delta-9 THC above or below 1 percent, in part to prevent false positives since the 0.3 percent determined in law is so precise. Due to the gap between the law and the testing, HFSC has asked all stakeholders to acknowledge an end-user agreement and will note the limitation on all final reports.

"This new method addresses the vast majority of cases we see in Houston today, and that's helpful," said James Miller, manager of HFSC's seized drugs section.



**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.

# A Few Words From Our PRESIDENT

HOUSTON FORENSIC SCIENCE CENTER

It's taken more than a year for the largest public crime laboratories in the state to validate and launch a new testing method for suspected marijuana after the Texas Legislature legalized hemp in June 2019.

The new method, though, only addresses plant products, meaning public crime labs in the state *cannot* differentiate between hemp and marijuana for edibles, oils, waxes and all other non-plant items suspected of having a THC concentration of 0.3 percent or more.

The new law, which defined legal hemp as all Cannabis sativa L products with a delta-9 THC concentration of 0.3 percent or less, upended marijuana prosecutions in Texas, making it almost impossible for prosecutors to prove without a lab test that a suspected product was hemp or marijuana.

Now, though, that we've made some progress, what else needs to happen in Texas so we can address other substances that by law remain illegal?

1) The verbiage in the law must be clarified. For example, the law states that the concentration should be based on "dry weight." But what does that mean for a non-plant product, such as an oil? How do you get a "dry weight" for a liquid? And what about the narrow definition of "delta 9" THC? What about the other 100-plus cannabinoids, some of which also cause the "high" the law is trying to address?

2) Resources. H.B. 1325 did not include a fiscal note and cash-strapped, under-resourced crime laboratories had to incur the cost of validating a new testing method. For plant materials, we were able to do this without purchasing new instruments. That is probably not going to be the case for non-plant materials and we do not have the money to purchase such equipment without additional dollars. It also remains unclear whether the demand for the new tests, which takes several hours compared to just minutes under previous testing protocols, will require additional manpower. Money is an issue no one wants to talk about, but it's a problem nonetheless.

3) Wider implications. As the nation and the world loosen marijuana laws there will be broad impact across the justice system. Regardless of position on the legality of marijuana, increased use *will* have implications on impaired driving. From law enforcement to the courts, no component of the justice system is in a position to handle the enormous public safety impact this will have. Houston and Texas are the worst in the nation for alcohol-impaired driving. Adding Cannabis to the mix will present significant challenges.

I am pleased with some of the response we've received on the state level to the problems that have resulted from the passage of H.B. 1325 and I am optimistic we have serious people talking about how fix the issues.

I do, however, hope we have all learned a lesson about how seemingly benign laws can have far-reaching effects on the justice system and that overlooking the crime lab's role and impact can be detrimental.

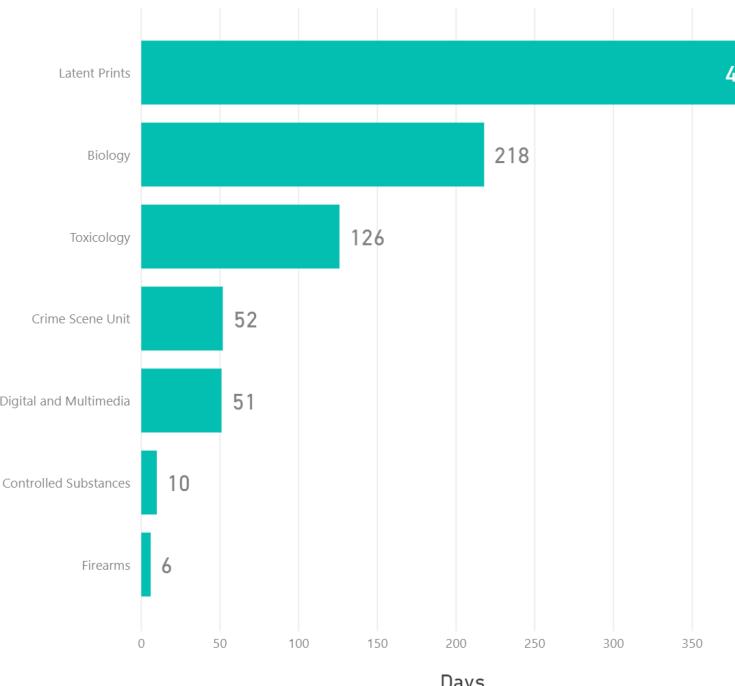
As we conduct a national experiment with marijuana laws, science and laboratory testing will make or break policy. The scientists have to come ready to participate and they have to be an equal partner at the table.

**Peter Stout, Ph.D.**  
*CEO/President*

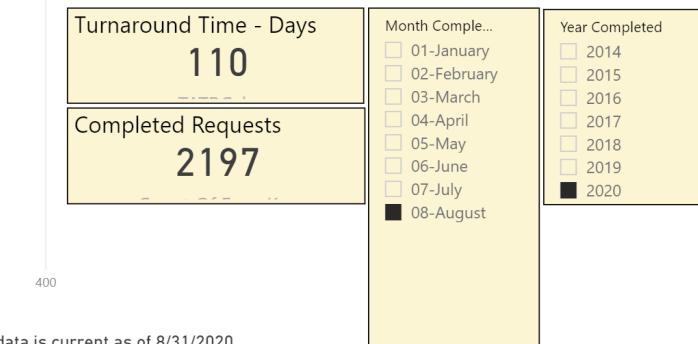
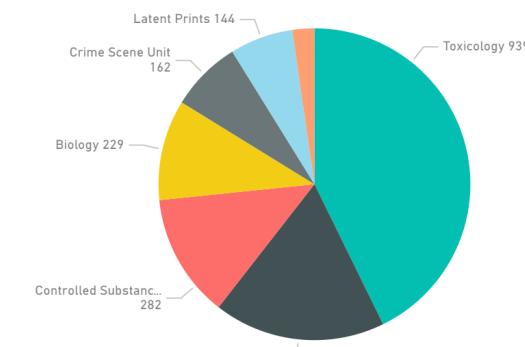


# HFSC At A Glance

## Average Turnaround Time for August 2020



## Requests Completed by Section



August brought with it not only a continuation of the struggles resulting from the ongoing pandemic, but also Hurricane Laura, which disrupted operations for about two days.

Two days may not seem like a lot, but in a crime laboratory setting, it impacts production.

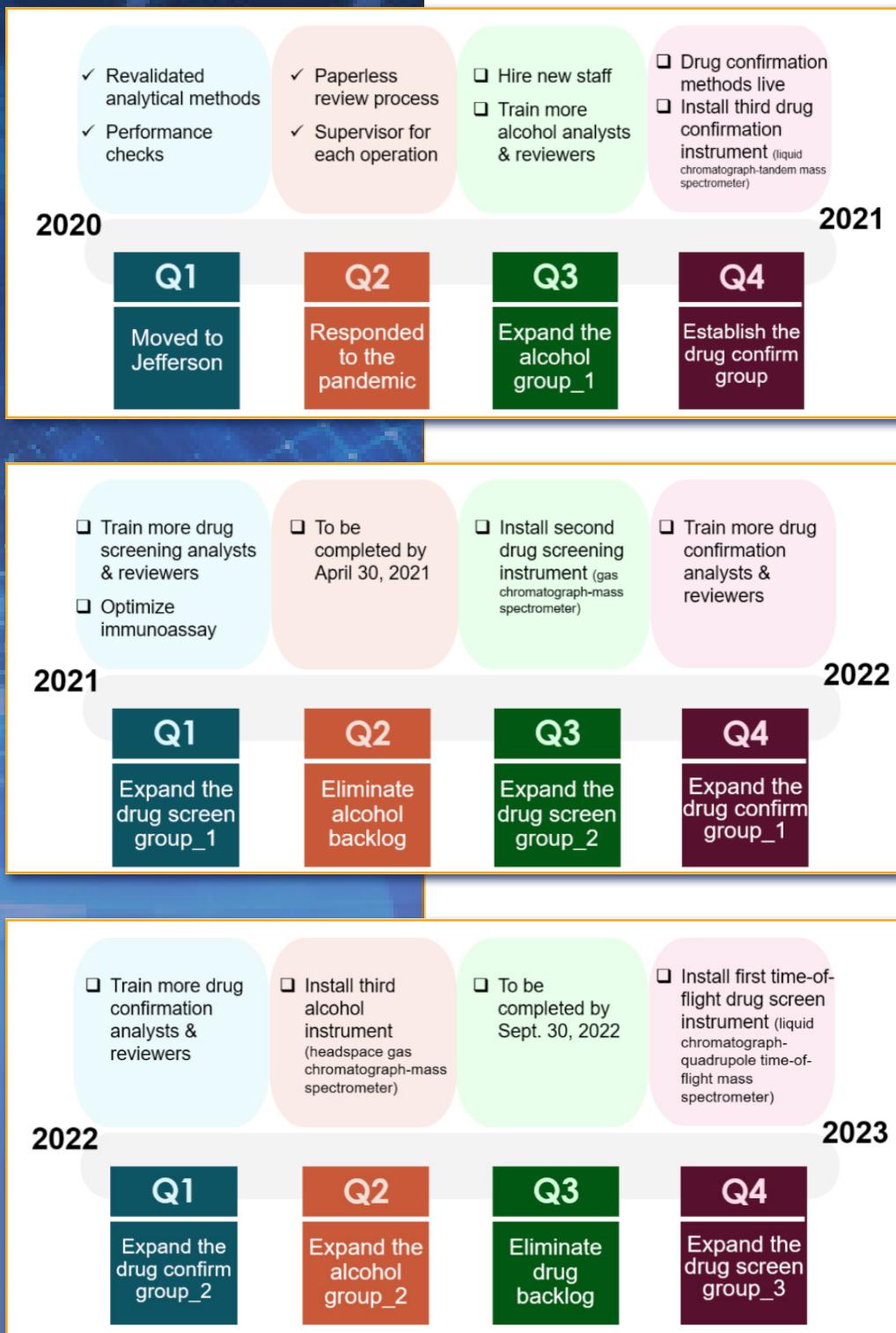
Despite these challenges, staff completed about the same number of requests as it does each month.

Notably, toxicology cases accounted for nearly half of all completed cases as the section continues to plow through a backlog that has built up in recent years, in large part due to a more than 40 percent increase in demand.

The forensic biology/DNA section is also working through its backlog, in part by sending hundreds of kits to two commercial vendors. By using those services, the section will be able to continue cross-training staff and get a better handle on the impact the introduction of probabilistic genotyping is having on output. Probabilistic genotyping software will allow analysts to make better and more use of complex DNA data, but as a result there will be more information to interpret, slowing down production.

# TOXICOLOGY: 3-YEAR PLAN

BY JORDAN BENTON



The Houston Forensic Science Center's toxicology section has devised an ambitious three-year plan that will eliminate backlogs and increase capacity to allow the section to keep up with growing demand.

The plan includes hiring additional staff to meet rising demand, eliminating the section's backlogs and maintaining a 30-day turnaround time, cross-training analysts, validating new methods to expand testing capabilities, replacing old instruments and introducing new technologies all while emphasizing training and professional development.

These changes are crucial especially since

requests increased 41 percent between 2017 and 2019. Most of that increase can be attributed to greater enforcement by the Houston Police Department, and Chief Art Acevedo has made clear he will continue to crack down on drunk driving. The three-year plan will allow HFSC's toxicology section to address this and other stakeholder needs.

"This three-year plan is to ensure we balance casework with cross-training and professional development. The latter two are essential for us to build sustainability and reputation as an exemplar forensic toxicology laboratory, but we haven't been able to focus on them in the past," said

Dr. Dayong Lee, manager of HFSC's toxicology section.

Until recently, the section has largely been focused on big, destabilizing projects, such as a facility move and the implementation of a new Laboratory Information Management System.

Now, though, attention has turned fully to implementing the three-year plan.

The City of Houston increased HFSC's budget to allow the toxicology section to hire an additional

**"LIFE IS NOT PERFECT ... CHANGES WILL OCCUR AND OTHER FACTORS WILL ARISE."**

five analysts and to purchase new, higher-tech instrumentation needed to meet growing demand. Dr. Lee began by restructuring the section to expand the supervisor level from one to three, each of them leading a team of people responsible for specific parts of the three-pronged process.

The plan is aggressive and does not account for unplanned interruptions.

"Life is not perfect, and this three-year plan considers the same instrumentation and staffing we have today," said Dr. Lee. "Changes will occur, and other factors will arise. We will plan around our timeline and move forward as strategically as possible."

# CSU STRUGGLES WITH RISING HOMICIDES

BY JORDAN BENTON



The Houston Forensic Science Center's crime scene unit has been struggling with a more than 30 percent increase in homicides this year, a situation that has placed further stress on the resource-strapped team.

HFSC's 27-member, 24/7 CSU often has only three people on a shift, meaning that as homicide rates increase and demand for other services rise, CSIs can find themselves responding to more than one scene during a 10-hour workday.

The increase in homicides has been attributed to pandemic-related issues: the pandemic has disrupted drug trafficking, leading to a shortage of street drugs and an increase in violence, and lockdowns and quarantines have been blamed for a rise in domestic violence.

"Our minimum staffing level is no less than three crime scene investigators, or CSIs, in the office at once," said Ms. Carina Haynes, a CSU supervisor. "Our goal is to send two CSIs to a scene, but with higher call-outs, that isn't always possible. Sometimes we have to send another CSI to assist on a second scene after they complete work at their first one."

Houston had 277 homicides in all of 2019. But by the end of August this year, Houston had already recorded 231 homicides – a

*The homicide rate in Houston has increased by 31 percent in 2020 compared to last year. The rise is partly due to pandemic-related issues, such as a disruption to drug trafficking and domestic violence. The increase is putting further stress on the already resource-strained 27-member CSU.*

31 percent increase.

"The only thing that would help our unit is more staff," said

Mr. Jerry Pena, HFSC's director of CSU and multimedia.

"Right now, our crime scene unit only handles the most severe cases, and a CSI's work doesn't end at the scene. They have to come back to the lab, submit evidence and complete their case report, which on average takes two to three days to wrap up."

Typically, CSIs spend about four to five hours at a crime scene, documenting, photographing, sketching, collecting and packaging evidence. The unit also processes vehicles for evidence at the vehicle examination building. Vehicle submissions have also increased, in part due to the rising homicide rate.

"Everything has a ripple effect. There may come a time where our staff is stretched thin enough to not be able to respond to a scene. Collection time is everything. Cases could go undocumented with evidence unprotected and left behind," Mr. Pena said.

"We're sending our CSIs to scene after scene, over and over again, and these homicide calls can have an impact on our employees. There's little time for them to decompress," he added.



# FORENSIC LABS AND THE IMPACT OF CRISES

Hurricanes. Tropical storms. Pandemic. Downtown protests.

All this since January.

The Houston Forensic Science Center is certainly not the only organization in Houston \_ or the nation \_ that is struggling to get through 2020 and all of the seemingly unprecedented, simultaneous,

surprises it keeps throwing out. But what does it mean when a crime laboratory has to quickly change how it works or, worse, shutdown completely?

What does it look like? And what is the impact on the public, the community and other stakeholders?

To begin with, a crime laboratory, such as HFSC, does not have the luxury of halting services for weeks or months on end. Crime does not stop for a pandemic \_ and in fact, has in some areas increased. And although jury trials have been suspended for months and aren't scheduled to resume until October 1, relieving some pressure from analysts, many other hearings continue, at times requiring expert testimony from HFSC scientists.

HFSC is an essential service. The longer the crime lab remains closed, the bigger the backlogs, the longer the turnaround times, the more effort is needed to catch back up.

Some of this was learned during Hurricane Harvey, when



massive flooding prevented staff from getting to work and HFSC was forced to close for just over a week. It took months for some disciplines to catch up after that incident.

But what have we learned? And how, despite the difficulties of the pandemic, have we learned and changed that make it a little easier to contend with some of these surprises.

The pandemic forced HFSC to quickly review processes and workflows and shift to paperless, electronic and digital methods of sharing and distributing information, including forensic reports. The need to protect staff and their families \_ and HFSC operations \_ meant work from home had to be a possibility to allow for greater social distancing in the facility.

Shutting the laboratory down completely is not an option. However, if staff have the ability to review casework from home, groups could be divided into two rotating teams to minimize contact between folks while also decreasing onsite numbers.

For some sections, much of the paperless workflow already existed and the transition from

office-based work to work from home was quick and nearly seamless. The latent print section, for example, was able to quickly move nearly all examiners to a 100 percent work from home situation. Those that work in the laboratory still need to come



into the facility, but shifting more than a dozen examiners and the management team to working from home significantly decreased numbers.

Other sections rapidly adjusted processes and priorities to decrease onsite numbers by 50 percent.

The end result when Hurricane Laura threatened to deal a significant blow to Houston?

Although some productivity was lost while staff powered down laboratories and wrapped instrumentation for protection, all staff were able to work from home when the laboratory shutdown for one day. Cases were completed and reports went out the door.

"The silver lining here," said Dr. Peter Stout, HFSC's CEO and president, "is that while this year has been exhausting, we are more nimble and flexible as a result. HFSC is in a far better position than it was a year ago to deal with crises, and that is always good news for the community."



## Testimony TRANSCRIPTS

By Erika Ziemak

In the two years since the Houston Forensic Science Center's launched its unique transcript review program it has been praised by external agencies and helped the quality division use the findings to identify areas where more and different testimony training is required and spot problematic testimony.

This quality initiative launched in 2018 and is designed to bolster an accreditation requirement that all analysts that testify in court must be monitored at least once a year. The goal behind this project is to review trial transcripts, providing a different view of what an analyst does and says in court.

The transcript is first reviewed by the testifying analyst. Then a quality division specialist redacts all identifying information from the transcript and it is provided to a three-person panel for review. The panel includes a staff member with technical knowledge in the specific discipline of testimony, a quality division representative and non-technical staff member that serves as a lay person. The committee discusses the transcript and authors a comprehensive evaluation. That feedback is then provided to the analyst with the goal of identifying opportunities for improvement.

The project has been beneficial. Based on feedback gathered from transcripts across all disciplines, the quality division designed and facilitated a training that focused on qualifying questions. HFSC required all technical staff to attend the training and uploaded reference material into HFSC's online record management system.

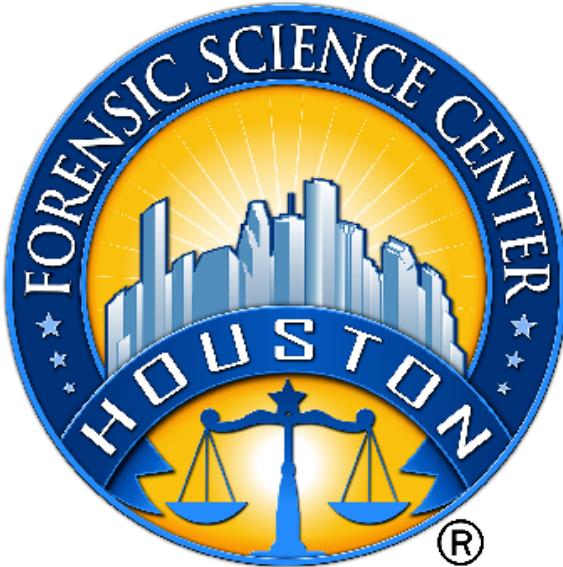
Sections will also be incorporating some transcripts that have been reviewed into their own training programs allowing trainees to review the transcripts in preparation for court appearances in addition to participating in a mock trial. The transcripts will also be available for all technical staff to review.

In addition, the project has helped identify strong testifiers and strong testimonies. These testifiers can be mentors for trainees, help facilitate mock trials and provide valuable feedback to less-experienced analysts.

Recently, after a panel identified particularly strong testimony, the quality division provided an excerpt of the transcript to all technical staff and required them to document their review of the information. By sharing information in this manner staff are exposed to responses they can incorporate into their own testimony .

Finally, the transcript review project revealed that one former staffer had testified outside the scope of their expertise and HFSC disclosed the incident to the Texas Forensic Science Commission. HFSC also used the incident to highlight the issue to staff and discuss the limitations of testimony.

The TFSC voted to take no further action, meaning HFSC had taken appropriate action when it discovered the incident, and praised HFSC's program, noting "the laboratory discovered the issue as a result of a proactive and commendable transcript review program."



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