WHAT'S NEWS @HFSC

HOUSTON FORENSICS SCIENCE CENTER • APRIL 2021

INSIDE THIS EDITION

HFSC's seized drugs section resumes normal onsite schedule, tackles backlog

The Houston Forensic Science Center's seized drugs section is back onsite full time and focused on working through a backlog that accumulated in recent months due to rotating schedules implemented in response to the pandemic and demand for new, more complex marijuana testing.

The seized drugs section had operated for years without a backlog and had even achieved an average turnaround time of less than 10 days. The past year, however, delivered significant back-to-back blows to the section, forcing the group to again tackle a backlog just as requests are returning to pre-pandemic levels.

"The challenge is always to focus not only on eliminating the backlog but also keeping up with incoming casework and trying to ensure, especially now as we expect courts to start ramping up after a year of almost no activity, we are prioritizing items that are most pressing for our stakeholders," said James Miller, seized drugs manager.

The section currently has a backlog of more than 500 requests. Mr. Miller will present a backlog elimination plan to the board of directors at its May 14 meeting.

The seized drugs section, exquisitely reliant on lab-based activities and instruments, has been limited during the pandemic in how much work it could complete remotely. Initially, with requests relatively low, the section managed to keep up with the incoming work despite the rotating schedule. Slowly, though, the caseload is starting to creep up _ finally hitting pre-pandemic levels last month _ making it more difficult.

HFSC also rolled out a new marijuana testing method in September that allowed stakeholders to request this analysis type for the first time since 2019 when the legal definition of marijuana changed. The new method, which allows analysts to determine whether a plant material has a THC concentration of above or below 1 percent, is more complex and takes twice as long to complete as testing for other substances performed by the section.

"As you all know, like most other crime labs, we operate on a slim budget, so any surprises _ such as a yearlong pandemic or unfunded legislation _ creates havoc," said Dr. Peter Stout, HFSC's CEO and president. "The seized drugs section has been dealt a double whammy."

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 FORENSICS SCIENCE CENTER

Crime lab scandals. They seem to be, at this point, a dime a dozen. So, in some ways, it did not come as a surprise that another one made big news earlier this month when ANAB, the accrediting body, suspended accreditation for the Washington, D.C. lab after it said the agency had misrepresented a quality incident.

There is not enough public documentation available to truly opine on what happened there and I am not convinced doing that would be beneficial.

While we will likely revisit that issue and learn lessons from it as more information becomes publicly available, I prefer now to address some core items that may more immediately benefit the forensic community and help us better serve the justice system and our communities: creating a culture of quality and transparency that seeks to far exceed accreditation standards.

Here in Houston, we view accreditation standards as a minimum and created systems that stretch those boundaries. We have done this by building a robust blind quality control system in which mock cases make up a percentage of the work that goes through each section _ except crime scene. The number of monthly submissions differs between disciplines and is based on 5 percent of completed casework. We also have a transcript review project designed to put more eyes on this crucial part of our work and bolsters and strengthens live testimony monitoring. And HFSC's board of directors unanimously voted to incorporate all applicable standards in the Organization of Scientific Area Committees for Forensic Science registry.

Finally, and maybe the most crucial part of creating our quality culture, has been "radical transparency." I will say on the front end: nothing about it is easy. But we have found it to be the thread that ties everything together. We have created culture that makes clear mistakes are a part of the process and should be addressed as such. We have done this by sharing all our corrective actions on a public-facing website, talking about incidents at public board meetings, discussing them with staff and even addressing errors, when necessary, in the media. We make clear to all stakeholders _ internal and external _ we want to identify mistakes, correct them and use them to improve our processes and our product.

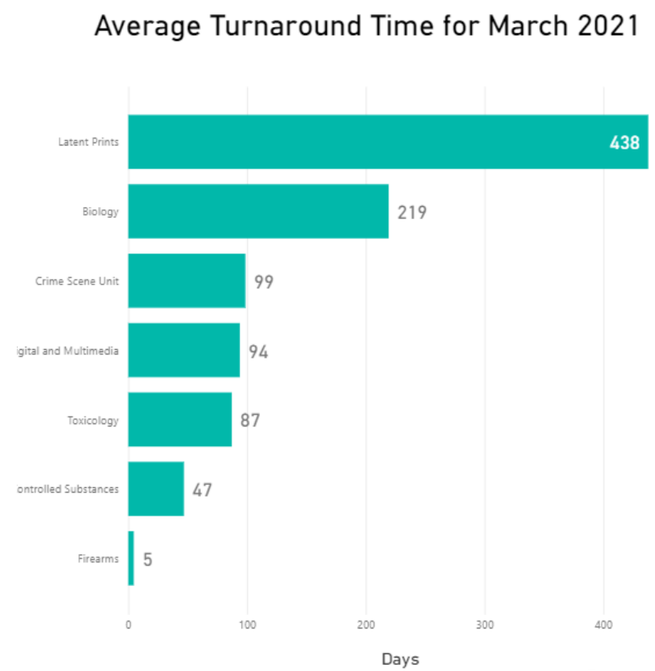
I say all this knowing that because of Houston's scandalous past and our unique structure it is easier for us to take such risks and justify these actions. I also say this knowing the forensic community has, historically, avoided addressing errors publicly.

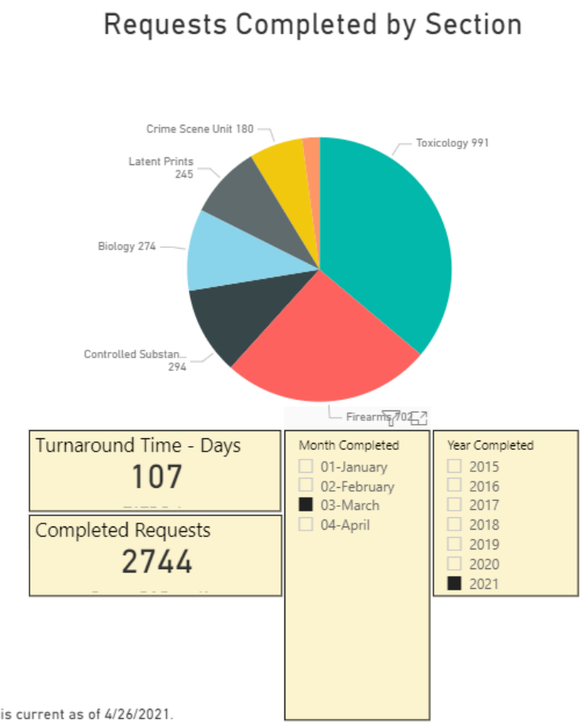
Houston is doing this, and we are surviving.

Maybe if we do this as a community we will, together, create a quality culture that strengthens our credibility and contribution to the justice system.

Peter Stout, Ph.D.
CEO/President

HFSC At A Glance

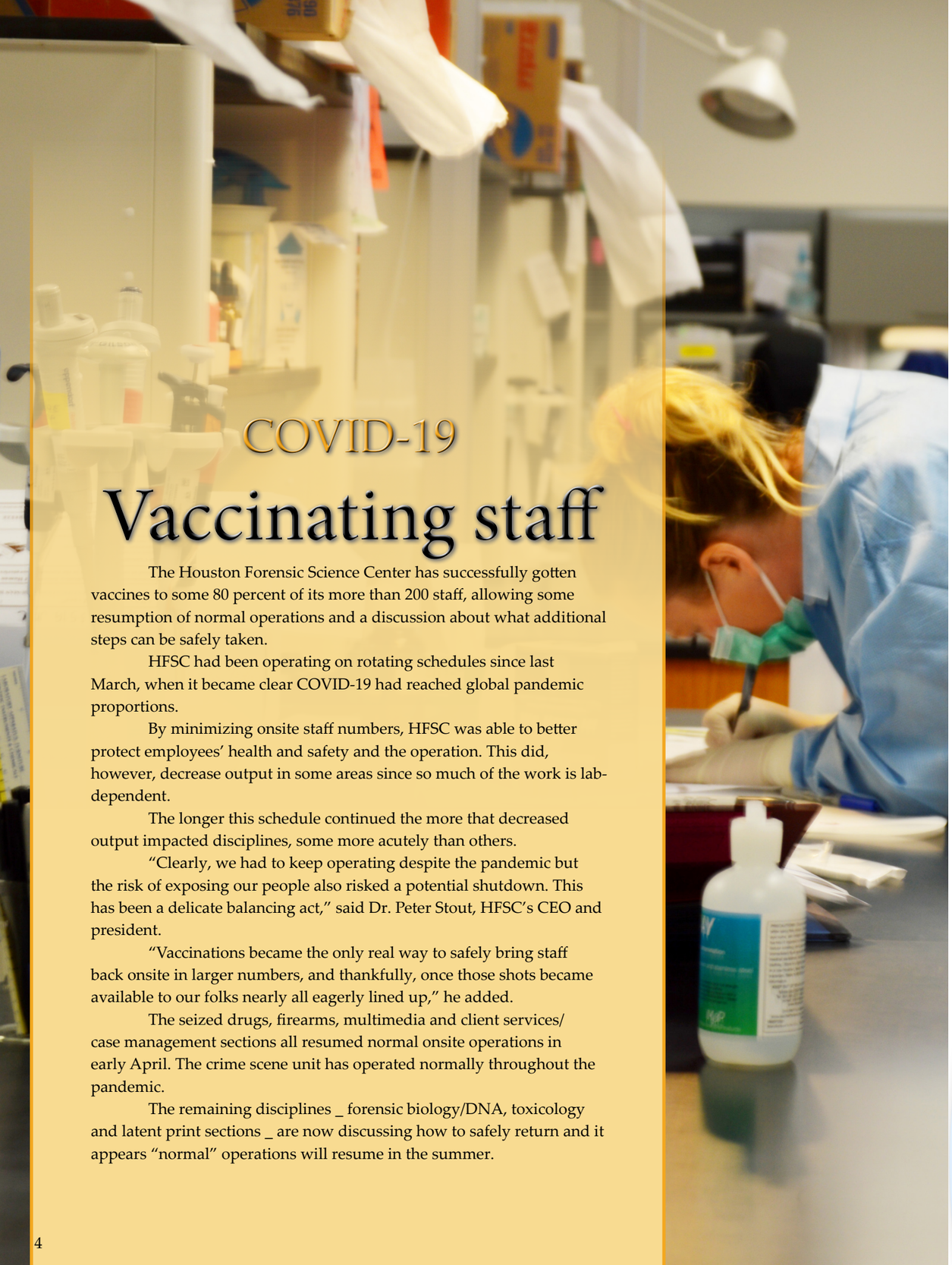




The pie chart tells a clear story: the toxicology section is plugging along, determined to eliminate a backlog that accumulated over the past three years. The backlog is the result of a rapid increase in testing requests due to greater enforcement by the Houston Police Department, a facility move and the pandemic. The section is on track to eliminate that backlog this year though they will struggle for longer with drug analysis. That backlog is accumulating due to a nearly two year effort to rebuild testing methods, which now need to be approved by ANAB, HFSC's accrediting body. ANAB will review the new methods in July. Meanwhile, however, that backlog will grow because HFSC has exhausted all federal funds that had been available for outsource testing.

Other sections are also addressing backlogs and as more staff resume full-time onsite work progress will be made.

For more information, please visit www.houstonforensicscience.org



COVID-19

Vaccinating staff

The Houston Forensic Science Center has successfully gotten vaccines to some 80 percent of its more than 200 staff, allowing some resumption of normal operations and a discussion about what additional steps can be safely taken.

HFSC had been operating on rotating schedules since last March, when it became clear COVID-19 had reached global pandemic proportions.

By minimizing onsite staff numbers, HFSC was able to better protect employees' health and safety and the operation. This did, however, decrease output in some areas since so much of the work is lab-dependent.

The longer this schedule continued the more that decreased output impacted disciplines, some more acutely than others.

"Clearly, we had to keep operating despite the pandemic but the risk of exposing our people also risked a potential shutdown. This has been a delicate balancing act," said Dr. Peter Stout, HFSC's CEO and president.

"Vaccinations became the only real way to safely bring staff back onsite in larger numbers, and thankfully, once those shots became available to our folks nearly all eagerly lined up," he added.

The seized drugs, firearms, multimedia and client services/ case management sections all resumed normal onsite operations in early April. The crime scene unit has operated normally throughout the pandemic.

The remaining disciplines _ forensic biology/DNA, toxicology and latent print sections _ are now discussing how to safely return and it appears "normal" operations will resume in the summer.

Firearms

HFSC seeks hi-tech 3D scope

By Melissa Nally

The Houston Forensic Science Center will be one of the first crime labs in the country to purchase for its firearms section a 3D microscope, a state-of-the-art technology that will lead to exciting changes in how fired evidence comparisons are done in the future.

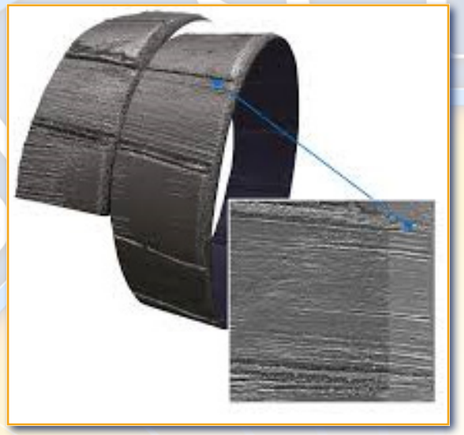
This couldn't come at a better time for a field that has been under recent scrutiny. The forensic firearms discipline has been criticized for lacking statistics to support conclusions of identification or elimination.

The subjective nature of these conclusions has led to concern among some stakeholders, including defense attorneys and prosecutors. These concerns have also been noted in national reports, including in 2009 by the National Academy of Sciences and again in 2016 by the President's Council of Advisors on Science and Technology.

More recently, a debacle in the firearms section of the Washington DC lab has underscored the potential for firearms examiners to reach different conclusions when looking at the same evidence items.

That scandal centered around the DC lab's examiners making an identification while external experts said the items were in fact not fired from the same gun. ANAB, the lab's accrediting body, has since suspended the lab's accreditation.

"We have an obligation to not only improve our own processes, but also ensure that when we do this we are considering the national conversation and lessons learned from mistakes made in other agencies," said Dr. Peter Stout, HFSC's CEO and president. "In firearms, the 3D microscope addresses some of that."



HFSC's board of directors approved the $220,000 purchase in April. Houston's City Council has also given the green light for HFSC's 2022 budget, which includes this purchase.

The 3D microscope, which provides views with greater detail and depth than the comparison microscopes currently used, will enable firearms examiners to evaluate bullets and cartridge cases in a whole new way. This enhanced clarity will also likely reduce turnaround times as examiners will spend less time adjusting lighting and angles.

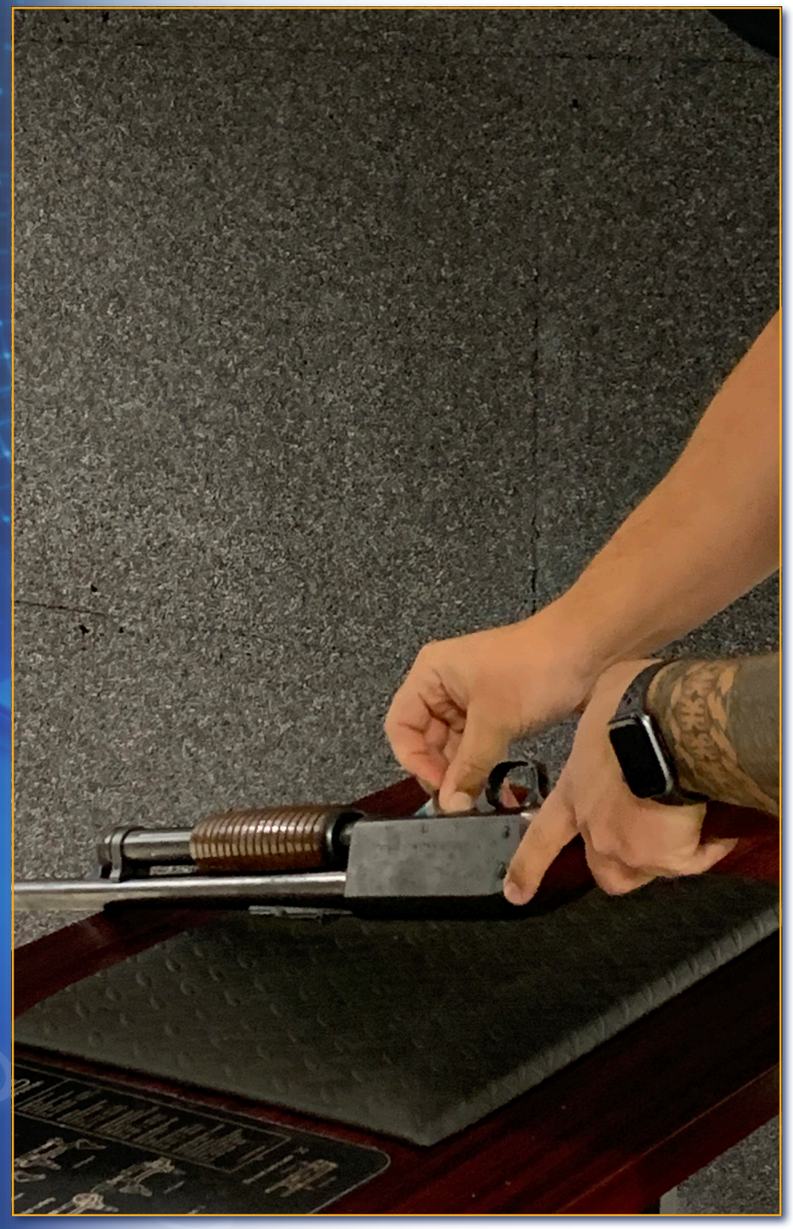
In addition, this new technology will allow examiners to generate a 3D topographical profile of fired bullets and cartridge cases. An algorithm can then be used to compare the profiles of multiple items, allowing examiners to evaluate the similarity of items and calculate the likelihood the markings were created by the same source. And, for the first time, firearms comparisons will potentially have statistical data to support conclusions. HFSC's firearms section is currently working on a research study in collaboration with the Center for Statistics and Applications in Forensic Evidence that compares results from 3D technology to those generated from standard comparison methods.

Validation studies and further research will need to take place for 3D microscopy to become part of standard casework and for statistics to be applied to conclusions.

"The firearms section is excited to be able to participate in the research that will form the future of forensic firearms identification," said Donna Eudaley, manager of HFSC's firearms section.

Homicides NIBIN and CSU impacted by rising crime

Homicides increased by some 40 percent in 2020, a trend that appears to be continuing this year. Much of that can be attributed to gun violence. The rapid rise in violent crime is impacting the crime lab, especially the crime scene unit and the team that processes guns for upload into the national database.



The Houston Forensic Science Center's crime scene unit and the staff that upload images into the ATF-run firearms database are struggling to keep up with a nearly 40 percent increase in homicides, much of it the result of gun violence.

The trend that started in mid-2019 and picked up speed in 2020 is continuing so far this year. By April 20, according to FBI data, Houston reported 124 homicides compared to 94 during the same time in 2020, a 32 percent increase.

And while the impacts to the community and to other parts of the justice system _ such as law enforcement _ are clear, the affect this type of rapid increase in violent crime can have on a forensic lab often remains hidden or goes unnoticed.

At HFSC, the crime scene unit and the team that handles entries into the National Integrated Ballistic Information Network (NIBIN) have been most impacted, though how that looks differs.

"Unfortunately, the crime lab can often be the part of the justice system that is forgotten, but when crime increases this rapidly we are just as impacted _ if not even more so at the start _ as other stakeholders," said Dr. Peter Stout, HFSC's CEO and president.

"Depending on how long this lasts, we may need more resources than originally anticipated," he said, noting that for now, HFSC is monitoring the situation and the data to better understand whether this is a momentary blip or an ongoing trend.

The crime scene unit is, of course, most immediately impacted by the increase in homicides since the group responds to scenes. The increase in homicide had an enormous impact on the overall number of scene responses in 2020, but was not the only contributor to the rapid rise in the group's workload.

"We are seeing more and more vehicles brought to the VEB for processing and that is forcing us to rethink our processes, work distribution and even managerial distribution," said Carina Haynes, CSU's interim director.

For CSU another challenge has been dealing with a large number of trainees not fully authorized for independent casework. The training itself is also a drain on section resources.

Meanwhile, data collected by the Houston Police Department and the FBI point to a significant rise in gun-related crime, and that has had a direct impact on the NIBIN team.

In December, the group received a nearly record breaking number of guns _ 603 _ and hoped it would be an anomaly. But the upward trend that started more than a year ago hasn't really slowed.

"While the exact number of guns may go up and down some each month, the overall trend the past couple of years has been up, up, up," said Donna Eudaley, HFSC's firearms manager.

The group is also under an ATF-mandated time crunch that requires them to issue reports within five days of receiving a gun.

"The pressure on this team is intense, but for now, they are keeping up and have maintained a less than five-day turnaround time throughout the pandemic," Ms. Eudaley said. "But I'm not sure how long this will last and I am keeping a close eye on our resources and on the stress this is creating for staff."

Stress and also the trauma that can be associated with responding to so many back-to-back homicides is a major concern, and maybe even the top concern, in crime scene.

"These folks have no time to decompress between horrific scenes and I am really worried about their mental well being," Dr. Stout said. "We are working, and will continue to work, to find more and varied resources for CSU and others."

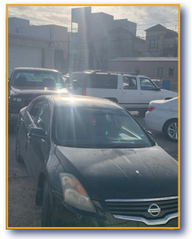
Vehicle examination requests skyrocket

Requests to process vehicles increased over 30% in 2020

The Houston Forensic Science Center's crime scene unit processed 32 percent more vehicles in 2020 compared to 2019 and nearly 39 percent more than in 2018, a trend that is so far continuing.

HFSC's crime scene investigators collect evidence, such as latent prints and DNA, from vehicles that may be part of a crime scene or crime scenes themselves. The evidence collected from these cars can be crucial to an investigation and the documentation, as in all forensic work, can be voluminous and exacting.

The growth in vehicle requests has been accompanied by the significant increase in homicides and violent crimes. Combined, the crime scene unit completed 1,554 requests in 2020 compared to 1,187 in 2019, a 30 percent increase.



"The unit, which has always been way under-resourced to properly serve Houston's needs, is now truly stretched to the limit," said Dr. Peter Stout, HFSC's CEO and president.

HFSC has a five-year plan to expand the crime scene unit by adding six CSIs annually. This plan would double the unit's size _ to nearly 70 staff _ by 2026.

"And that is still about half what the city needs if it wants professionally trained crime scene investigators responding to property crimes and other lower-profile incidents," Dr. Stout said.

At the moment, CSU regularly responds to homicides, officer-involved shootings, death investigations and child deaths. The group responds to less than 1 percent of aggravated assaults and even fewer sexual assaults.

"If you are stabbed, raped or beaten in this city and don't die professional crime scene investigators will almost definitely not be the ones collecting the evidence and documenting the scene," Dr. Stout said.

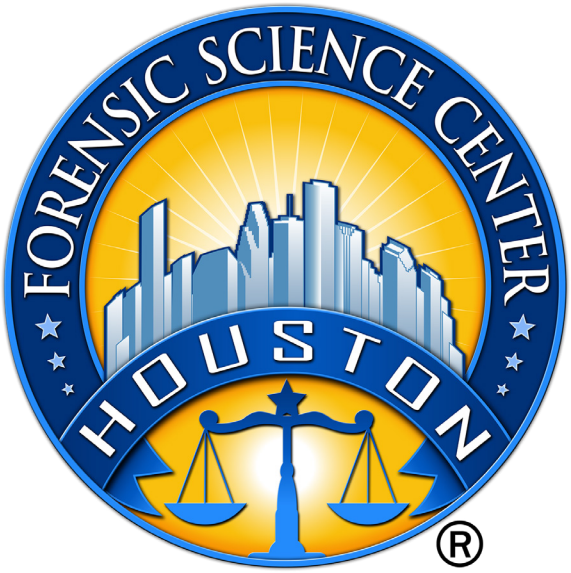
The scene will be processed by law enforcement officers, who do receive crime scene training but generally are better equipped to handle other parts of the investigation that fall more in line with their duties, such as questioning witnesses.

"Unfortunately, as in many other parts of the country, the justice system in Houston and Harris County _ from the forensic lab to law enforcement to the courts _ are so under-resourced that we are expecting police to do things they are not necessarily fully equipped to do," Dr. Stout said.

"This has impacts across the justice system and harms the entire community," he added.

Vehicle examinations are a symptom of that problem. At the moment, CSU struggles to complete their processing before a search warrant expires and even after a federally-funded renovation of the facility, cars are often parked outside the bays awaiting processing, potentially increasing the risk of a loss of evidence.

HFSC's crime scene unit has seen requests for vehicle processing increase 39 percent since 2018 and the trend continues this year. As of April 26, the unit had processed 247 cars compared to a total of 649 in all of 2020. This trend follows the overall increase in violent crime, especially homicides, in the past year. CSU struggles at time to collect evidence and document the vehicles before search warrants expire. The current facility, even after a nearly $160,000 federally funded renovation, is not large enough to house all the vehicles and some are left outside, risking loss of evidence.



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