DNA results in 90
minutes. 
Every investigator, 
prosecutor and 
forensic laboratory’s 
dream. So what could 
possibly go wrong? 
As Houston and Texas 
recently learned, quite a bit.

Like with any new technology, 
there are challenges with the use of rapid 
DNA and if the rollout is not careful, 
considered and cautious the outcomes can 
be disastrous.

“My fear is that because of some of 
the mistakes that have been made in Texas, 
and as a result of the vendors’ aggressive 
marketing, we may lose an opportunity 
to adopt rapid DNA technologies that 
offer great potential,” said Dr. Peter Stout, 
HFSC’s CEO and president.

“The problem is not as much with 
the instrument itself and the analysis it 
does, but rather with everything outside 
the box: evidence handling and disclosure 
requirements.”

The Texas Forensic Science 
Commission sent a letter in June to ANDE, 
one of two rapid DNA manufacturers, 
telling it to stop work in the state unless it 
is completed in an accredited laboratory.

“At this time, the Commission respectfully requests ANDE cease any 
project in Texas involving the use of its 
rapid DNA technology on evidentiary 
samples unless such project is performed 
in collaboration with an accredited CODIS 
laboratory such as Texas DPS, HFSC, 
the Harris County Institute of Forensic 
Sciences and other similar laboratories,” 
the letter stated.

The stern letter followed a series of 
questionable actions in Houston, including 
ANDE reaching agreement with Harris 
Health System _ without the knowledge 
of the Harris County District Attorney’s 
Office, the Houston Police Department or 
HFSC _ to swab sexual assault survivors, 
apparently for research.

If swabs with potential DNA 
evidence exist all parties in the justice 
system, including defense, should be 
notified. And some argue, survivors should 
also be notified as part of the consent 
process that the existence of these swabs 
could put a case in legal jeopardy. This is 
especially significant because the ANDE 
instrument consumes the evidence, 
making it unavailable for retesting and 
exacerbating the difficult situation created 
by undisclosed evidence and analysis 
completed outside of an accredited 
laboratory.

Currently, results from rapid DNA 
on crime scene evidence are not eligible for 
upload into the national DNA database. 
So using this testing on that evidence 
risks consuming evidence and producing 
data that must be disclosed, but does not 
contribute to the investigation.

“Rapid DNA and other promising 
new technologies hold real possibilities. We 
have worked for 20-plus years to improve 
how DNA evidence can successfully solve 
cases,” Dr. Stout said. “It would be a travesty 
to jeopardize years of work and the use 
of a new technology by recreating past 
problems and not properly considering 
how to handle all the issues so we can 
 improve justice.”

Rapid DNA: The pros, the cons, the 
challenges and the pitfalls
New technology. It’s sexy and appealing. It takes us to the next level. We all see the potential to do our work faster and relieve bottlenecks across the justice system, including in our laboratories.

But many of the biggest challenges in forensic evidence are not about a lack of technology.

The most common failures are often in documentation, proper handling, contamination, preservation of evidence and the mundane, day-to-day discipline of following procedures.

We are at a point where a host of technologies are poised to move to production scale. Probabilistic genotyping, M-Vac, genetic genealogy, rapid DNA, 3D scanning for firearms, Next-Gen Sequencing, high resolution/accurate mass spectrometry.

All are promising. And all solve some issues and create new challenges.

The most brilliant new technologies can’t fix consumed and damaged evidence.

The risk of forgetting that is not only enormous for the justice system, it also can mean we lose an opportunity _or_ in the best case significantly delay _the_ roll out of these new technologies, such as rapid DNA.

New technologies have implications for the entire system. Everyone has to learn what they new information means and how it fits in entire structure.

ALL of these technologies mean more complex information. ALL remain vulnerable to improper collection, poor documentation and mishandling.

In the end, there is no substitute for considered validation and careful objective evaluation of how best to use promising technology.
Two-thirds of the Houston Forensic Science Center’s staff is operating out of its new downtown facility and attention has turned to constructing and moving the laboratories, a complex operation that will cause weeks of production and operational delays.

“Moving a forensic laboratory, especially one of the five largest in the nation, is no small task,” said Dr. Peter Stout, HFSC’s CEO and president.

“We are trying to consider all scenarios and inform stakeholders of the operational delays they can expect as we complete this complex, but crucial, move. Despite the short-term pain, we know this new lab will allow for more efficient results.”

Construction on the 18th floor of 500 Jefferson, HFSC’s new facility, is underway, where studs, drywall and air conditioning are being installed.

Work has also started in the basement, where HFSC will have a shooting range for its firearms section and an evidence processing area for the crime scene unit.

Already, following dry runs with a wooden mock up, a rigging company successfully suspended the firearm shooting tank under the freight elevator and lowered it into the basement. The large tank had to be put in place so construction could take place around it.

Lab managers, supervisors and designated staff have created a detailed, flexible plan to move lab instruments, equipment and people before the end of the year.

Latent print processing and forensic biology/DNA will be the first to move between October 8 and October 18.

Latent prints anticipates having no capacity for two weeks and operating at reduced capacity for two months.

Forensic biology anticipates being down six weeks and will outsource incoming casework during that time.

Firearms, seized drugs and toxicology will move between November 4 and November 15.

Seized drugs anticipates a reduced capacity for one week and no capacity for two weeks.

Toxicology anticipates alcohol analysis to be down about six weeks.

Drug analysis will be outsourced for eight months beginning in August.

If firearms completes its move in one fell swoop the section expects to be down for one week. The biggest challenge for this group is the installation of the shooting tank.
Ten HFSC staff members traveled to New Orleans in June to participate in CrimeCon, a conference where 3,500 true crime fans gather annually to feed an obsession for all things NCIS, CSI, FBI and forensics.

In the span of three days, the HFSC team interacted with about 400 people, exposing the crowds to the importance of forensic work and educating them about independence.

“The terrifying level of enthusiasm expressed by the convention attendees rubbed off on me. The preparations were intense, but once we got on-site, things went smooth. The overall experience was amazing,” said Patrick Tynan, a seized drugs analyst and one of the 10 people that attended.

HFSC’s mandate from CrimeCon, that paid nearly all expenses, including travel, was to create a complex crime scene so VIP attendees could “collect” evidence, go to the lab to “submit” the evidence for analysis, test the evidence and ultimately figure out whodunnit.

“The goal at events like this is always to share with people the complexity of the work we do and the unique experience that Houston has had,” said Dr. Peter Stout, HFSC’s president and CEO.

The complex story, the brainchild of toxicology technician Brooke Mendenhall, was a bachelorette party gone wrong. Attendees learned about the five people killed at the bachelorette party when they arrived at the pre-brief room.

After getting a few basics, the newly minted “CSIs” entered the scene. By taking photos on their phone, they were able to “collect” evidence to submit to the “crime lab.” Finally, if they found the right evidence _ and submitted it in the right order to preserve its integrity _ they received a special code to analyze the evidence via an interactive website built by Mr. Tynan.

“After months of planning, we finally got to see our complex scene come to life. The people we met enjoyed the challenge and were intrigued about the work we do,” said Adam Whitman, a senior latent print processor.

All 10 staff revealed the answer at a “Big Reveal” session followed by a general session presentation where Dr. Stout talked about HFSC before an audience of about 200 people.

“CrimeCon takeaway captured in one minute: it’s about two things, the right answer at the right time. The right answer late does nobody any good. The wrong answer on time is just as bad,” Rena Knight, an attendee at the general session Tweeted.

The organizers of CrimeCon, an annual conference for thousands of true crime fans, invited the Houston Forensic Science Center to run an all-expenses-paid VIP event at the 2019 event in New Orleans.

By Jordan Benton
Nicole Casarez, an active member of the Houston Forensic Science Center’s board of directors since its inception in 2012 and chairwoman for the past four years, will end her term on June 30.

Dr. Stacey Mitchell, a three-year member of the board and a prominent forensic nurse who is a clinical associate professor at the Texas A&M College of Nursing, will replace Ms. Casarez as chairwoman. “Nicole’s contribution to the board and HFSC is immense and there are no words to thank her for her dedication and support the past few years,” said Dr. Peter Stout, HFSC’s CEO and president. “And while we will all miss Nicole, I look forward to working with Stacey and continuing along this journey with her guidance and wisdom,” Dr. Stout added.

Ms. Casarez’s departure leaves only one member from the original board of directors, Sandra Guerra Thompson. Dr. Mitchell worked with HFSC before she was appointed to the board. Dr. Mitchell was a member of the stakeholder task force created when Houston worked to eliminate its backlog of 6,663 rape kits and participated in a research study into evidence collection and handling.

In addition to the changes to the board’s chair, Anthony Graves, an exoneree who has served on the board for about four years, has also resigned effective June 30.

Mr. Graves spent nearly 20 years in prison, 13 of them on death row, and faced two execution dates for six murders he did not commit. Mr. Graves was released from prison in 2010 with help from Ms. Casarez, who was a part of his defense team.

HFSC has long had an exoneree on the board and Mr. Graves is being replaced by yet another person who was wrongfully convicted, Anna Vasquez.

“Having an exoneree on the board offers unique perspective on the inner workings of the justice system and serves as a constant reminder that there are real consequences to wrong,” Dr. Stout said.

Ms. Vasquez spent 13 years in prison after she and three of her friends, who collectively came to be known as the San Antonio Four, were convicted of a crime that never occurred. Ms. Vasquez, who is director of outreach at the Texas Innocence Project, was released on parole in 2012 and found actually innocent in 2016.

“After spending more than a decade in prison, I feel an obligation to ensure that my story prevents such things from occurring to other innocent people and helps improve the justice system,” Ms. Vasquez said. “Serving on HFSC’s oversight board and helping to ensure it provides quality, objective science is one way to do that.”

Ms. Vasquez’s story is told in the movie Southwest of Salem: The Story of the San Antonio Four.

The board currently has one vacancy.

The 2017 headlines were hard to ignore: Woman accused of staging husband’s murder as suicide.

Tu Thi Huynh called 911 on Feb. 2, 2017 upon discovering her husband dead in their home.

The next day investigators arrested Huynh, a nurse and mother, on murder charges.

However, there was little to no hard evidence backing the arrest. In the end, it was the gun delivered to HFSC that led to the truth.

Investigators submitted the 12-gauge shotgun to HFSC for firearms examination, convinced it wasn’t possible for Huynh’s husband, Steven Hafer, to commit suicide with that firearm.

Investigators wondered if a shotgun could be extracted from the pump-action shotgun without someone manually cycling_ or ejecting the spent shot shells _ the firearm’s pump action. This was the key to determining whether Hafer could have killed himself with that shotgun.

Firearms examiner Ryan Hookano test fired the shotgun several times while holding it at his shoulder, but this wasn’t the only way the shotgun could have been used.

To safely fire the shotgun in different positions, Mr. Hookano used a remote firing device. This device secures the firearm so the shooter can remain safe in what would otherwise be a compromising position. Ms. Huynh tied a string around the trigger to fire the weapon while he remained behind a blast shield. Mr. Hookano fired 13 shots in this manner. He determined the pump action had partially opened in 10 of the 13 shots, almost completely in one shot and that one shell completely ejected without manually cycling the action.

The pump-action shotgun could open without manipulating the pump. Mr. Hookano released his findings on March 2, 2017.

The Medical Examiner’s office ruled the death a suicide shortly after and charges against Huynh were dropped on April 4, the right answer at the right time.

“Whatever first impressions may be, ultimately decisions are based on the evidence,” David Mitcham, the trial bureau chief at the Harris County District Attorney’s Office, told KTRK-TV ABC13.
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