

Testimony of Sandra Guerra Thompson
House Judiciary Committee
Subcommittee on Crime, Terrorism, Homeland Security, and Investigations Hearing
“To examine the state of forensic science in the United States”
March 28, 2017

Thank you, Chairman Gowdy, Ranking Member Jackson Lee, and members of the Subcommittee. My name is Sandra Guerra Thompson, and I am the Alumnae College Professor of Law and the Director of Criminal Justice Institute at the University of Houston Law Center where my scholarship focuses on criminal law topics such as forensic science and eyewitness identification testimony, and wrongful convictions, among other topics. Prior to joining the University of Houston, I served as a prosecutor at the trial and appellate levels in the Manhattan District Attorney’s Office. This diverse legal experience supports my work as the Vice Chair of the Board of Directors of the Houston Forensic Science Center (HFSC).

My remarks today are informed largely by my work in Houston and the extensive national research I have done in writing a book, *Cops in Lab Coats: Curbing Wrongful Convictions with Independent Forensic Laboratories*, published in 2014 by Carolina Academic Press. In the early 2000s, the Houston Police Department Crime Laboratory was dubbed the “worst crime lab in the country” by the *New York Times*,¹ and deservedly so. Today, that laboratory no longer exists, replaced instead by the Houston Forensic Science Center. The HFSC operates independently of law enforcement and in a fully transparent manner. It is overseen by a board of directors of community volunteers, of which I am one. Today the laboratory serves as a national model, pioneering cutting-edge practices in forensic science. I believe these efforts can make a valuable contribution to national discussions about the future of forensic science in the United States, and I thank the Subcommittee for providing me the opportunity to speak with you today.

The Costs of Forensic Science Failures

The story of how Houston took a failed lab and turned it into a national model begins with the story of George Rodriguez, who was sentenced to 60 years in prison for a 1987 crime he did not commit. His sexual assault conviction was based largely on serology evidence and hair analysis, both of which were botched. In 1987, even the most seasoned defense attorneys would have been loath to challenge a crime laboratory’s findings. Judges and attorneys typically do not have a science education and rely on the reports and testimony of forensic examiners to explain the results of a test. George’s attorneys did not contest the evidence in his case and, at the age of 26, George was headed to a Texas maximum security prison in Tennessee Colony, Texas, where he would probably die before his release date at the age of 86. His hard-working family of limited means was unable to drive the nearly 350 miles roundtrip to visit him from Houston, and loneliness pervaded much of George’s time in prison.

George’s luck finally changed in 2001 when the Innocence Project took on his case. A judge ordered DNA testing on the remaining evidence in the case in 2002, but the HPD Crime Laboratory mishandled the re-testing. That same year, the lab was shut down after an

¹ Adam Liptak, Worst Crime Lab in the Country – Or is Houston Typical?, N.Y. Times, March 11, 2003, available at <http://truthinjustice.org/suttondna.htm> (last accessed, March 23, 2017).

independent audit raised questions about the integrity of the laboratory's work in thousands of cases. Because the hair evidence was mishandled, subsequent laboratory re-testing could only reveal the maternal genetic line of the real perpetrator and could not definitively identify the man who committed this horrific sexual assault of a 14 year old girl. George, however, was definitively excluded from all the DNA evidence. After many twists and turns, 17 years in prison, and one year on bail awaiting the court's final decision, George's conviction was finally vacated, and his innocence was affirmed.

As a former prosecutor and having overseen HFSC's elimination of its rape kit backlog of over 6,000 kits, George's case serves as a constant reminder for me of the reasons why we have strived to improve forensic science. HFSC has committed to the people of Houston that it will provide a 30-day turnaround on sexual assault kit testing. When forensic science fails us, not only are innocent people imprisoned, but the real perpetrators remain free. The true culprit who committed the crime for which George was wrongfully convicted was never brought to justice because the evidence in the case was mishandled. We will never be able to provide true justice for the young woman who was assaulted.

Because forensic science carries the powerful mantle of science in the courtroom, it bears tremendous weight in court. From George's case you can see that when forensic science is misapplied, it has the power to wrongfully convict innocent people. His is one of many, many such cases. Good science applied reliably, however, has the power to provide freedom, as it has done in every one of the 349 DNA exonerations in the United States.

The crisis in the Houston Police Department Crime Laboratory meant that four-hundred and seven DNA cases and 5,000 to 10,000 serology cases required a retrospective review. The HPD Laboratory hired an outside auditor, former Department of Justice Inspector General Michael Bromwich, to conduct a comprehensive, independent investigation of the entire laboratory in 2005. After Bromwich completed his audit, another DNA section scandal erupted in 2007,² followed by a shutdown of the fingerprint unit for poor training and lack of competency.³ I am grateful that after each incident, the City of Houston brought in an independent outside auditor to conduct a review, for without those reviews, key evidence in violent crimes would not have been properly analyzed and the perpetrators of those crimes identified. However, the audits, remediation, and outsourcing of testing while the laboratory was rebuilding cost Houston tens of millions of dollars. Our city could not continue to endure these continuing forensic science disasters, and the city's leadership knew something had to change.

A Path Forward

In 2009, the National Academies of Sciences published *Strengthening Forensic Science in the United States: A Path Forward*⁴ which provided unexpected guidance for a new solution. Not surprisingly, the NAS Report recommended increased federal financial support, but it also made clear that increasing budgets alone would not solve the structural problems inherent in the

² Steve McVicker, *HPD's Crime Lab Faces Proficiency Test Inquiry*, Hous. Chron., Oct. 5, 2007.

³ Moises Mendoza and Bradley Olson, *Major, costly overhaul likely in HPD fingerprint unit*, Hous. Chron., December 1, 2009.

⁴ National Research Council, *Strengthening Forensic Science in the United States: A Path Forward* (National Academies Press: 2009) (hereinafter "NAS Report").

practice of forensic science.⁵ We knew this to be true in Houston, for no amount of money seemed to cure the HPD Crime Laboratory's ills. The NAS Report made repeated calls for the independence of forensic laboratories.⁶ Independence would extricate managers and analysts from any possible pressures from law enforcement, allowing them to work in a more purely scientific environment. This independence would reduce the influence that creates motivational bias and unconscious cognitive biases. Independent forensic laboratories would also be better positioned to obtain adequate funding, whereas crime laboratories constantly compete within police departments against other seemingly more pressing police priorities.

Furthermore, police administrators may not have the appropriate expertise to supervise a scientific laboratory. The HPD is an excellent police department in a major city, but the operation of a scientific laboratory is fundamentally different from the other law enforcement responsibilities. The truth is simple: One cannot properly supervise what one does not fully know and understand. In Houston, we saw the problem and instead of applying another "fix," we decided to reinvent our crime laboratory.

After considerable collaboration and negotiation, Mayor Annise Parker, Houston Police Chief Charles McClelland, and Police Officer Union head Ray Hunt committed to the formidable task of disentangling forensic science services from the police department and creating an entirely new entity: the HFSC. The HFSC is the only crime laboratory in the country run as a local government corporation. Under Texas law, a local government corporation is an independent business entity with its own directors, officers, and employees.⁷ The board has comprised a diverse group of experts in law, business management, law enforcement, laboratory practice, and the judicial system. HFSC is also supported by a Technical Advisory Group of scientists who advise the board on scientific matters. The Technical Advisory Group is also diverse in including both university scientists as well as forensic practitioners covering all of the disciplines practiced by the HFSC. In this way, the diversity of expertise mirrors the manner in which the National Commission on Forensic Science is comprised. The Board hired Dr. Daniel Garner, a forensic DNA scientist with expertise in establishing and improving forensic science laboratories. What began as seeds of an idea in 2011 culminated in the rebirth of forensic science in Houston. The HFSC began operations on April 3, 2014.

The Road Less Traveled

The mission of HFSC is "to receive, analyze and preserve physical and digital evidence while adhering to the highest standards of quality, objectivity and ethics." Our objectives to meet that mission include:

- To provide quality analytical, comparative and digital examinations.
- To meet or exceed all standards necessary to maintain international accreditation.
- To monitor and ensure the timely generation of accurate reports.
- To enhance HFSC's scientific and technical capabilities.

⁵ NAS Report at 78-79.

⁶ NAS Report at 16, 18-20, 23-24, 79, 183-84.

⁷ Tom Allen, FAQ, Houston Forensic Science LGC, INC. (Mar.14, 20120), available at http://www.houstonforensic-science.org/Board%20Meeting%20Files/Minutes/minutes_120620.pdf.

Mayor Parker imagined that HFSC would become a first-class laboratory that could regain public confidence and restore our national reputation. We believe that we have achieved that and have, in fact, become pioneers in forensic science practice. Independence has freed us to exceed standard expectations in the following ways:

- **Improving the underlying science.** A major challenge outlined in the NAS Report is the need to develop a scientific research foundation for most forensic disciplines. Subjective and interpretive forensic disciplines such as fingerprint and firearm examination, while providing extremely valuable information for making definitive class and subclass identifications, have no scientific basis for making statements of a definitive match. In time, forensic disciplines currently lacking a solid scientific foundation may develop precise, measurable standards to test their methods of accuracy and determining error rates. However, such standards do not currently exist across all pattern evidence disciplines. HFSC is doing its part to respond to Recommendation 3 of the NAS Report to assist with research “needed to address issues of accuracy, reliability, and validity in the forensic science disciplines”⁸ by collaborating with researchers at the Center for Statistics and Applications in Forensic Evidence (CSAFE), a forensic science research center established by the National Institute of Standards and Technology (NIST). A number of HFSC staff have also been appointed to the Organization of Scientific Area Committees (OSAC), a forensic science standards setting body supported by NIST. We are proud to contribute to national forensic science standards and even prouder that so many HFSC forensic scientists perform at a nationally recognized level.
- **Beyond Accreditation.** While HFSC has worked hard to achieve accreditation to ISO 17025 standards, accreditation is not the end goal. Accreditation ensures that a laboratory has implemented a quality management system that meets minimal requirements. To meet the promise of Mayor Parker’s desire for a first-class laboratory, we’ve understood that “[a]ccreditation is just one aspect of an organization’s quality assurance program, which also should include proficiency testing where relevant, continuing education, and other programs to help the organization provide better overall services.”⁹ To this end, HFSC has become the first crime laboratory in the nation to implement blind proficiency testing across five of its seven accredited disciplines. Blind proficiency testing is recommended but not required by accreditation standards.¹⁰ While the national conversation focused on encouraging laboratories to undergo rigorous proficiency testing,¹¹ HFSC had implemented the most rigorous form of proficiency testing of all in its toxicology, controlled substances, firearms/toolmarks, DNA, and latent print sections.¹² It is one of only two forensic labs in the world known to use such blind quality assurance. HFSC also engages in a practice of radical transparency.¹³ All aspects of the laboratory that can be made publicly available can be found on the lab’s

⁸ NAS Report at 22-23.

⁹ NAS Report at 195.

¹⁰ NAS Report at 207.

¹¹ Justice.gov, “Recommendation to the Attorney General: Proficiency Testing,” National Commission on Forensic Science, approved December 9, 2016, available at <https://www.justice.gov/ncfs/page/file/905566/download>.

¹² HoustonForensicScience.org, *Press Release: HFSC Begins Blind Testing in DNA, Latent Prints, National First*, November 17, 2016, available at <http://www.houstonforensicscience.org/news/582deb61MXGC3and%20LP.pdf>.

¹³ See the HFSC Discovery and Public Records library at <http://www.hfscdiscovery.org/>.

website. Not only are HFSC board meetings video archived and documented with minutes, but the laboratory's quality management, contracts, policies, validation tests, and protocols are all posted. Uniquely, HFSC also posts its audits, reviews, and corrective action reports. We believe that transparency not only holds us accountable to the public, but it also destigmatizes error and allows us to learn from challenges that arise.

- **Ensuring justice with cutting edge practices.** In addition to laboratory practices designed to improve quality, HFSC has implemented policies and protocols to ensure justice. Faced with a significant sexual assault kit (SAK) backlog, HFSC sought a National Institute of Justice grant to conduct an "action-research" project to reduce SAK backlog in Houston¹⁴ involving multiple stakeholders to diagnose the root causes of our backlog and to identify appropriate responses. With a goal of improving responses to sexual violence by enhancing services for victims and holding offenders accountable, HFSC tested 6,600 SAKs gained 850 CODIS hits. Charges were filed against 29 people, six of whom have been convicted.¹⁵ In addition to these public safety results, the project resulted in creating more efficient systems for processing SAKs and protocols to support victims through the testing process.

Recently, there has been a national spotlight on the use and consequences of unreliable roadside drug field tests.¹⁶ Houston was able to reveal wrongful convictions and the degree of discrepancy between field test results and laboratory confirmatory testing because its Controlled Substances Manager James Miller believed that all evidence deserves testing, regardless of how a case was adjudicated. 119 convictions have been overturned, and Harris County now has a policy that prohibits plea deals in drug-possession cases unless HFSC has issued a report.¹⁷

HFSC is proud that it has exceeded expectations and occupies a unique space in the forensic science system. One way we know we are successful is that criminal justice stakeholders in other cities are now calling for independence in the wake of other crime laboratory failures.¹⁸ We hope that our experience offers others inspiration to do things differently and provides a roadmap for progress.

The Future of Forensic Science

In my book, I discuss the resistance of law enforcement to independence. While Houston has done its part to meet that concern of the NAS Report, the forensic science community has suffered a setback at the national level. Initially, I had high hopes for forensic science

¹⁴ See the Houston Sexual Assault Kit Research site at <http://houstonsakresearch.org/>.

¹⁵ Associated Press, *Hundreds of DNA matches found as Houston clears rape kit backlog*, Al Jazeera America, February 24, 2015, available at <http://america.aljazeera.com/articles/2015/2/24/850-dna-matches-as-houston-clears-rape-kit-backlog.html>.

¹⁶ See ProPublica's *Busted* series at <https://www.propublica.org/series/busted/>.

¹⁷ Ryan Gabrielson and Topher Sanders, *How a \$2 Roadside Drug Test Sends Innocent People to Jail*, available at https://www.nytimes.com/2016/07/10/magazine/how-a-2-roadside-drug-test-sends-innocent-people-to-jail.html?_r=0.

¹⁸ Katie Hall, *Local officials, lawyers: To fix DNA lab's woes, break away from police*, Austin American Statesman, October 19, 2016.

improvement at the federal level. The Department of Justice (DOJ) and NIST signed a Memorandum of Understanding to partner on the creation of the NCFS and the OSAC.¹⁹ Since forensic science stands at the intersection of science and law, it was promising to see that forensic science standard-setting would be housed in the agency that owns that scientific area of expertise (NIST); and that policymaking efforts would fall under a diverse advisory body overseen by a partnership of NIST and DOJ. However, it was disheartening to see the response of DOJ and the National District Attorney Association (NDAA) to the findings of the the President’s Council of Advisors on Science and Technology in their report, *Forensic Science in Criminal Courts: Ensuring Scientific Validity of Feature-Comparison Methods* on September 20, 2016.²⁰ The report that made recommendations to improve the underlying science of forensic feature-comparison disciplines, the application of evidence in criminal cases by the DOJ, and its treatment by the judiciary. The responses dismiss the existence of any scientific issues to be addressed and reject the report’s recommendations. This is troubling because if a panel of the nation’s finest scientists identified scientific problems with forensic science disciplines, echoing another panel of scientists (NAS Report), then surely there is some reflection to be done. Forensic science is the application of concepts from a broad array of research fields. It is separate and apart from those disciplines only in the sense that its work product must also conform to rules of law. The science, however, abides by the same principles regardless of the setting. Indeed, the NAS Report foresaw this concern:

There was also a strong consensus in the [NAS] committee that no existing or new division or unit within DOJ would be an appropriate location for a new entity governing the forensic science community. DOJ’s principal mission is to enforce the law and defend the interests of the United States according to the law... The entity that is established to govern the forensic science community cannot be principally beholden to law enforcement. The potential for conflicts of interest between the needs of law enforcement and the broader needs of forensic science are too great.²¹

Understanding the practicalities of running a laboratory, I make the following recommendations for the Subcommittee to consider as it deliberates improving the state of forensic science:

1. **Create opportunities for scientific independence.** It’s important to note that independence does not mean exclusion. The DOJ has a critical role in the “forensic” aspect of forensic science, and it does not lose influence by making room for science

¹⁹ Memorandum of Understanding Between the Department of Justice and the National Institute of Standards and Technology in Support of the National Commission on Forensic Science, signed by Attorney General Eric H. Holder and NIST Director Patrick Gallagher in March 2013.

²⁰ Gary Fields, *White House Advisory Council Report Is Critical of Forensics Used in Criminal Trials*, Wall Street Journal, September 20, 2016, available at <https://www.wsj.com/articles/white-house-advisory-council-releases-report-critical-of-forensics-used-in-criminal-trials-1474394743>; NDAA.org, *Press Release: National District Attorneys Association slams President’s Council of Advisors on Science and Technology report*, September 2, 2016, available at <http://www.ndaa.org/pdf/NDAA%20Press%20Release%20on%20PCAST%20Report.pdf>; FBI.gov, *FBI PCAST Response*, September 20, 2016, available at <https://www.fbi.gov/file-repository/fbi-pcast-response.pdf/view>.

²¹ NAS Report at 17.

agencies to play their leadership roles. On the contrary, forensic science is stronger when it is informed by a diverse set of experts because the field is itself an amalgam of diverse areas of expertise. The scientific aspects of forensic science must be led by science agencies and protected from politics as much as possible. The Subcommittee can support opportunities for science and law enforcement to co-exist – such as the NCFSS – and for science and law enforcement to support forensic science in its relevant domains.

2. **Provide support for crime laboratories and medical examiner offices.** Although funding alone is insufficient for progress, it is certainly a baseline need. Federal financial resources are critical for crime laboratories and medical examiners offices to have adequate resources to purchase equipment, hire examiners to keep up with the demands of their jurisdiction, for training these new examiners, continuing training and education for current staff (especially as new standards for different techniques come online), and to ensure a stable and predictable baseline of funding for crime laboratories to facilitate public safety. Even in a city like Houston, where the laboratory has been an investment for our Mayors, we must still deal with the impacts of budget shortfalls or fiscal challenges due to unpredictable events, such as Hurricane Katrina.
3. **Support the engineering of reliable, systematic processes in the practice of forensic science.** While there is undoubtedly much research to be done to support the underlying scientific bases for some forensic disciplines, another area in need of attention is the development of reliable processes. Even in disciplines such as DNA where the science is beyond dispute, there are fundamental challenges that remain. It is a daunting task to ensure that analysts get the right sample in the right tube with the right test, reliably for hundreds of thousands of times of operations per year.
4. **Encourage a culture of transparency as a tool for accountability.** Errors are expected in any human endeavor. Historically, the forensic science community has seen errors as the most severe offense, but they are not. Forensic scandals occur not from the advent of an error, but the accumulation of errors in darkness. Transparency brings errors to light more quickly and prevents “scandals” by identifying and remediating errors before they grow into something overwhelming. Transparency functions as a low cost accountability tool and provides laboratories with a self-correcting mechanism.

Conclusion

Today, George Rodriguez is free and resides in the Houston area where he lives with his wife, a childhood friend who maintained her faith in his innocence. His wife was concerned that telling his story would force George to relive this painful part of his life, but I believe George shared his story to help ensure that his suffering was not in vain. As this Subcommittee deliberates the needs of the forensic science community, I hope that you will consider George’s story and the stories of countless other exonerees whose cases involved the misapplication of forensic science. We know the forensic science system can be better, and I believe that can be done when both science and justice are nurtured and valued.