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STATEMENT FOR THE RECORD BY THE INNOCENCE PROJECT

HOUSE JUDICIARY COMMITTEE SUBCOMMITTEE ON CRIME, TERRORISM, HOMELAND SECURITY AND INVESTIGATIONS

March 28, 2017 Hearing

“To examine the state of forensic science in the United States”

Thank you, Chairman Gowdy, Ranking Member Jackson Lee, and members of the Subcommittee for holding a hearing on the state of forensic science in the United States. We are grateful that the Subcommittee is turning its attention to the needs of the forensic science community and appreciate your consideration of this statement.

The Innocence Project, affiliated with the Cardozo School of Law, was founded by co-directors Peter J. Neufeld and Barry C. Scheck in 1992. The project is a national litigation and public policy organization dedicated to exonerating wrongfully convicted people through DNA testing and reforming the criminal justice system to prevent future miscarriages of justice. Without advances in forensic science and the development of DNA testing, there would be no Innocence Project.

Public Safety

As Chairman Gowdy stated at the hearing, “[p]ublic safety is the preeminent function of government.” When innocent people are wrongfully convicted, real perpetrators remain at large and public safety is at increased risk. Among the 349 exonerations of factually innocent people we have identified using DNA evidence, 149 true perpetrators of crimes for which innocent people were convicted have been identified. We have been able to confirm that these true perpetrators committed at least 147 additional violent crimes while the innocent people were in custody or prison. The misapplication of forensic science was a contributor to 46% of these DNA exonerations. This statistic serves as a reminder that failures of forensic science can have a significant negative impact on both public safety and the individuals wrongfully convicted of crimes they did not commit.

Costs to Taxpayers

In addition to the monumental personal cost of wrongful convictions to innocent individuals and the erosion of public confidence in the criminal justice system that they generate, wrongful convictions result in a considerable cost to taxpayers and governments. The Better Government Association estimated that Illinois has paid out \$253 million in taxpayer-backed settlements and related costs between 1989 and 2013 for wrongful convictions.¹ These costs do not include more indirect costs, such as the lost wages and the social costs of broken families. It is in the

¹ Kari Lydersen, “Wrongful Conviction Costs Keep Climbing,” BetterGov.org, April 8, 2013.
<http://www.bettergov.org/news/special-investigation-the-high-costs-of-wrongful-convictions>



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government's interest to make sure that forensic evidence is tested using scientifically sound methods and is accurately reported and presented.

Due to the criminal justice system's significant dependence on forensic evidence, the misapplication of forensic science has a unique capacity to touch a high volume of cases. Corrective actions, such as retrospective reviews of forensic science errors, may involve tens of thousands of cases, creating additional costs and straining resources. For instance, in Massachusetts, misconduct by a single drug analyst who "drylabbed" (i.e., reported on tests that were not conducted) drug evidence has tainted over 24,000 cases, most of which will be vacated by mid-April.² In Texas, the state's Forensic Science Commission is conducting a statewide review of cases in which DNA mixtures may have been interpreted using erroneous population statistics supplied by the Federal Bureau of Investigation (FBI).³ There was no misconduct in this case, but rather, as the Texas Department of Public Safety explained, "DNA analysis is a developing science and as standards change, so do the ones used at the state crime labs."⁴ As a result of these improved standards, prosecutors are reviewing 24,468 laboratory tests to evaluate cases for retesting.

The Federal Bureau of Investigation's (FBI) review of agent testimony and reporting of microscopic hair comparison analysis is another example of the potential magnitude of problems that may be found in forensic science. After reviewing testimony used to inculcate the defendant in 268 trials, the FBI conceded that 26 of its 28 agent examiners, who testified in 41 states, gave erroneous testimony in at least 90% of the cases. Over 25 years, the FBI trained hundreds of state and local hair examiners to testify using this same approach.⁵ These state and local examiners then passed on what they learned to their colleagues. For this reason, at least seven states or localities

² Shawn Musgrave, "DAs say Dookhan drug-tampering case nearing an end," Boston Globe (Boston, MA), March 25, 2017, <http://www.bostonglobe.com/metro/2017/03/25/most-drug-cases-handled-former-state-chemist-annie-dookhan-have-been-vacated-case-nears-end/yfa6MU9P8HLdA3irE4tgnM/story.html>

³ Texas Forensic Science Commission, "Texas DNA Mixture Interpretation Case Review," FSC.Texas.gov, accessed March 31, 2017, <http://www.fsc.texas.gov/texas-dna-mixture-interpretation-case-review>

⁴ Terri Langford, "New Crime Lab Protocol Leads to Reviews of "Mixed DNA" Evidence," TexasTribune.org, September 12, 2015, <https://www.texastribune.org/2015/09/12/new-crime-lab-protocol-forcing-review-dna-evidence/>

⁵ FBI, "FBI Testimony on Microscopic Hair Analysis Contained Errors in at Least 90 Percent of Cases in Ongoing Review," FBI.gov, accessed March 31, 2017, <https://www.fbi.gov/news/pressrel/press-releases/fbi-testimony-on-microscopic-hair-analysis-contained-errors-in-at-least-90-percent-of-cases-in-ongoing-review>



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within states (California,⁶ Iowa,⁷ Massachusetts,⁸ North Carolina,⁹ Texas,¹⁰ Washington, DC,¹¹ and Virginia¹²) are now conducting their own reviews.

Role of Science

It has been more than 10 years since Congress brought attention to the needs of forensic science through its 2005 authorization of the review by the National Academy of Sciences.¹³ This review led to the 2009 report, *Strengthening Forensic Science in the United States: a Path Forward*.¹⁴ One of the important recommendations of this report was the need for foundational research into the validity and reliability of many forensic science disciplines.¹⁵

The 2016 President's Council of Advisors on Science and Technology (PCAST) report builds on the NAS findings, reiterating the need for this type of research as the underpinning for any kind of scientific method.¹⁶ The PCAST report does not call upon courts to reject scientifically reliable evidence – indeed, if the evidence is valid and reliable, it should be admissible. Nor does the PCAST report attempt to usurp the role of the judiciary. Rather, the PCAST report reinforces the judge's gatekeeping role, and calls upon courts to use scientifically-based criteria in their evaluation of forensic evidence. The definitions and criteria used (e.g., the need for empirical measurements of error rates; blinding of study participants; use of representative samples;

⁶ Bureau of Justice Assistance, "California Hair Microscopy Case Review," OJP.USDOJ.gov, accessed March 31, 2017. <https://external.ojp.usdoj.gov/selector/awardDetail?awardNumber=2016-FA-BX-0005&fiscalYear=2016&applicationNumber=2016-H0994-CA-FA&programOffice=BJA&po=BJA>

⁷ William Petroski, "Branstad: State will investigate wrongful convictions," Des Moines Register (Des Moines, IA), October 26, 2015. <http://www.desmoinesregister.com/story/news/politics/2015/10/26/branstad-announces-plans-wrongful-conviction-division/74621090/>

⁸ Karen Anderson, "State launching review of convictions to find faulty hair forensics," WCVB.com (Boston, MA), May 14, 2015, accessed March 31, 2017. <http://www.wcvb.com/article/state-launching-review-of-convictions-to-find-faulty-hair-forensics/8222418>

⁹ Observer Editorial Board, "The FBI's flawed forensics history," Charlotte Observer (Charlotte, NC), April 20, 2015. <http://www.charlotteobserver.com/opinion/editorials/article19080720.html>

¹⁰ Texas Forensic Science Commission, "Hair Microscopy," FSC.Texas.gov, accessed March 31, 2017. <http://www.fsc.texas.gov/hair-microscopy>

¹¹ Seth Augenstein, "Hair Analysis Review: Dozen States Looking at Criminal Cases," ForensicMag.com, January 6, 2017. <http://www.forensicmag.com/news/2017/01/hair-analysis-review-dozen-states-looking-criminal-cases>

¹² *Ibid.*

¹³ National Research Council. 2009. *Strengthening Forensic Science in the United States: A Path Forward*, at 1, Washington, DC: The National Academies Press. doi:<https://doi.org/10.17226/12589>. (Hereafter, NAS Report).

¹⁴ *Ibid.*

¹⁵ *Ibid.*, See, e.g., Recommendation 3, pages 22-23: "Research is needed to address issues of accuracy, reliability, and validity in the forensic science disciplines"....including "studies establishing the scientific bases demonstrating the validity of forensic methods" and "The development and establishment of quantifiable measures of the reliability and accuracy of forensic analyses."

¹⁶ President's Council of Advisors on Science and Technology, "Forensic Science in Criminal Courts: Ensuring Scientific Validity of Feature-Comparison Methods," Office of Science and Technology Policy, September 20, 2016. <https://obamawhitehouse.archives.gov/blog/2016/09/20/pcast-releases-report-forensic-science-criminal-courts> (Hereafter, PCAST Report).



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replication of results) are neither vague nor arbitrary; rather, they are well-established in science and medicine.¹⁷

The PCAST report, however, does dispel the notion that a court's assessment of legal admissibility of a type of forensic evidence should be viewed as proof of its scientific validity. The use of bitemark analysis as evidence of identification has been discredited by numerous scientific studies and reports.¹⁸ Since 2000, DNA evidence has exonerated 21 people whose convictions and 7 people whose indictments had been secured through the use of bitemark comparison evidence,¹⁹ two scientific panels have questioned the reliability of this evidence,²⁰ and the Texas Forensic Science Commission has recommended a moratorium on the use of bitemark evidence in criminal courts until its validity and reliability can be established.²¹ The fact that bitemark evidence nonetheless continues to be admitted in U.S. criminal courts underscores why legal precedent should not be confused for scientific fitness, nor should a previous history of admission be the principal argument for the use of a class of scientific evidence.

Judges are not scientists, nor should we expect or force them to be. Rather, in evaluating the role of a piece of evidence in a particular case, we need to provide judges with the best information possible. Justice Stephen Breyer wrote in the introduction of the Federal Judicial Center's *Reference Manual on Scientific Evidence*, "In this age of science we must build legal foundations that are sound in science as well as in law. Scientists have offered their help. We in the legal community should accept that offer."²²

The Role of Government

The federal government has a significant role in supporting forensic science for two reasons. First,

¹⁷ See, for example, the Cochrane Collaborative criteria for evaluation of diagnostic testing, in which a test is used to determine the presence or absence of a disease (e.g., a type of cancer). This type of endeavor presents issues and challenges similar to those of a forensic test used to determine inclusion or exclusion of an individual: Reitsma JB, Rutjes AWS, Whiting P, Vlassov VV, Leeflang MMG, Deeks JJ., Chapter 9: Assessing methodological quality. In: Deeks JJ, Bossuyt PM, Gatsonis C (editors), *Cochrane Handbook for Systematic Reviews of Diagnostic Test Accuracy* Version 1.0.0. The Cochrane Collaboration, 2009. last accessed January 4, 2017.

<http://srdta.cochrane.org/> and from

http://methods.cochrane.org/sites/methods.cochrane.org.sdt/files/public/uploads/ch09_Oct09.pdf

¹⁸ Recently reviewed in Michael J. Saks et al., "Forensic bitemark identification: weak foundations, exaggerated claims," *J Law Biosci* 3(3) (2016):538-575. <https://academic.oup.com/jlb/article/3/3/538/2544494/Forensic-bitemark-identification-weak-foundations>

¹⁹ Innocence Project, "Statistical Analysis of Forensic Odontologist Involvement In Cases of Wrongful Bite Mark Convictions and Indictments," Innocence Project.org, accessed April 3, 2017. https://www.innocenceproject.org/wp-content/uploads/2017/01/Description-of-bite-mark-exonerations-and-statistical-analysis_final.pdf

²⁰ NAS Report, at 176; PCAST Report, at 87.

²¹ Texas Forensic Science Commission, "Forensic Bitemark Comparison Complaint Filed by National Innocence Project on Behalf of Steven Mark Chaney – Final Report," FSC.Texas.gov, April 12, 2016, at 15-16. <http://www.fsc.texas.gov/sites/default/files/FinalBiteMarkReport.pdf>

²² National Research Council. 2011. *Reference Manual on Scientific Evidence: Third Edition*. Washington, DC: The National Academies Press. doi:<https://doi.org/10.17226/13163>, at 9. (Hereafter, *Reference Manual*).



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there are activities that only the federal government can support effectively and efficiently. Funding forensic science research and developing a federal forensic science research strategy is a national responsibility. States may only be able to provide small research grants and would not be able to support large multicenter grants like the Center for Statistics and Applications in Forensic Evidence (CSAFE).²³ Additionally, research funding should be granted by merit and the best researchers in a field may not be located in a particular state. CSAFE, for example, funds the nationally preeminent forensic science statisticians at centers in Iowa, California, Pennsylvania, and Virginia. Second, the federal government has a role in establishing uniform standards and guidance for forensic science. As the DNA review in Texas and the hair comparison reviews across the country illustrate, state and local laboratories take their scientific guidance from the nation's federal laboratories. In order to ensure scientific rigor and sound jurisprudence regarding the application of forensic science in the courts, the Department of Justice (DOJ) and NIST jointly established the National Commission on Forensic Science (NCFS) to recommend policy and NIST established the Organization of Scientific Area Committees (OSAC) to create a registry of forensic science standards and practices. Both bodies were developed in response to the 2009 NAS report,²⁴ which Justice Scalia notably referenced throughout his majority opinion in *Melendez-Diaz v. Massachusetts*,²⁵ in which he cited the following passage:

“The forensic science system, encompassing both research and practice, has serious problems that can only be addressed by a national commitment to overhaul the current structure that supports the forensic science community in this country.”²⁶

Recommendations

We believe that the federal government can support the forensic science community in the following ways that are appropriate to the needs of the criminal justice and forensic science community.

- 1. Fund research and establish a federal forensic science research strategy.** In order to fund transformational research based on merit, research funding must reflect the magnitude of the projects pursued and will necessarily need to cross state lines. At present, forensic science research is scattered throughout the federal agencies and does not always reach the practitioners who need to be served by that research. A federal forensic science research strategy **coordinated by a science agency** can streamline research efforts and assemble relevant federal agencies to pursue established goals. While DOJ clearly has a

²³ Iowa State University, “CSAFE: About Us,” [forensic.stat.iastate.edu](http://forensic.stat.iastate.edu/about-us), accessed March 31, 2017.

²⁴ John M. Butler, “The National Commission on Forensic Science and the Organization of Scientific Area Committees,” Proceedings of the International Symposium on Human Identification (2014).
<https://www.nist.gov/sites/default/files/documents/forensics/Butler-ISHI-Proceedings2014.pdf>

²⁵ *Melendez-Diaz v. Massachusetts*, 129 S. Ct. 2527 (2009).

²⁶ NAS Report, p.1.



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responsibility to fulfil in many aspects of forensic science reform, this scientific role is not within the province of the DOJ; the center of forensic science research policy for the federal government must have an independent, scientific core.

2. **Codify and support forensic science standards setting at the OSAC.** We agree with Dr. Weedn's statement regarding the need to codify the OSAC body at NIST. A legislative process can also provide the forum to discuss how the OSAC can be improved and funded so it is codified in a way that will sustain it scientifically and operationally for the long term.
3. **Renew the NCFS charter.** As the singular mechanism to promote national forensic science discussions, the NCFS has an important and critical role in establishing forensic science policy. The NCFS complements the standards setting work of the OSAC and provides guidance for forensic science service providers through a transparent, multi-stakeholder process that takes full advantage of the experience and expertise that can be provided by other scientific disciplines.
4. **Support operational funding for forensic science service providers.** We agree with Mr. Gamette's concerns regarding the need for operational support for state and local laboratories. In fact, we believe the needs of forensic science service providers exceed support for accreditation activities. While accreditation is a baseline quality management requirement for forensic science service providers, accreditation alone cannot ensure high quality delivery of services, and promoting highly reliable forensic laboratories requires sufficient attention and resources. State and local laboratories are directly affected by the practices of federal laboratories. Therefore, the federal government has an obligation to help state and local laboratories adapt practices to continually evolving science, implement newly issued standards and practices, train forensic scientists on emerging research, and review cases when federal guidance has changed or is retracted. Funding for emergent issues should also be considered as critical problems, such as sexual assault kit backlogs and other current and future systemic stresses that laboratories face.

Conclusion

The years since the publication of the NAS Report have been active and fruitful. We are grateful to the Subcommittee for initiating a discussion regarding the needs of the changing landscape of the forensic science community. In order to cultivate and support the development of forensic science into a mature field, we believe that Congress must continue the momentum created by the NCFS and OSAC to strengthen justice and support laboratories and practitioners by strengthening science. A national commitment of this magnitude will help protect the public, free the innocent, identify true perpetrators, and ensure greater public confidence that forensic evidence used in the criminal justice system is more accurate.



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