CHIMES OF FREEDOM FLASHING: FOR EACH UNHARMFUL GENTLE SOUL MISPLACED INSIDE A JAIL

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** I have known Stephen Schulhofer all my life. Our mothers were best friends since childhood and our families traveled, dined, and debated together for as long as I can remember. As I am eight years his junior, I went through my early life with my mother all too often suggesting I do whatever Stephen had already accomplished. Given his extraordinary achievements, that would be impossible. Stephen graduated summa from Princeton and summa from Harvard Law School, edited the Harvard Law Review, and clerked for Justice Hugo Black upon graduation. Perhaps my first insecurity about a career in law occurred my senior year in high school when I visited Harvard. I had been instructed by my mother to find Stephen at the law school. After several false steps I finally encountered him buried in the stacks, surrounded by endless open volumes, scribbling madly on yellow pads. That was the moment I temporarily eliminated the law from my future plans. Many years later I realized that in addition to being a champion of justice, he's a very nice guy.

INTRODUCTION

The more than 375 post-conviction DNA exonerations, all secured since 1989,[1] confirm with great certainty that the criminal legal system makes serious mistakes, and by design, contributes to erroneous adjudications of guilt. Over the last thirty years, DNA has provided irrefutable proof of innocence and has secured freedom for a significant but small proportion of those who have been convicted of crimes they did not commit.[2] DNA testing of biological evidence stored for more than forty years after the initial conviction produces more reliable outcomes than the original investigation or trial. Further, in half the cases, the new DNA testing not only clears the wrongly convicted, but it also identifies the person who actually committed the crime.[3]

The Innocence Project was founded with a single mandate to use DNA evidence to free the factually innocent who had been wrongly convicted.[4] However, our policy department was not established until more than ten years later. Although the Innocence Project is perhaps best known for its success in freeing the innocent, we came to realize that the most effective means for reducing the risk of wrongful conviction is through systemic policy reform. By 2000, a robust network of ten innocence organizations, had formed across

1. *DNA Exonerations in the United States*, INNOCENCE PROJECT, https://www.innocenceproject.org/dna-exonerations-in-the-united-states/ [https://perma.cc/YA2C-PXSV] [hereinafter *DNA Exonerations in the United States*].

2. *Id.*

3. *Id.*

4. The Innocence Project was founded in 1992 by Barry C. Scheck and Peter J. Neufeld at the Benjamin N. Cardozo School of Law at Yeshiva University, to assist people who could be proven innocent through DNA testing. Now an independent nonprofit organization affiliated with Cardozo, the Innocence Project's mission is nothing less than to free the staggering numbers of innocent people who remain incarcerated and to bring substantive reform to the system responsible for their unjust imprisonment. *About,* INNOCENCE PROJECT, https://www.innocenceproject.org/about/ [https://perma.cc/C4LK-8SRS].

the country, litigating cases of innocence and establishing local presences that would serve our advocacy work to come. By 2002, we had amassed a substantial dataset of DNA-based exonerations, which helped us to determine many of the main contributing factors to wrongful conviction. We then set about identifying prospective reforms that were both evidence-based and, where possible, authenticated through jurisdictional practice.[5]

Thus, a key part of our policy effort has been to change laws, policies, and court rules, procedures and practices to eliminate some of the clear and more obvious pathways to wrongful conviction. Today we work in collaboration with partners in state-based innocence organizations within the Innocence Network,[6] now numbering more than fifty-six domestic groups, with legislatures and the courts to mandate systemic reforms, and with the executive branches of state and local governments and the federal government to secure remediation. Much of our reform agenda has been powered successfully not only through years of scientific research, but also by the extraordinarily compelling experiences of, and advocacy by, exonerated men and women.

We are also dedicated, however, to doing more to leverage the voices of the innocent to make broader and more impactful changes to our criminal legal system, from attacking the volume-based plea system that makes a mockery of due process and other constitutional protections, to addressing and combatting other factors, like racial bias,[7] that plague the criminal legal system from street stops through post-conviction work.

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5. Some people erroneously believe that now that DNA testing is routine, there is no need to develop reforms for improving the reliability of non-DNA evidence. DNA is only present in a small minority of cases and thus whether reviewing old convictions or investigating current crimes, DNA will not be relevant most of the time. *See infra* note 8. But the causes of wrongful conviction are present whether or not DNA is available. Thus, if we are going to meaningfully reduce the risk of an erroneous result, we have to remediate the causes broadly to enhance the accuracy of the overwhelming majority of investigations and adjudications. Hence, an ever-critical role of the innocence movement has been to improve laws, policies, and procedures across the United States.

6. The Innocence Network is an affiliation of 69 organizations from all over the world dedicated to providing pro bono legal and investigative services to individuals seeking to prove innocence of crimes for which they have been convicted and working to redress the causes of wrongful convictions. Currently, the Innocence Network consists of 56 U.S.-based and 13 non-U.S.-based organizations. *About,* INNOCENCE NETWORK, https://innocencenetwork.org/about/ [https://perma.cc/7HAQ-HX8S].

7. *See* Innocence Project, *Human Factors in Wrongful Convictions: Implicit Bias, Psychological Phenomena That Can Lead to Wrongful Convictions*, YOUTUBE (Nov. 19,

In this article, we explore the Innocence Project's policy reform agenda, from its infancy to the present time. First, we begin with a discussion of the broader factors which contribute to false convictions, including how racial bias exacerbates both the reality and frequency of wrongful convictions. Next, we describe the Innocence Project's foundational reforms, which flowed from the identification of the most easily discernible contributing factors to wrongful conviction documented in our early cases. We then describe our advocacy in the states to allow the use of post-conviction DNA testing and move into a discussion of how the Innocence Project was able to use the results of its deconstruction of DNA exonerations to lobby for reforms to improve the quality of evidence. In addition to describing these advocacy efforts to date, we also explore other areas of reform within each of these topics that we will seek to pursue in the future. Finally, we turn to just a few examples of future and aspirational work, some of which is already underway, that we believe will have even broader impact on the criminal legal system by bringing the innocence voice to bear. These areas include exposing and reforming the problem of the coerced plea deal including in the misdemeanor setting, eliminating unscientific presumptive drug testing as a basis for detention or conviction, and monitoring and assuring external oversight of emerging technologies that could have adverse effects on people of color, privacy interests, and human rights. It is our hope that readers will appreciate how, through the innocence frame, policymakers might begin to envision a reimagined criminal legal system.

I.
SCOPE OF THE PROBLEM

The first 375 exonerations reflect the known successes of the Innocence Project as well as of other innocence organizations and post-conviction lawyers devoted to overturning wrongful convictions. However, these DNA-based exonerations likely reflect only the tip of the proverbial iceberg of erroneous convictions for several reasons. First, the wrongly convicted must bring the case to our attention, which may not happen if the individual is worn down by decades of judicial indifference. Second, our work is generally limited to old cases in which crime scene evidence containing biological material central to guilt or innocence was collected. Third, even if there was critical biological evidence, that evidence may be lost or

2018), https://www.youtube.com/watch?v=PEUXY8T_Fyg&feature=EMb_title [https://perma.cc/9RHL-23V9] [hereinafter *Psychological Phenomena*].

destroyed and no longer viable as a basis for exoneration. It has been estimated by crime lab directors that merely 10 to 20% of crimes have evidence suitable for DNA testing.[8] Tallies by other organizations give a taste for how large the number of false convictions may be. For example, the National Registry of Exonerations has attempted to track DNA as well as non-DNA exonerations. When the numbers are combined, a whopping 2,850 men and women have been exonerated since 1989.[9] And the figures estimated by the National Registry of Exonerations exclude the many people who were wrongly convicted due to serial or mass misconduct perpetrated by rogue members of law enforcement.[10] Finally, scholars have analyzed hard data on homicides, sexual assaults, and other crimes to get a handle on the frequency of wrongful convictions. The most robust analysis available reported a wrongful conviction rate of about 4% for capital cases.[11] A 2018 study on a general prison population by Charles Loeffler and colleagues reported an overall rate of about 6%, with considerable conviction-specific variability (from less than 1% to more than 10%).[12] This study provides some support for the previous estimate and reinforces the need for more research focusing on specific crimes and circumstances of conviction. Even if the frequency is half of what the research suggests, thousands of innocent people languish in prison.

While the universe of known wrongful convictions is limited, our analysis of those cases indicates that the problems which cause false convictions in the known cases are likely to be present in the unknown cases. Therefore, analyzing the known cases for common flaws reveals areas of the criminal legal system in need of reform. Our analysis of the DNA cases or the National Registry of Exonerations' much larger dataset reveals that the flaws are deep, systemic,

8. TERRY M. ANDERSON & THOMAS J. GARDNER, CRIMINAL EVIDENCE: PRINCIPLES AND CASES 321, 427 (9th Ed. 2014).

9. *See Summary View of Exonerations*, NAT'L REGISTRY OF EXONERATIONS, https://www.law.umich.edu/special/exoneration/Pages/browse.aspx [https://perma.cc/33FV-YZ2N] [hereinafter *Summary View of Exonerations*].

10. *See* Christine Hauser, *'A Stain on the City': 63 People's Convictions Tossed in Chicago Police Scandal*, N.Y. TIMES (Feb. 13, 2019), https://www.nytimes.com/2019/02/13/us/chicago-exonerations-drug-sentences.html [https://perma.cc/MFJ4-G29L]; *18 Exonerated in Chicago's Second Mass Exoneration*, INNOCENCE PROJECT (Sept. 24, 2018), https://www.innocenceproject.org/second-mass-exoneration-in-chicago/ [https://perma.cc/8G2R-N6SA].

11. *See* Samuel R. Gross et al., *Rate of False Convictions of Criminal Defendants Who Are Sentenced to Death*, 111 PROC. NAT'L ACAD. SCI. U.S. 7230, 7230 (2014).

12. *See* Charles E. Loeffler et al., *Measuring Self-Reported Wrongful Convictions Among Prisoners*, J. QUANTITATIVE CRIMINOLOGY 259, 259 (2018).

and oftentimes multi-dimensional.[13] Among the most common contributing factors to those wrongful convictions are eyewitness misidentification, false confessions, the misapplication of forensic science, and incentivized jailhouse informants—which are explored in detail in this article—as well as other factors we address in our work beyond what is discussed in this article, such as police and prosecutorial misconduct, and inadequate defense counsel.[14] Although police policy reforms are not addressed here, it is self-evident that enhancing police transparency and accountability are essential first steps to achieve a greater measure of justice in criminal legal proceedings, and the Innocence Project has been engaged at the state and local level on a range of policing reforms, from ensuring that police disciplinary records are publicly available to the elimination of qualified immunity, a legal doctrine which has persistently prevented financial justice for victims of police violence

13. Our DNA-based dataset is neither random nor necessarily representative of the entire universe of wrongful conviction cases. The DNA data set is biased because it focuses only on the cases where DNA testing could be dispositive of innocence. Thus, particularly in the early years, the Innocence Project focused on sexual assaults and sexual assault murders where semen was recovered from the victim's genitals or blood from the wounded assailant left a line of drips as he fled the scene. Although in our DNA dataset, eyewitness and victim misidentification is the most common contributing factor, we cannot extrapolate that to all wrongful convictions. *See DNA Exonerations in the United States*, *supra* note 1. Our data set is conveniently skewed toward sexual assaults because DNA exclusions on semen, particularly in the early years of the Innocence Project, were the strongest evidence of innocence. The most common inculpatory evidence in sexual assault cases was the positive identification by the victim. *See* Samuel R. Gross & Michael Schaffer, Exonerations in the United States 1989-2012, NAT'L REGISTRY OF EXONERATIONS 40 (June 2012), https://www.law.umich.edu/special/exoneration/Documents/exonerations_us_1989_2012_full_report.pdf [https://perma.cc/B5Y7-STBD]. Once we showed the post-conviction DNA test on semen deposited by a non-consensual donor excluded the convicted person, a finding of misidentification inevitably followed. In comparison, if we looked only at the homicide DNA exonerations, the most common contributing factor is false confessions. *See* Samuel Gross & Maurice Possley, *For 50 Years, You've Had "The Right to Remain Silent"*, MARSHALL PROJECT (June 12, 2016), https://www.themarshallproject.org/2016/06/12/for-50-years-you-ve-had-the-right-to-remain-silent [https://perma.cc/Z48A-ZVAW]. Although the National Registry includes other types of crimes in addition to homicides and sexual assaults, and the frequency of contributing factors varies, they find the same contributing factors as the DNA data. *Cf. Summary View of Exonerations, supra* note 9.

14. *See The Causes of Wrongful Convictions*, INNOCENCE PROJECT, https://www.innocenceproject.org/causes-wrongful-conviction./ [https://perma.cc/U25Z-5QR2]; *Psychological Phenomena, supra* note 7.

and wrongful conviction[15] Pervading all these procedural and evidentiary failings is the United States' history of racism, from slavery to Jim Crow to mass incarceration.

Unconscious racial bias and explicit racism harm people of color, especially young and adult Black men.[16] From disproportionately high rates of police encounters which lead to arrest, to consistently more serious charges for the same conduct, denial of bail, inadequate defense, the likelihood of misconduct by prosecutors and police, indifference by judges and juries, and disparities in sentencing and parole, Black people are routinely treated far worse by the system.[17] It is not surprising that this disparity applies to the conviction of the innocent as well. Black men are overrepresented within the wrongful conviction dataset, even accounting for the disproportionate numbers convicted of homicide or sexual assault.[18] Black exonerees received longer sentences than white exonerees for the same type of crime.[19]

Consider the case of Calvin Johnson, a young African American man from Georgia who was arrested and accused of two separate rapes of white women in 1983.[20] Although the two assaults shared similar features—they occurred two days apart, in close proximity, and with the same highly unusual modus operandi—the county line separating Fulton and Clayton counties ran between the two victims' homes, thus necessitating two separate trials.[21] Both trials involved the particular difficulties associated with cross-racial

15. As we go to press, the Innocence Project has already begun efforts in collaboration with others to ensure the transparency of police disciplinary records and eliminate the doctrine of qualified immunity.

16. *See, e.g.*, Samuel R. Gross et al., Race and Wrongful Convictions in the United States, NAT'L REGISTRY OF EXONERATIONS 1 (2007), http://www.law.umich.edu/special/exoneration/Documents/Race_and_Wrongful_Convictions.pdf [https://perma.cc/PV4N-RAVC].

17. *See generally Report Regarding Racial Disparities in the United States Criminal Justice System*, SENTENCING PROJECT (Mar. 2018), https://www.sentencingproject.org/wp-content/uploads/2018/04/UN-Report-on-Racial-Disparities.pdf [https://perma.cc/73DK-TQXR] [hereinafter Sentencing Project Report]. Increasingly, Black women have become ensnared by the criminal legal system, leading to the #sayhername social movement coined by the African American Policy Forum. *See Say Her Name: Resisting Police Brutality Against Black Women*, AFR. AM. POL'Y F. 1–2 (July 2015), http://static1.squarespace.com/static/53f20d90e4b0b80451158d8c/t/560c068ee4b0af26f72741df/1443628686535/AAPF_SMN_Brief_Full_singles-min.pdf [https://perma.cc/7CJQ-G9NU].

18. *See* Gross et al., *supra* note 16, at iii, 1.

19. 19 *See id.* at iii, 6-9.

20. *Calvin Johnson*, INNOCENCE PROJECT, https://www.innocenceproject.org/cases/calvin-johnson/ [https://perma.cc/BMS2-KREW].

21. BARRY SCHECK ET AL., ACTUAL INNOCENCE 198–99 (2000).

identifications. The Clayton County rape was tried first. The judge, the prosecutor, and every single member of the jury were white.[22] (While two black jurors had originally sat in the jury box, they were stricken when the prosecution used its "peremptory" challenges to remove them.)[23] The all-white jury rejected the alibi testimony offered by four black witnesses: Mr. Johnson's fiancé, his fiancé's mother, his mother, a beloved community member known for her charitable activities, and his father, a respected businessman and lawyer who had served as a state senator in Ohio before moving his family from the segregated city of Cincinnati to the racially integrated greater Atlanta community.[24] Instead they credited the testimony of not one but both white victims. The Fulton County victim was permitted to testify at the Clayton County trial, contrary to the usual prohibition of such testimony, once the judge ruled that the second rape was a similar transaction. The serology testing (forensic DNA testing had not yet been invented) was uninformative, but microscopic analysis of three "Negroid"[25] pubic hairs recovered from the victim's bedsheet excluded Mr. Johnson.[26] The prosecutor exploited the jury's racism, suggesting that the hairs were irrelevant, no doubt inadvertently attached to her white sheet when the victim was compelled to do her laundry at a racially integrated laundromat or to her body at a public toilet.[27] After a very brief deliberation, he was convicted and sentenced to life.[28]

Seven months later, he was tried in Fulton County, where the case against Mr. Johnson was stronger, because Mr. Johnson was cross examined on his recent rape conviction in Clayton County.[29] Nevertheless, Mr. Johnson was acquitted.[30] There was one notable difference at the second trial: the composition of the jury. A jury of five white and seven black people unanimously questioned the reliability of the cross racial identification.[31] The second jury evidently

22. *See id.* at 202.

23. *See id.*

24. *See id.* at 199–200.

25. At that time, crime labs differentiated hairs into three categories: Caucasoid, Negroid and Mongoloid. *See* Douglas W. Deedrick & Sandra L. Koch, *Microscopy of Hair Part 1: A Practical Guide and Manual for Human Hairs*, 6 FORENSIC SCI. COMM. 1 (2004), https://archives.fbi.gov/archives/about-us/lab/forensic-science-communications/fsc/jan2004/research/2004_01_research01b.htm [https://perma.cc/394X-CKLQ].

26. CALVIN C. JOHNSON, JR. & GREG HAMPIKIAN, EXIT TO FREEDOM 239 (2003).

27. *See id.*

28. *See id.* at 127.

29. *See* SCHECK ET AL., *supra* note 21, at 198–99.

30. *Id.* at 202.

31. *See id.*

found the alibi testimony of Calvin's mother and father more credible.[32] Sixteen years later, DNA testing on the semen left by the rapist in Clayton County excluded Calvin Johnson.[33] The same prosecutor who years earlier had suggested to the jury that the pubic hairs were irrelevant, in 1999 demanded they be tested since they could have been deposited by the rapist.[34] The testing revealed that the DNA profiles for the sperm and hairs were identical. The hairs were obviously left by the rapist. On June 15, 1999, without an appropriate apology from anyone responsible for this miscarriage of justice, Mr. Johnson's conviction was vacated and all charges were dismissed.[35] In addition to other contributing factors, a racially skewed jury and a racist appeal by the prosecutor were likely responsible for this wrongful conviction.

When it comes to securing freedom, race-based disparities are also present. It takes, on average, three years longer to clear an innocent black man for murder than one who is white; it takes four years longer if the defendant is on death row.[36] Given the human factors which contribute to wrongful convictions, we understand that true criminal legal policy reform requires more than changes to the law and its policies and practices; it also requires a massive cultural transformation such that people are suspected of, prosecuted, and tried for criminal acts based only on reliable, accurate, and objective evidence and not because of the color of their skin.

II.
FOUNDATIONAL REFORMS THAT REVEAL WRONGFUL CONVICTIONS

The initial wave of DNA exonerations led to a revolution in the criminal legal system. For the first time, prevailing law enforcement and prosecutorial conduct as well as court rules and doctrine were called into question. The Innocence Project's first priority was to establish policies that would help to reveal more wrongful convictions through the provision of statutory access to post-conviction DNA testing. With a favorable result, the innocent would be allowed go back into court to have the conviction vacated and the charges dismissed. When the Innocence Project was founded, most states had strict time limits on raising claims of innocence based on newly discovered evidence, and only two states—New York and Illi-

32. *See id.*
33. *See id.* at 207.
34. *Id.*
35. *See Calvin Johnson*, *supra* note 20.
36. *See* GROSS ET AL., *supra* note 16, at 7.

nois—had laws granting access to post-conviction DNA testing.[37] Today, all fifty states and the federal system have statutes providing post-conviction access to DNA testing and either laws or court rules to permit convicted persons to vacate their convictions with newly discovered evidence of innocence with or without DNA evidence.[38]

However, many of these statutes continue to be limited in substance and scope. As of this writing, the state of Alabama only permits post-conviction DNA testing to those who have been capitally-charged[39] and the state of Kentucky prohibits post-conviction DNA testing for those people who plead guilty.[40] Removing barriers in existing laws that provide only limited access to post-conviction DNA testing often proves more difficult than their original passage, as the more hard fought and controversial provisions were not successfully added in the initial efforts to pass those statutes. That said, gains continue to be made. In the states of Maryland, Pennsylvania, and Virginia, for instance, the Innocence Project recently and successfully lobbied for the removal of the prohibition on testing for people who previously plead guilty.[41]

An attendant reform to the establishment of robust post-conviction DNA testing laws is the proper retention of biological evidence. Since governments did not anticipate the probative value of DNA evidence, very little regard was given to proper preservation of that evidence. Indeed, innocence organizations across the country continue to struggle to locate evidence that can be subjected to post-conviction DNA testing. Evidence retention policies and practices varied from state to state and, within states, from county to county. In many jurisdictions there was no policy. If the local police or courthouse had a large, unused basement, evidence was serendipitously recovered for testing. While the Innocence Project worked in various states to craft evidence retention laws, it also lob-

37. *See* JEREMY TRAVIS & CHRISTOPHER ASPLEN, U.S. DEP'T OF JUSTICE, POST-CONVICTION DNA TESTING: RECOMMENDATIONS FOR HANDLING REQUESTS 10 (1999), https://www.ncjrs.gov/pdffiles1/nij/177626.pdf [https://perma.cc/2QAY-EAAJ].

38. *Access to Post-Conviction DNA Testing*, INNOCENCE PROJECT, https://www.innocenceproject.org/causes/access-post-conviction-dna-testing/ [https://perma.cc/3EBK-KPXN] [hereinafter *Access to Post-Conviction DNA Testing*].

39. ALA. CODE § 15-18-200(a) (2018).

40. *See* KY. REV. STAT. ANN. § 422.285 (West 2017). As of November 2015, 15% of exonerations came from convictions that included guilty pleas. *See Innocents Who Plead Guilty*, NAT'L REGISTRY OF EXONERATIONS (Nov. 24, 2015), http://www.law.umich.edu/special/exoneration/Documents/NRE.Guilty.Plea.Article1.pdf [http://www.law.umich.edu/special/exoneration/Documents/NRE.Guilty.Plea.Article1.pdfhttps://perma.cc/XSK9-WVQX].

41. *See* MD. CODE ANN., CRIM. PROC. § 8-201 (West 2018); *see also* 42 PA. STAT. AND CONS. STAT. ANN. § 9543.1 (West 2016).

bied the federal government to create a Technical Working Group to provide guidance to states and localities, which resulted in the publication of two reports—one for evidence custodians[42] and the other for policymakers.[43] Those reports continue to provide guidance to state and local governments.

The rising number of DNA exonerations due to laws which enable post-conviction DNA testing has consequently eroded the "doctrine of finality," which historically prevented the convicted from regaining access to the court system, despite newly discovered evidence, when that evidence was uncovered many years after the original conviction.[44] The "doctrine of finality" endorses a hard cut-off point, after which even the actually innocent could not challenge the correctness of the conviction in the interest of finality (i.e., ensuring that courts would not have to potentially revisit a matter years after the original trial).[45] When the Innocence Project started, all but nine states had a strict time limit for getting back into court.[46] For example, Virginia had one of the most onerous: 21 days after the conviction was final, there could be no judicial remedy for innocence.[47] The rationale for this finality was that after ten, twenty, or thirty years, memories fade, witnesses die, and evidence is lost. Thus, one was less likely to achieve a more reliable outcome of innocence or guilt at the re-trial than was secured at the original adjudication. But the availability of post-conviction DNA evidence has tipped the balance in favor of getting access to the courts. The courts, legislatures, and other policymakers generally came to recognize that DNA evidence which excluded the convicted individual, even if presented thirty years after conviction, was a far more reliable indication of innocence than the fallible identification, jailhouse informant, or unrecorded confession produced

42. *See* NAT'L INST. STANDARDS & TECH., U.S. DEP'T OF COMMERCE, THE BIOLOGICAL EVIDENCE PRESERVATION HANDBOOK: BEST PRACTICES FOR EVIDENCE HANDLERS (2013), https://nvlpubs.nist.gov/nistpubs/ir/2013/NIST.IR.7928.pdf [https://nvlpubs.nist.gov/nistpubs/ir/2013/NIST.IR.7928.pdfhttps://perma.cc/HB4X-N8YQ].

43. *See* NAT'L INST. STANDARDS & TECH., U.S. DEP'T OF COMMERCE, BIOLOGICAL EVIDENCE PRESERVATION: CONSIDERATIONS FOR POLICY MAKERS (2015), https://nvlpubs.nist.gov/nistpubs/ir/2015/NIST.IR.8048.pdf [https://nvlpubs.nist.gov/nistpubs/ir/2015/NIST.IR.8048.pdfhttps://perma.cc/8NZZ-PW5N].

44. *See* Sarah L. Cooper, *Forensic Science Developments and Judicial Decision-Making in the Era of Innocence: The Influence of Legal Process Theory and Its Implications*, 19 RICH. PUB. INT. L. REV. 211, 228 (2016).

45. *See* Herrera v. Collins, 506 U.S. 390, 409 (1993) (debating whether to impose a time limit in the interest of finality).

46. *See id.* at 411 ("[N]ine States have no time limits.").

47. *See id.* at 410 n.8 (citing Va. SUP. CT. R. 3A:15(b) (1992)).

at the original trial. Virginia has since done away with its 21-day rule and many other states have made it easier to get back into court.[48] The growing recognition that other forms of evidence might be fallible has also opened the door to quelling objections—grounded in the "doctrine of finality"—to expanded post-conviction mechanisms for courts to revisit convictions based on other forms of evidence. Not only is it now easier to get back into court with DNA evidence, but we have made inroads with non-DNA evidence as well.[49]

Another consequence of the emergence of a sizeable number of DNA-based exonerations is the realization that police and prosecutors had, for decades, relied on many other forensic methods lacking a proper scientific foundation. The misapplication of forensic science, including bitemark analysis, flawed conventional serology, dog sniffing evidence, shoe impression evidence, and hair and fiber comparisons contributed to almost half the wrongful convictions proven through post-conviction DNA testing.[50] In response, California and Texas led the way, creating a statutory framework to get back into court if the convicted person could show that either the scientific community's understanding of a forensic method's probative value has diminished over time or that the prosecution's original trial expert now repudiates his trial testimony.[51] Connecticut,[52] Michigan,[53] Nevada,[54] West Virginia,[55] and Wyoming[56] have

48. VA. CODE ANN. § 19.2-327.1. *See generally* MD. CODE ANN., CRIM. PROC. § 8-201 (West 2018); 42 PA. CONS. STAT. § 9543.1 (2018).

49. *See Policy Reform*, INNOCENCE PROJECT, https://www.innocenceproject.org/policy/ [https://perma.cc/VS3E-8XJ8].

50. *Overturning Wrongful Convictions Involving Misapplied Forensics*, INNOCENCE PROJECT, https://www.innocenceproject.org/overturning-wrongful-convictions-involving-flawed-forensics/ [https://perma.cc/9QSB-JR8S] [hereinafter *Misapplied Forensics*].

51. In 2014, California enacted a law that allowed convicted people to seek relief based on flawed forensic evidence used in their convictions. CAL. PENAL CODE § 1473(e)(1) (West 2018). In 2013, Texas passed the first law in the nation allowing people to challenge their convictions based on new or discredited scientific evidence. TEX. CODE CRIM. PROC. ANN. art. 11.073 (West 2017).

52. In 2018, Connecticut enacted a law removing the 3-year time limit in its law regarding motions for new trial to permit the introduction of new, non-DNA evidence after conviction. The new law includes a provision to clarify that new evidence may include new scientific research, guidelines, or expert recantation. CONN. GEN. STAT. ANN. § 52-582 (West 2018).

53. In 2018, Michigan amended its court rule that dictates post-appeal relief. The changes allow a person to file a post-conviction motion for relief based on new scientific evidence, including but not limited to: shifts in a field of scientific knowledge, changes in expert knowledge or opinion, and shifts in a scientific method used in a conviction. MICH. COMP. LAWS ANN. § 6.502(G)(3) (West 2019).

also adopted comparable "changes in science" frameworks by statute or court rule through the advocacy efforts of the Innocence Project, partner Innocence Network organizations, and other groups. Even though courts have become more accessible, and despite more than 2000 non-DNA exonerations, it remains unreasonably difficult to secure a vacatur where exculpatory DNA evidence is unavailable.[57] While advocates have worked diligently to obtain clear and efficient pathways to prove innocence, procedural, practical, and political barriers continue to impair our ability in many jurisdictions to prove the innocence of the wrongfully convicted. Therefore, this aspect of our policy agenda remains a priority.

III.
REFORMS THAT PREVENT WRONGFUL CONVICTION

Regaining access to court and securing post-conviction DNA testing long after appeals have been exhausted are "back end" reforms to correct a miscarriage of justice. Simultaneously, we needed to couple the "back end" reforms with "front end" improvements of police, prosecutorial, and crime lab practices to prevent the innocent from being convicted in the first place. Once we identified the most common causes of wrongful conviction, our team leveraged

54. In 2019, Nevada enacted a 'changes in science' law that clarifies that new evidence may include "[r]elevant forensic evidence . . . that was not available at trial" or that materially undermines forensic evidence presented at trial. "Forensic scientific evidence is considered to be undermined if new research or information exists that repudiates the foundational validity of scientific evidence or testimony or the applied validity of a scientific method or technique." NEV. REV. STAT. ANN. § 34.930 (West 2019).

55. W. VA. CODE ANN. § 53-4A-1 (WEST).

56. In 2018, Wyoming enacted a 'factual innocence' law to remove the state's two-year time limit for introducing new, non-DNA evidence. The law includes a provision which clarifies that new evidence may include new scientific research, guidelines, or expert recantations that undermine forensic evidence used for convictions. WYO. STAT. ANN. § 7-12-402 (West 2018).

57. Many state statutes contain procedural bars to the post-conviction consideration of new evidence, such as newly secured video surveillance evidence, digital evidence corroborating an alibi, or recanting witnesses who attribute the original false statement to police coercion. *See Misapplied Forensics*, *supra* note 50. Even newly elected, reform-oriented prosecutors, who attempt to correct past errors by vacating convictions are thwarted sometimes by Attorneys General. *See* State v. Johnson, No. ED108193, 2019 Mo. App. LEXIS 2011 (Ct. App. Dec. 24, 2019); *see also* Richard A. Oppel, Jr., *30 Prosecutors Say Lamar Johnson Deserves a New Trial. Why Won't He Get One?*, N.Y. TIMES (Dec. 25, 2019), https://www.nytimes.com/2019/12/25/us/criminal-justice-missouri-conviction.html [https://perma.cc/7B3W-U3ET].

years of extant academic scientific research with the power of the exonerees' experiences to secure reforms that mitigate some of the causes. We have contributed to the passage of more than 200 statutory reforms, many new court rules, and an untold number of instances of voluntary cooperation between the prosecution and those seeking exonerating DNA evidence.[58]

We were able to show law enforcement and judges that these reforms would enhance the reliability and accuracy of the criminal legal system, establishing the Innocence Project's credibility and expediting the adoption of these reforms. Other stakeholders immediately grasped the fact that every time the state convicted an innocent, the person who actually committed the crime remained at liberty to commit other crimes. Getting it right not only protected the innocent, it was also a matter of urgent public safety.

A. Eyewitness Misidentification

Eyewitness misidentification[59] is one of the single largest contributing factors of erroneous conviction in cases of exonerations proven through post-conviction DNA testing. There are few things more compelling to a jury than a victim of a violent crime stating on the witness stand, "As God as my witness, I will never forget the face of the person who attacked me." Eyewitness identifications are invariably accepted by jurors as accurate because they are communicated with a great degree of emotion and confidence. Indeed, jurors give more credence to confident witnesses, even though research indicates that eyewitness confidence and accuracy are generally not well correlated.[60]Jurors are understandably eager to believe and validate victims of crime who have endured unspeakable vio-

58. *See, e.g.*, *Eyewitness Identification Reform*, INNOCENCE PROJECT, https://innocenceproject.org/eyewitness-identification-reform/ [https://perma.cc/YZL9-2UDN] [hereinafter *Eyewitness Identification Reform*]; *Inadequate Defense*, INNOCENCE PROJECT, https://www.innocenceproject.org/causes/inadequate-defense/ [https://perma.cc/N96M-5L6K]; *Informing Injustice: The Disturbing Use of Jailhouse Informants*, INNOCENCE PROJECT (Mar. 6, 2019), https://www.innocenceproject.org/informing-injustice/ [https://perma.cc/PY5H-85PA] [hereinafter *Informing Injustice*]; *Misapplied Forensics*, *supra* note 50.

59. *See DNA Exonerations in the United States*, *supra* note 1. We are not suggesting that misidentification is in fact the most common contributing factor in the universe of wrongful convictions. Rather, in most sexual assaults the victim's identification is the key piece of evidence, whereas in our homicide cases, the most frequent contributing factor is a false confession. *Id.*

60. *See* J.T. Wixted & Gary L. Wells, *The Relationship Between Eyewitness Confidence & Identification Accuracy: A New Synthesis*, 18 PSYCHOL. SCI. PUB. INT. 10, 18 (2017); *see also* Gary L. Wells et al., *Eyewitness Identification Procedures: Recommendations for Lineups and Photospreads*, 22 LAW & HUM. BEHAV. 603, 624 .

lence. They have no motive to lie. In his book, Calvin Johnson, the exonerated man referenced earlier in this article described the victim eyewitness's testimony in his case , *Exit to Freedom*: "Listening to her testimony, it is impossible not to be moved, and it is obvious she has the jury's sympathy. . . . I pray that the jury is not so steeped in sympathy for this woman that they will believe her incredulous identification."[61] Unfortunately, however, juror desire to value the word of a victim is coupled with the common and mistaken belief that memory operates much like a videorecorder. In reality, the memory of a person's face is typically tested during an eyewitness identification procedure that is performed often days—and sometimes months—after the crime, which often yields an incorrect recall. The more accurate method would be a reconstruction of the face the witness saw.

There are a range of factors outside of the identification procedure used by law enforcement that impede or prevent an accurate identification. There are variables that hinder a clear viewing of the perpetrator by the eyewitness, including distance, lighting, obstructions, angle, disguise (e.g., hats or hoods) and visual acuity. There are also factors that impede the reliable encoding of that viewing into memory, including extreme stress, the presence of a weapon (which leads witnesses to focus on a gun, for instance, rather than on a face), and "own race bias." Further, if eyewitness identification procedures are not conducted using pristine, scientifically supported best practices and conditions, the possibility for misidentification is ever greater because, like other forms of crime scene evidence, memory can easily be contaminated.[62]

The Innocence Project endorses a range of reforms to improve the accuracy of eyewitness identification. These reforms have been recognized by police, prosecutors, and judges, as well as by the National Academy of Sciences (the nation's premier independent scientific entity), the U.S. Department of Justice, the International Association of Chiefs of Police and the American Bar Association.[63] The benefits of these reforms in achieving more accurate and relia-

61. *See* JOHNSON, supra note 26, at 97.

62. *See* Wells et al., *supra* note 59.

63. *See Eyewitness Identification Reform*, *supra* note 57. *See generally* INT'L ASS'N OF CHIEFS OF POLICE, MODEL POLICY: EYEWITNESS IDENTIFICATION (Sept. 2010); NAT'L RESEARCH COUNCIL, IDENTIFYING THE CULPRIT: ASSESSING EYEWITNESS IDENTIFICATION (2014), https://www.nap.edu/catalog/18891/identifying-the-culprit-assessing-eyewitness-identification [https://perma.cc/Y59F-74N8]; U.S. DEP'T OF JUSTICE OFFICE OF THE DEPUTY ATTORNEY GEN., EYEWITNESS IDENTIFICATION: PROCEDURES FOR CONDUCTING PHOTO ARRAYS (Jan. 6, 2017).

ble eyewitness identifications are corroborated by a half-century of peer-reviewed comprehensive research.[64]

1. Initial Reform Efforts

While there are many areas ripe for eyewitness identification improvement, the Innocence Project's initial police practice policy focus was guided by key reform recommendations endorsed by the scientific community, including:

1. Blind Administration: A "double-blind" lineup is one in which the administrator of an identification procedure does not know the identity of the suspect. This prevents the administrator from providing inadvertent or intentional cues to influence the eyewitness to pick the suspect.[65]

2. Instructions: "Instructions" are a series of statements issued by the lineup administrator to the eyewitness that deter the eyewitness both from assuming the actual perpetrator is present in the line-up or identification procedure and from feeling pressured or compelled to make a selection. One of the recommended instructions includes the directive that *the perpetrator may or may not be present in the lineup*.[66]

3. Composing the Lineup: Research recommends composing a line-up with non-suspect photographs and/or live lineup members (fillers) that both involve a "match to description," i.e., fillers should be selected based on their resemblance to the description provided by the eyewitness, while also assuring that fillers resemble the suspect such that the suspect should not noticeably stand out from among the other fillers.[67]

4. Confidence Statements: Immediately following the identification procedure, the eyewitness should be asked to provide a statement, in his or her own words, that articulates the level of confidence in the identification made. It is important to capture the level of certainty at the time the identification is made because

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64. *See generally* NAT'L RESEARCH COUNCIL, IDENTIFYING THE CULPRIT: ASSESSING EYEWITNESS IDENTIFICATION, *supra* note 62.

65. Wells et al., *supra* note 59, at 627.

66. *See* Nancy Mehrkens Steblay, *Social Influence in Eyewitness Recall: A Meta-Analytic Review of Lineup Instruction Effects*, 21 LAW & HUM. BEHAV. 283, 294 (1997).

67. *See* Gary L. Wells et al., *Policy and Procedure Recommendations for the Collection and Preservation of Eyewitness Identification*, 44 LAW & HUM. BEHAV. 3, 17–20.; *see also* Innocence Project, REEVALUATING LINEUPS: WHY WITNESSES MAKE MISTAKES AND HOW TO REDUCE THE CHANCE OF MISIDENTIFICATION 5, 10, 18, (2009), https://www.innocenceproject.org/wp-content/uploads/2016/05/eyewitness_id_report-5.pdf [https://perma.cc/XY92-5XT6] [hereinafter REEVALUATING LINEUPS].

eyewitness confidence can be artificially inflated over time through confirming feedback.[68]

The first state to adopt reform in this area was New Jersey in 2001, under former Attorney General John Farmer.[69] In New Jersey, Attorney General law enforcement guidelines are tantamount to law, as the Attorney General enjoys unique plenary authority over local and state law enforcement.[70] Following the issuance of these guidelines, however, eyewitness identification reforms in other states initially stalled. Because of law enforcement resistance to uniform mandates guiding their practice in this area, by 2013, only seven states had implemented statewide reform.[71] Given the prevalence of eyewitness misidentification in our exoneration cases and the slow adoption of reform, the Innocence Project prioritized advocacy over a five-year period. Today, twenty-six states[72] have uniformly adopted improved eyewitness practices through policy or law, and three additional states also require what is arguably the single most important reform: namely the blind administration of lineups.[73]

2. Addressing Estimator Variables

Modifications to police practice are central to helping crime victims and witnesses make accurate and reliable identifications free from government influence. These changes, however, do little to address what are referred to as "estimator variables": factors that cannot be controlled by properly conducted identification procedures and that impact the quality of an eyewitness's memory of the event to begin with.[74] For instance, a properly administered identification procedure cannot repair conditions that prevented an eyewitness from having a good opportunity to view the perpetrator.

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68. NAT'L RESEARCH COUNCIL, IDENTIFYING THE CULPRIT: ASSESSING EYEWITNESS IDENTIFICATION 108 (2014) [hereinafter IDENTIFYING THE CULPRIT].

69. *See* Gary L. Wells, *Eyewitness Identification: Systemic Reforms*, WIS. L. REV. 615, 616 (2006).

70. *See id.* at 634–35.

71. CAL. PENAL CODE § 859.7 (West 2020); COLO. REV. STAT. ANN. § 16-1-109 (West 2015); MD. CODE ANN., PUB. SAFETY § 3-506.1 (West 2015); MINN. STAT. ANN. § 626.8433 (West 2020); N.M. STAT. ANN. § 29-3B-3 (West 2019); N.C. GEN. STAT. ANN. § 15A-284.52 (West 2019); OHIO REV. CODE ANN. § 2933.83 (West 2010); VT. STAT. ANN. tit. 13, § 5581 (West 2014).

72. *Eyewitness Identification Reform*, *supra* note 57; VA. CODE ANN. § 19.2-390.02 (West 2005).

73. *See* FLA. STAT. ANN. § 92.70 (West 2017); 725 ILL. COMP. STAT. ANN. 5/107A-2 (West 2015); N.Y. CRIM. PROC. LAW § 60.25(1)(a)(ii) (McKinney 2017).

74. IDENTIFYING THE CULPRIT, *supra* note 67, at 17.

These factors include: whether or not the eyewitness was wearing corrective eyewear; the physical distance between the eyewitness and the perpetrator; and whether there was sufficient lighting to allow for a clear view of the perpetrator.[75] Other estimator variables have less to do with viewing conditions and instead implicate cognitive factors. For instance, research has demonstrated that witnesses are significantly better at identifying members of their own race than those of other races.[76]

As a result, the Innocence Project continues to educate the judiciary, the defense, and the prosecution in efforts to familiarize them with scientific research that demonstrates the fallibility of identifications that were negatively influenced by poor viewing conditions or other estimator variables. Remedies take the form of judicial suppression (when accompanied by suggestiveness), issuance of jury instructions, and the admission of expert testimony. Judicial education efforts have taken place in West Virginia and Maryland, and defense trainings are regularly conducted by Innocence Project staff throughout the country.

Additionally, we have begun to see momentum for renovation of the traditional legal framework established by the U.S. Supreme Court,[77] which has been widely rejected by the scientific community. In *Manson v. Brathwaite*, the Court created a two-part balancing test for determining the admissibility of eyewitness identification evidence, requiring first an assessment of whether a questioned identification procedure was unnecessarily suggestive and, if so, whether the identification evidence is nonetheless reliable.[78] The *Manson* decision and its five enumerated factors for assessing reliability[79] preceded the emergence of critical social science research that would have better informed the factors used to determine reliability. In the same way that police practice has begun to shift to accom-

75. *Id.*

76. *See id.* at 96.

77. Manson v. Brathwaite, 432 U.S. 98 (1977).

78. *See id.* at 110–14.

79. The factors to be considered are: (1) "the opportunity of the witness to view the criminal at the time of the crime"; (2) the witness's degree of attention; (3) the accuracy of the witness's prior description; (4) "the level of certainty demonstrated at the confrontation"; and (5) the time passed between the crime and the confrontation. *Id.* at 114. Science has shown four of the five "reliability" factors to be highly unreliable. Opportunity to view, degree of attention, accuracy of description, and certainty arise from the witness's own self-reporting, and thus are susceptible to suggestion and inaccuracy. *See* Alexis Agathocleous, *Confronting the Problems of* Manson v. Brathwaite*: Scientifically Sound Approaches to Suppression in Eyewitness Identification* Cases, CHAMPION 18, 19–20 (Nov. 2019).

modate the legal changes grounded in scientific research that have developed over the past few decades, so too have the courts. Since the *Manson* ruling, six states have abandoned their traditional balancing tests in favor of new frameworks, some of which incorporate carefully tailored jury instructions that provide fact-finders with scientific explanations of how certain non-*Manson* variables may impact the reliability of the identification.[80] For instance, the state of New Jersey has issued a set of tailored jury instructions that educate fact-finders not only about those variables that law enforcement can control (system variables), but also those factors that it cannot (estimator variables).[81]

3. Where We Want to Go

While the Innocence Project initially focused on a set of improvements that were scientifically supported and fairly easy to adopt, the next wave of reforms in this area should address the following additional system variables:

1. Documenting the Procedure: Ideally, lineup procedures should be video recorded.[82] If this is impracticable, there should be an audio recording. Recordation provides rich contextual information about an identification procedure. It will show, for instance, evidence of explicit and sometimes subtle feedback from law enforcement. It might also reveal "jump out" identifications, identifications that happen quickly and are more likely to be accurate because they flow from actual recognition versus other identifications that may instead be generated from a reasoning process and are less likely to be accurate.[83]

2. Regulating Show-Up Identifications: Show-up procedures, in which an eyewitness is presented with a single, live suspect for the purposes of identification or exclusion, are inherently suggestive and should only be used when absolutely necessary. When show-up procedures are used, regulated protocols should be employed for reducing suggestiveness.[84]

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80. *See* UTAH R. EVID. 617; State v. Kaneaiakala, 450 P.3d 761, 772–73 (Haw. 2019); State v. Harris, 191 A.3d 119, 144–45 (Conn. 2018); Young v. State, 374 P.3d 395, 412 (Alaska 2016); State v. Lawson, 291 P.3d 673, 690 (Or. 2010) (en banc); State v. Henderson, 27 A.3d 872, 919 (N.J. 2011).

81. *See Henderson*, 27 A.3d at 919–24.

82. *See* IDENTIFYING THE CULPRIT, *supra* note 67, at 108.

83. *See id.* at 109.

84. *See id.* at 107.

3. Prohibiting Composites: Composite procedures have been shown to contaminate memory and should therefore be prohibited.[85]

4. Prohibiting Multiple Identification Procedures: Only one identification procedure should be used for each suspect. Multiple procedures can create a "commitment" effect in which the eyewitness recognizes a lineup member from a previous identification procedure rather than from the time the perpetrator was viewed during the crime.[86]

5. Training Dispatchers: When a dispatcher is provided with an incomplete description of the perpetrator, there are more opportunities to ensnare the innocent. Researchers are identifying ways of asking non-leading follow-up questions to those who report viewing a crime so that dispatchers are able to obtain fuller descriptions of perpetrators when 911 calls come in.[87] Once there is a scientific foundation for a stronger dispatcher protocol, the Innocence Project will issue policy recommendations that will assure more detailed descriptions of those who commit crimes. This is of particular importance given the overrepresentation of people of color in street stops by law enforcement. Court rulings have noted that Black men, in particular, who are often viewed with suspicion and seek to avoid police interactions for legitimate reasons—these rulings have cited incomplete descriptions as a contributing factor to the unfounded police stop.[88] Arguably, fuller descriptions of suspects through improved dispatcher protocol and training can help to avoid unwarranted street stops that ensnare the innocent and could potentially lead to more wrongful convictions.

The Innocence Project will also continue to advocate for the abolition of "in-court identifications."[89] In-court identifications,

85. *See* REEVALUATING LINEUPS, *supra* note 66, at 15.

86. *See* Nancy K. Steblay & Jennifer E. Dysart, *Repeated Eyewitness Identification Procedures with the Same Suspect*, 5 J. APPLIED RES. MEMORY & COGNITION 284, 285 (2016).

87. *See* Brittany P. Kassis, 911 Dispatchers: Their Role as Evidence Collectors 23–34 (Dec. 2017) (Masters thesis) (on file with CUNY Academic Works).

88. "Lacking any information about facial features, hairstyles, skin tone, height, weight, or other physical characteristics, the victim's description 'contribute[d] nothing to the officers' ability to distinguish the defendant from any other black male' wearing dark clothes and a 'hoodie' in Roxbury." *See* Zeninjor Enwemeka, *Mass. High Court Says Black Men May Have Legitimate Reason to Flee Police*, WBUR NEWS (Sept. 20, 2016), https://www.wbur.org/news/2016/09/20/mass-high-court-black-men-may-have-legitimate-reason-to-flee-police [https://perma.cc/QQH7-8KGM].

89. Connecticut and Massachusetts have both curtailed in-court identifications. In 2016, the Connecticut Supreme Court held that witnesses cannot make an

which typically follow other out-of-court identification procedures, mask problems with those previous procedures and invite the jury to focus only on the identification procedure they witness themselves in the courtroom, which is the least reliable or probative procedure possible. For instance, when one considers that confidence can be artificially inflated through confirming feedback by law enforcement to the witness at the time when the first identification was made, meaning that an uncertain witness's confidence can be—even unintentionally—manufactured, the in-court identification provides no additional evidentiary value but instead promises to prejudice fact-finders.[90] Introducing a reliable out-of-court identification should be ample proof of identity.[91]

B. False Confessions

One of the most counterintuitive aspects of human behavior is the decision to self-incriminate, and in particular, to do so falsely. While the general public and lawmakers understandably believe a false confession is anomalous—we wouldn't falsely confess to a serious crime unless a gun was pointed at our heads—we have discovered through DNA-based exonerations that it is a frequent contributing factor to wrongful convictions, present in nearly 30% of our DNA exonerations.[92] In homicide exonerations, it is the most common contributing factor to false conviction among the DNA cases.[93] And while counterintuitive to most, sometimes the decision to falsely confess to a crime is a perfectly rational choice given the circumstances of the interrogation.

A person might falsely confess to a crime he or she did not commit due to stress, exhaustion, disorientation and confusion, feelings of inevitability and hopelessness, the threat—or perceived threat—of violence or adverse treatment of the suspect and/or loved ones by law enforcement, fear of a harsher punishment for a failure to confess, substance use, mental limitations, among

in-court identification unless they knew the defendant prior to witnessing the crime, already identified the defendant in an out-of-court procedure, or the defendant's identity is not contested. *See* State v. Dickson, 141 A.3d 810, 836–37 (Conn. 2016). The Massachusetts Supreme Court held in 2014 that without a prior out-of-court identification procedure, in-court identifications could only be made where "good reason" exists. *See* Commonwealth v. Crayton, 21 N.E.3d 157, 169 (Mass. 2014).

90. *See* IDENTIFYING THE CULPRIT, *supra* note 67, at 109–11.

91. *See id.* at 110–11.

92. *DNA Exonerations in the United States*, *supra* note 1.

93. *See id.*

others.[94] While there are some particularly vulnerable groups, including young people and people with cognitive deficits or mental illnesses,[95] it is important to understand that mentally competent adults are capable of, and often do provide, false confessions.[96] Even more troubling is the fact that judges and juries uncritically believe confessions when confronted with them, since, historically, it was nearly impossible to discern a true confession from a false one.[97]

This is particularly troubling when one considers the fact that false confessions are persuasive enough to overpower exculpatory DNA evidence and have the ability to trump scientific certainty in the minds of fact-finders. One such example is Juan Rivera of Lake County, Illinois, an innocent man who was convicted of the rape and murder of an 11-year-old girl on the basis of a false confession, even after DNA testing of the semen recovered from the deceased excluded him, at the time of the trial, as the possible contributor. He was eventually exonerated after spending twenty years in prison.[98] Shockingly, it is not uncommon for confession evidence to trump the power of exculpatory DNA evidence, as can be seen in many of the DNA-based confession exonerations.[99] Indeed, cases like Juan's demonstrate that confessions have more impact on jury verdicts than other, more potent, forms of evidence.[100]

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94. *See, e.g.*, Saul M. Kassin et al., *Police-Induced Confessions: Risk Factors and Recommendations*, 34 LAW & HUM. BEHAV. 3, 14–22 (2010) [hereinafter *Police-Induced Confessions*].

95. *Id.* at 19. The outsized weight given to confessions has been known for some time. DNA reveals the catastrophic consequences. *See* Colorado v. Connelly, 479 U.S. 157, 174 (1986) (Brennan, J., dissenting) ("Our distrust for reliance on confessions is due, in part, to their decisive impact upon the adversarial process. Triers of fact accord confessions such heavy weight in their determinations that 'the introduction of a confession makes the other aspects of a trial in court superfluous, and the real trial, for all practical purposes, occurs when the confession is obtained.'" (quoting E. CLEARY, MCCORMICK ON EVIDENCE 316 (2d ed. 1972)).

96. *See Police-Induced Confessions supra* note 93, at 20–21; *see also* Richard A. Leo, *False Confessions: Causes, Consequences, and Implications*, 37 J. AM. ACAD. PSYCHIATRY & L. 332, 335 [hereinafter Leo, *False Confessions*].

97. *Police-Induced Confessions*, *supra* note 93, at 5; Leo, *False Confessions*, *supra* note 95, at 333.

98. *See Juan Rivera*, NAT'L REGISTRY OF EXONERATIONS, https://www.law.umich.edu/special/exoneration/Pages/casedetail.aspx?caseid=3850 [https://perma.cc/UHB3-W3MG].

99. *See generally* Saul M. Kassin, *Why Confessions Trump Innocence*, 67 AM. PSYCHOLOGIST 431 (2012).

100. *See* Saul M. Kassin, *False Confessions: Causes, Consequences, and Implications for Reform*, 17 CURRENT DIRECTIONS PSYCHOL. SCI. 249, 252 (2008).

There are several reasons why fact-finders may find a confession more convincing than DNA evidence. One explanation is that people have a strong tendency to believe statements that fly in the face of self-interest.[101] Yet post-conviction exonerations have shown that there are a number of reasons why a person may issue an erroneous confession, including those cited above, despite the disservice it does to their case.

Another reason that confessions may sometimes overpower DNA evidence is the notion that confessions must be true if they contain accurate details about the crime, including non-public details that could have been known only to the perpetrator. Adding to this perception is the fact that police are—at least in theory—trained to minimize the risk of false confessions. Indeed, the experienced detective deliberately holds back from the press and the community certain details of the crime scene, so that when a suspect is ultimately apprehended and tells the police, "I did it," the police can test the veracity of the admission based on whether the suspect is able to provide the held-back details during interrogation.[102] Logically, to corroborate the admission, the non-public details must originate with and be volunteered by the suspect.[103] These withheld details are usually facts that cannot be guessed or learned through the media or community gossip.[104] Typically, a police chief or prosecutor declines to answer a reporter's question because doing so would reveal some crime scene details the police

101. *See* Leo, *False Confessions*, *supra* note 95, at 333.

102. For more than three decades, the leading text used by law enforcement emphasized the importance of the suspect revealing non-public facts about the case that only the true perpetrator could have known or that could be independently verified. *See* FRED INBAU ET AL., CRIMINAL INTERROGATION AND CONFESSIONS 173, 183, 191 (3rd ed. 1986).

103. *See Police-Induced Confessions*, *supra* note 93, at 25.

104. The held-back details could involve something unusual about the crime scene such as that the perpetrator left silver dollars covering the eyes of the deceased, took with him a particular item of clothing belonging to the victim, or hid the weapon in an unusual place. *See, e.g.*, *Earl Washington*, NAT'L REGISTRY OF EXONERATIONS https://www.law.umich.edu/special/exoneration/Pages/casedetail.aspx?caseid=3721 [https://perma.cc/Y5TL-H6CW]. Earl Washington, a man with significant intellectual deficits, wrongly convicted of rape and murder, was fed the detail that he hid his bloody t-shirt, previously found by the police, in the top drawer of the victim's dresser. *Id.* Bruce Godschalk's confession included the non-public fact that the rapist had removed a tampon from the victim and threw it beneath her nightstand, where it had been previously recovered by police. *See* Richard A. Leo et al., *Promoting Accuracy in the Use of Confession Evidence: An Argument for Pretrial Reliability Assessments to Prevent Wrongful Convictions*, 85 TEMP. L. REV. 759, 762 (2013) [hereinafter *Promoting Accuracy in the Use of Confession Evidence*].

have decided to hold back. The assertion at trial by a detective that a confession contained non-public details that only the police and perpetrator could know frequently becomes the centerpiece of the prosecutor's case.

Post-conviction exonerations, however, have provided new insight into the source of this sort of inside information. Given that the false confessor was actually innocent and had nothing to do with the crime, these non-public, held-back details most likely could not have originated with him. Rather, the more plausible interpretation is that the police contaminated the evidence by intentionally or inadvertently feeding the non-public details to the suspect during interrogation. Once the confession has been contaminated by the police, the internal control for determining the veracity of the "I did it" has been rendered worthless. In sixty-two of the first sixty-six false confession DNA exonerations, the police had contaminated the confession with inside information.[105]

1. Recording of Custodial Interrogations

The primary reform sought by the innocence community to both reveal and deter false confessions was the call for the mandatory recordation of custodial interrogations. The uninterrupted recording of interrogations is a foundational reform in that it (1) creates a record of what transpires during the course of an interrogation, including the interaction that leads to a confession;[106] (2) ensures that a suspect's rights are protected in the interrogation process;[107] (3) creates a possible deterrent against improper and coercive interrogation techniques that might be employed absent the presence of a recording device;[108] and (4) alerts investigators, prosecutors, judges, and juries if the suspect has

105. Brandon L. Garrett, *Contaminated Confessions Revisited*, 101 VA. L. REV. 395, 404 (2015).

106. In almost all the false confession cases, no part of the interrogation was recorded. Police most often relied on statements hand-written or typed by the police and signed by the suspect. In several of the false confession cases, the final confession was recorded. However, the hours of custodial interrogation leading up to the dramatic climax were not. Without the recording of the entire interrogation there is no way to tell whether the non-public facts originated with the accused or the police. *See False Confessions & Recording Of Custodial Interrogations*, INNOCENCE PROJECT, https://www.innocenceproject.org/false-confessions-recording-interrogations/ [https://perma.cc/YWN4-L6ZU]

107. *Id.*

108. *Id.*

mental limitations or other vulnerabilities that make them more susceptible to a false confession.[109]

The innocence community has prioritized the passage of legislation and encouraged court action through case law and court rules to mandate the electronic recording of interrogations. This advocacy has led to adoption of the practice by more than half the states, the District of Columbia, and federal agencies.[110] Since 2003, the number of states requiring law enforcement agencies to electronically record at least some custodial interrogations has risen from two to twenty-seven.[111] In 2014, the Department of Justice issued a policy directing federal law enforcement agencies, including the FBI, the DEA, and the ATF, to electronically record interrogations for individuals suspected of any federal crime.[112]As is the case with other reform efforts, many opportunities exist to improve existing laws and policies, including the broadening of crime categories for which mandated recording is required and enhanced compliance through stronger remedies, such as suppression when

109. *Id.*

110. *See* CAL. PENAL CODE § 859.5 (West 2019); COLO. REV. STAT. ANN. § 16-3-601 (West 2018); CONN. GEN. STAT. ANN. § 54-1o (West 2017); 725 ILL. COMP. STAT. ANN. § 5/103-2.1 (West 2003); KAN. STAT. ANN. § 22-4620 (West 2017); 25 ME. REV. STAT. ANN. § 2803-B(1)(K) (2004); MD. CODE CRIM. PROC. §2-402 (West 2007); MICH. COMP. LAWS. ANN. § 763.7 (West 2012); MO. ANN. STAT. § 590.700 (West 2009); MONT. CODE ANN. § 46-4-407 (West 2009); NEB. REV. STAT ANN. § 29-4501 (West 2008); NEV. REV. STAT. ANN. § 171.1239 (West 2019), N.M. STAT. ANN. § 29-1-16 (West 2006); N.Y. CRIM. PROC. LAW § 60.45 (McKinney 2017); N.C. GEN. STAT. Ann. § 15A-211 (West 2011); OKLA. STAT. ANN. tit. 22, § 22 (West 2019); OR. REV. STAT. ANN. § 133.400 (West 2010); IND. R. EVID. 617 (2011); N.J. R. EVID. 3.17 (2005); OHIO REV. CODE ANN. § 2933.81 (West 2016); TEX. CODE CRIM. PROC. ANN. art. 2.32, 38.22 (West 2017); UTAH R. EVID. 616 (2016); 13 VT. STAT. ANN. tit. 13, § 5581 (2014); WASH. REV. CODE ANN. § 9.73.090 (West 2011); WIS. STAT. ANN. § 972.115 (West 2005); Mallot v. State, 608 P.2d 737, 742 n.5 (Alaska 1980); Commonwealth v. DiGiambattista, 813 N.E.2d 516, 534 (Mass. 2004); State v. Scales, 518 N.W.2d 587, 592 (Minn. 1994).

111. *See* Brandon L. Bang et al., *Police Recording of Custodial Interrogations: A State-By-State Legal Inquiry*, 20 INT'L J. POLICE SCI. & MGMT. 1, 10. *See also* Saul Kassin & David Thompson, *Opinion: Videotape All Police Interrogations*, N.Y. TIMES (Aug. 1, 2019), https://www.nytimes.com/2019/08/01/opinion/police-interrogations-confessions-record.html [https://perma.cc/U9BC-P5XZ]; *Oklahoma Becomes 25th State to Require Recording of Interrogations*, INNOCENCE PROJECT (May 10, 2019), https://www.innocenceproject.org/governor-signs-landmark-laws-for-preventing-wrongful-convictions/ [https://perma.cc/T2MU-L7RX]; VA. CODE ANN. § 19.2-390.04 (West 2020); NEV. REV. STAT. ANN. § 171.1239 (West 2019).

112. *See* Memorandum from James M. Cole, Deputy Att'y Gen., to Assoc. Att'y Gen. et al. 2 (May 12, 2014), http://s3.documentcloud.org/documents/1165406/recording-policy.pdf [https://perma.cc/VYU8-YG8X].

interrogations are not recorded and a narrower articulation of allowable exceptions to the mandate.

2. Where We Want to Go

Reliability Assessments

Whereas reliability is the lynchpin of admissibility for eyewitness testimony,[113] and *Daubert* and Federal Rule of Evidence 702 mandate a reliability finding as a threshold for forensic expert testimony to be admissible,[114] the Supreme Court has held there is no constitutional reliability requirement for the admissibility of confessions. Under *Colorado v. Connelly*, the Due Process Clause merely requires a showing of voluntariness, and the protection is limited to excluding statements secured through unduly coercive police interrogation.[115] Extreme coercion, even rising to the level of brutality, to squeeze a confession out of a suspect, if committed by a private person, does not violate due process.[116] However, such behavior, as well as other less extreme police interview practices, can render a confession objectively unreliable. Since in *Connelly* the respondent's lawyers only argued that the confession was involuntary, the Court did not address the question of its reliability. In fact, the Court invited states to enact statutes to restrict a confession's admissibility to those deemed reliable: "A statement rendered by one in the condition of respondent might be proved to be quite unreliable, but this is a matter to be governed by the evidentiary laws of the forum."[117] Our goal is to have states take up the Court's invitation and enact measures to ensure the reliability of a confession.

A pre-trial assessment of reliability is particularly important since so many false confessions resulted from police contamination of the confession as discussed above. In theory, contamination of the confession could be factored into a finding that it was involuntary—if the suspect simply parrots whatever he is told by the police, his will was probably overborne. However, very few of the trial courts that presided over exoneration cases considered contamination as a factor in assessing voluntariness.[118] Instead, rather than

113. Manson v. Brathwaite, 432 U.S. 98, 114 (1977).

114. *See* FED. R. EVID. 702; Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579, 597 (1993).

115. Colorado v. Connelly, 479 U.S. 157, 169–70 (1986).

116. *See id.*

117. *See id.* at 167.

118. *See* People v. Thomas, 22 N.Y.3d 629, 642 (2014) (reversing trial court's denial of motion to suppress coerced confession); Warney v. State, 16 N.Y.3d 428, 436 (2011) (finding the trial court prematurely dismissed the claim when it failed

evaluating the totality of the facts, most courts found the confession voluntary and hence admissible as long as the police provided complete *Miranda* warnings and the defendant knowingly and voluntarily waived them.[119] Observance of *Miranda* became a shorthand for a careful examination of all the facts.[120] In the false confession/false admission[121] DNA exoneration cases that went to trial, admissibility hearings were almost always held, and courts invariably resolved the swearing contest between police and accused in favor of the police.[122] Since every one of these people was actually innocent, as proven by DNA evidence, we know that their confessions were unreliable. There needs to be a change in pre-trial admissibility hearings; if not, courts will continue to routinely admit false and fabricated confessions which will be received by the fact finder as the most persuasive evidence of guilt.We will be urging states to evaluate the reliability of the confession at the same hearing that assesses voluntariness. With widespread electronic recording of the entire custodial interrogation, the court is in a much better position to watch or listen to the tape and thus review the objective record, ignore the swearing contest, and determine whether the non-public details originated with the accused or with the police.[123] In addition to non-public facts, a confession can be found to be reliable if it leads to the discovery of new evidence previously unknown to the police (e.g., the murder weapon or property stolen from the victim)[124] and in the case of multiple defendants, whether, in addition to the above, the co-defendants' statements are consistent with one another.[125]

Improved Interrogation Methods

Most police agencies in the United States, in stark contrast to their European counterparts, are allowed by courts to employ psychologically coercive yet legally permissible interrogation tech-

to consider that police conduct may have led to inclusion of non-public details in Warney's coerced confession).

119. *See Police-Induced Confessions*, *supra* note 93, at 27; Richard A. Leo, *Questioning the Relevance of* Miranda *in the Twenty-First Century*, 99 MICH. L. REV. 1000, 1025–26 (2001).

120. *See Police-Induced Confessions*, *supra* note 93, at 27.

121. In the first forty false confession DNA exonerations that went to trial, twenty-eight exonerees had received pre-trial admissibility hearings and all confessions were regarded as admissible. *See* Garrett, *supra* note 104, at 402 n.29.

122. *See Promoting Accuracy in the Use of Confession Evidence*, *supra* note 103, at 782–83.

123. *See* Leo, *False Confessions*, *supra* note 95, at 342.

124. *Promoting Accuracy in the Use of Confession Evidence*, *supra* note 103, at 792–93.

125. *Id.* at 805–06.

niques including knowingly lying to the subject in order to get a confession. These confrontational techniques, rather than information-gathering, are guilt-presumptive. The lies, deceptions, and implied albeit false promises of leniency can induce innocent people to give up, sometimes eventually believing that they must have committed the crime although they have no memory of doing so.

First, law enforcement is permitted by the Supreme Court's interpretation of the Constitution to employ what is described as the "false evidence ploy," whereby interrogators may tell suspects, for instance, that forensic evidence—that has never been tested or may not exist—links the suspect to evidence collected at the crime scene.[126] Suspects may be told that a bloody fingerprint located at the crime scene "matches" the suspect's fingerprint, or that the suspect has failed a polygraph test.[127] The police can also legally lie to the suspect by saying that his co-defendant or the victim of the crime has implicated him.[128] In the case of the Exonerated Five (previously known as the Central Park Five case) in New York City and in the Englewood Four case in Chicago, factually innocent suspects broke down and confessed after the police misrepresented that their friends and associates not only confessed but also implicated them in the crime.[129] In other cases, after being falsely told by the police that their fingerprints or DNA were recovered at the

126. *See* United States v. Ruiz, 536 U.S. 622, 629 (2002); Katie Wynbrant, *From False Evidence Ploy to False Guilty Plea: An Unjustified Path to Securing Convictions*, 126 YALE L.J. 545, 546 (2016) (citing Richard J. Ofshe & Richard A. Leo, *The Decision to Confess Falsely: Rational Choice and Irrational Action*, 74 DENV. U.L. REV. 979, 1030–31, 1041–42, 1050 (1997)).

127. *See* Miriam S. Gohara, *A Lie for a Lie: False Confessions and the Case for Reconsidering the Legality of Deceptive Interrogation Techniques*, 33 FORDHAM URB. L.J. 101, 104 (2006).

128. *See id.* Many of the false confession cases involved multiple teenage defendants whose confessions implicated one another. The first defendant would be told falsely that his friend in the next room implicated him and said he was "the heavy." He would then be told by the police that they doubted he was the primary culprit but that the only way he could avoid a terrible result was to implicate his friend. Once he implicates the friend, he is told that for it to appear to be truthful, he must put himself at the crime scene as well. *See* Barry C. Feld, *Police Interrogation of Juveniles: An Empirical Study of Policy and Practice*, 97 J. CRIM. L. & CRIMINOLOGY 219, 263–67 (2006); *see also* Jill Filipovic, *The Painful Lessons of the Central Park Five and the Jogger Rape Case*, GUARDIAN (Oct. 5, 2012), https://www.theguardian.com/commentisfree/2012/oct/05/central-park-five-rape-case [perma.cc/LGK6-Q4WY].

129. *See* Filipovic, *supra* note 127; Steve Mills & Todd Lighty, *Prosecutor admitted in FBI report that Englewood Four teens coerced into false confessions*, CHI. TRIB. (Nov. 17, 2016), https://www.chicagotribune.com/news/ct-prosecutor-framed-englewood-four-met-20161117-story.html [https://perma.cc/N72H-W5YM].

crime scene, innocent men confessed simply to end the anxiety of the stressful interrogation, confident that when the physical evidence was retested, it would exclude them.[130] In many cases, subsequent testing did exclude them but to no avail—the confession diluted the significance of the other exculpatory evidence.[131] This sort of explicit deception should be banned from police practice, and the Innocence Project has begun to initiate advocacy efforts in this area.[132]

A murkier area of the traditional American interrogation method is when deception is less explicit. Known as a "minimization" technique, law enforcement can suggest to the suspect that he will receive better treatment in the legal process if he agrees to confess.[133] This can take the form of minimizing the seriousness of an offense and by extension its legal consequence by, for instance, suggesting to the suspect that his actions may constitute self-defense rather than criminal activity. While it is well-established anecdotally through DNA exoneration cases that minimization techniques have the propensity to yield false confessions, they are also part of a limited number of tools available to law enforcement to extract confessions from the actually guilty. When more research has been established to develop a reasonable balance between the prevention of wrongful convictions and the collection of reliable confessions, deception that implies leniency must be more fully addressed. Indeed, states have begun to take notice of the deleterious effects of the use of deception during interrogations, and through the advocacy of the Innocence Project and its partners, both the Illinois[134] and Oregon[135] legislatures in 2021 banned law enforcement deception during juvenile interrogations. It is our hope that the age of the suspect does not bear on future legislative proposals, however, the passage of these two laws within one legislative session speaks to a growing awareness of the need for reform in this area.

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130. *See* Leo, *False Confessions*, *supra* note 95, at 338.

131. *Id.* at 340.

132. The International Investigative Interviewing Research Group, among others, has moved away from the guilt presumptive and confrontational approach to one in which police try to develop a rapport with the subject. *See* Harriet Jakobsson Öhrn & Christer Nyberg, *Searching for Truth or Confirmation?*, IIIRG BULLETIN, June 2010, at 11.

133. Gohara, *supra* note 124, at 130.

134. 705 ILL. COMP. STAT. ANN. 405/5-401; 725 ILL. COMP. STAT. ANN. 5/103-2.2.

135. OR. REV. STAT. Ann. § 487.

Research does establish, however, that prolonged interrogations lead to less reliable confessions.[136] It has been demonstrated that protracted isolation during the course of an interrogation incentivizes innocent suspects to confess.[137] Psychologists and other experts caution against interrogations that last more than four hours and have observed that those interrogations that exceed six hours just by virtue of their length lead to false confessions, indicating that lengthy interrogations in general are inherently coercive.[138] This is supported by exonerations that were at least partially predicated on the presence of a false confession.[139] In fact, 80% of 125 proven false confessions were derived from interrogations that lasted more than six hours.[140] Therefore, the Innocence Project has begun to explore state-based exoneration data and jurisdictional practice to identify jurisdictions that are most prone to extended interrogations to explore further policy reforms in this area.

C. Forensic Science Reform

The misapplication of forensic science by prosecution experts, primarily lab technicians and forensic practitioners employed by law enforcement-controlled crime laboratories, is the second most common contributing factor to wrongful convictions in our DNA exoneration dataset.[141] Forty-four percent of all the original trials resulting in wrongful convictions were undermined by forensic "experts" either exaggerating the probative value of the evidence, relying on testing methods that had never been scientifically validated as accurate and reliable, or fabricating data or results.[142] Mischaracterization of the evidence occurred frequently in pattern and impression disciplines where crime labs attempt to match a hair, bullet, tire tread, or shoe print found at a crime scene with a particular suspect. Despite the fact that for decades, prosecutors relied on this type of expert witnesses and evidence to "prove" that the defen-

136. *Police-Induced Confessions*, *supra* note 93, at 16.

137. *Id.*

138. Stephen A. Drizin & Richard A. Leo, *The Problem of False Confessions in the Post-DNA World*, 82 N.C. L. Rev. 891, 948 (2004); *False and Coerced Confessions*, Ctr. Wrongful Convictions, http://www.law.northwestern.edu/legalclinic/wrongfulconvictions/issues/falseconfessions/ [https://perma.cc/RE3F-4FGE].

139. *See* Drizin & Leo, *supra* note 135, at 957.

140. *See id.* at 948.

141. *See Wrongful Convictions Involving Unvalidated or Improper Forensic Science that Were Later Overturned Through* DNA Testing, Innocence Project, https://www.innocenceproject.org/wp-content/uploads/2016/02/DNA_Exonerations_Forensic_Science.pdf [https://perma.cc/MLC5-ENKV].

142. *Id.*

dant (or the defendant's head, gun, truck tire, or sneaker) was the source of the crime scene evidence, a landmark report in 2009 from the National Academy of Sciences concluded that most of the expert testimony routinely admitted by state and federal judges for years lacked an essential scientific basis.[143] In the NAS report, "Strengthening Forensic Science in the United States: A Path Forward," the Academy made clear that "[w]ith the exception of nuclear DNA analysis, no forensic method has been rigorously shown to have the capacity to consistently and with a high degree of certainty demonstrate a connection between evidence and a specific individual or source."[144] How could such errors have gone on for so long without intervention?

We have observed that most prosecutors and criminal defense lawyers are not well-versed in the scientific method. They chose law over a career in science or medicine. The judiciary, more often than not, is unfamiliar with the fundamentals of science. The compromised system of the last hundred years encourages the bench and bar to litigate and rule on the admissibility of the proffered "scientific" evidence so that twelve scientifically illiterate jurors can decide the appropriate weight the evidence should be given. This problem was exacerbated by the fact that when an "expert" takes the witness stand, preferably in a white lab coat, her testimony takes on a "mystic infallibility."[145] Not only is this systemic failure responsible for many miscarriages of justice but, in contrast to clinical laboratories, forensic labs never enjoyed the financial support, research, or oversight of independent regulatory bodies, which could provide a backstop ensuring the integrity of forensic devices and test results. In the family of scientists, forensic practitioners have always been treated as "poor stepchild[ren]."[146] Whereas the entire population cares profoundly and personally about the accuracy and reliability of our medicine and clinical tests, people accused or convicted of crimes comprise a comparatively limited historical constituency for ensuring rigor in crime labs. The latter, up until the revelation of wrongful convictions, simply had no clout.

143. *See* NAT'L RESEARCH COUNCIL, STRENGTHENING FORENSIC SCIENCE IN THE UNITED STATES: A PATH FORWARD 110 (2009).

144. *Id.* at 7.

145. United States v. Allison, 498 F.2d 741, 744 (D.C. Cir. 1974).

146. KELLY PYREK, FORENSIC SCIENCE UNDER SIEGE: THE CHALLENGES OF FORENSIC LABORATORIES AND THE MEDICO-LEGAL INVESTIGATION SYSTEM 17 (2007).

Before the consumer is subjected to most clinical drugs and diagnostic tests, extensive basic and applied research is the norm[147] and is often financially supported by grants from huge national enterprises, such as the National Science Foundation and the National Institutes of Health. Nothing comparable ever existed for forensics. Once new drugs undergo extensive research and clinical trials to establish safety and efficacy (or, in the case of diagnostic tests, accuracy and reliability), they are evaluated by the Food and Drug Administration before they can be marketed. There is no FDA or any other federal agency to pass on the accuracy and reliability of a forensic test before it is used in a court of law.[148] In addition to the FDA, the Federal Clinical Laboratory Improvement Act and the Commission on Medicare and Medicaid Services provide further regulation on the reliability of clinical tests.[149] The only test for forensics is the so called "crucible of the court" which for generations meant no meaningful test at all.[150] The jury could consider the evidence as long as a lay judge found the forensics admissible. Prior to the publication of the 2009 NAS report, there was a near-total absence of validation studies or studies of accuracy and error rates for many other non-DNA forensic technologies.[151]

Through countless dismissals before trial and post-conviction exonerations, DNA has revealed the fallibility of the original evidence used to indict or convict innocent people. DNA testing also demonstrates the extensive testing and investigation that a scientific theory or method must pass through before it is accepted as an

147. *See* Jonathan R. Genzen, *Regulation of Laboratory-Developed Tests: A Clinical Laboratory Perspective*, 152 AM. J. CLINICAL PATHOLOGY 122, 123 (2019).

148. *See* Simon A. Cole, *Who Will Regulate American Forensic Science?*, 48 SETON HALL L. REV. 563, 568–73 (2018).

149. *See Research Testing and Clinical Laboratory Improvement Amendments of 1988 (CLIA) Regulations*, CTRS. FOR MEDICARE & MEDICAID SERVICES, https://www.cms.gov/Regulations-and-Guidance/Legislation/CLIA/Downloads/Research-Testing-and-CLIA.pdf [https://perma.cc/C7Q6-2V9H].

150. Proponents of the "crucible" expected defense lawyers to mount a vigorous challenge to the bona fides of the proffered evidence. Given that most forensics arise in street crime, most defendants are poor and represented by overworked and underfunded public defenders and the best and the brightest scientists choose to work where the funding is. In reality, there never was a crucible. Nor has the judiciary been helpful. It didn't make much difference whether a trial judge applied the 1923 Frye test or the 1993 Daubert test of admissibility. Studies indicate that judges almost always rule in favor of prosecutors when they offer forensic evidence, against defense lawyers when they offer it, for defense lawyers when they represent large corporations in civil suits and against individual civil plaintiffs attempting to introduce scientific evidence to prove causation. *See* NAT'L RESEARCH COUNCIL, *supra* note 140, at 96.

151. *See* Cole, *supra* note 145, at 569.

accurate and reliable technique for investigating and adjudicating criminal cases. Before DNA was ever used in a criminal court, there were years of extensive basic and applied research. Shortly after introduction in court, the National Academy of Sciences established laboratory standards for forensic DNA.[152] Congress singled out DNA for legislation to perpetuate quality standards for forensic DNA testing in federal, state, and local crime labs.[153] The failure of most other forensic techniques to pass through any of these steps supports the conclusion that many of the non-DNA forensic methods were not developed in accordance with basic principles of science. Unsurprisingly, scandals in the crime lab were soon to follow.

1. Initial Reforms: Leveraging Scandals and Reconsidering the Science

The Innocence Project leveraged the frequent scandals in state and federal crime labs to secure audits of past cases, one of the most notable of which involved the FBI's acknowledgement that its hair microscopy unit offered false testimony in 96% of the hundreds of cases they reviewed in an audit requested by the Innocence Project and the National Association of Criminal Defense Lawyers.[154] The impetus for the review was three post-conviction DNA-based exonerations in which three different FBI hair examiners had provided erroneous statements in reports or testimony at trial.[155] As a result of the audit, the Department of Justice wrote an

152. *See generally* NAT'L RESEARCH COUNCIL, DNA TECHNOLOGY IN FORENSIC SCIENCE (1992); *see also* NAT'L RESEARCH COUNCIL, THE EVALUATION OF FORENSIC DNA EVIDENCE (1996).

153. *See* John M. Butler, *The Future of Forensic DNA Analysis*, 370 PHIL. TRANSACTIONS OF THE ROYAL SOC'Y B 1, 2–3 (2015).

154. Press Release, FBI, FBI Testimony on Microscopic Hair Analysis Contained Errors in at Least 90 Percent of Cases in Ongoing Review (Apr. 20, 2015), 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 [https://perma.cc/DN28-RBTL] [hereinafter FBI Press Release].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 Several years earlier the FBI had acknowledged that their testimony in composite bullet lead analysis cases—matching a bullet found at the crime scene to a particular box of cartridges recovered from the defendant's home—was without scientific support. Letter from John Crabb, Jr., Special Counsel, DOJ, to Deforest R. Allgood, District Attorney (May 6, 2013) (on file with authors). The admission came after the critical 2009 report produced by the National Academy of Sciences. *See* NAT'L RESEARCH COUNCIL, *supra* note 140 at 107 n.82.

155. *See* Press Release, FBI, Root Cause Analysis for Microscopic Hair Comparison Analysis Completed (Apr. 14, 2019), https://www.fbi.gov/news/pressrel/press-releases/root-cause-analysis-for-microscopic-hair-comparison-analysis-completed [https://perma.cc/EW2D-NZBY] [hereinafter Root Cause Press Release];

unprecedented letter to all U.S. Attorneys instructing them to waive all procedural bars to post-conviction review,[156] so that the challenges to these convictions could be decided on the merits. The FBI, with help from the National Association of Criminal Defense Lawyers and the Innocence Project, tracked down hundreds of convicted people and notified them in writing that the prosecutions' expert testimony or reports were erroneous and not supported by science. Thus far, sixteen people have had their convictions vacated based on the flawed FBI hair evidence, and ten of those individuals have been exonerated.[157]

The problem of exaggerating the probative value of evidence—a failure of compliance, in our view, with the principles of statistics—was not restricted to hair microscopy. For the same reasons, the FBI routinely exceeded the limits of science in their reporting and testimony in many pattern-and-impression disciplines, including fibers, shoe prints, tire marks, tool marks, and ballistics.[158] We requested similar audits of reports and testimony in the other compromised forensic methods, and by 2015, the DOJ was developing a plan.[159] After some time, however, the DOJ became reluctant to initiate reviews that could call into question the integrity of hundreds of other convictions and ended the process in 2017.[160]

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see also Timothy Bridges, NAT'L REGISTRY OF EXONERATIONS, https://www.law.umich.edu/special/exoneration/Pages/casedetail.aspx?caseid=4845 [https://perma.cc/42CL-RDNC].

156. *See* 28 U.S.C. § 2254 (2020); FBI Press Release, *supra* note 151.

157. *See Wrongful Convictions*, *supra* note 138; Innocence Staff, *How Santae Tribble's Wrongful Conviction Prompted Review of the FBI's Use of Hair Analysis and Inspired the Innocence Project's Research*, INNOCENCE PROJECT (July 15, 2020), https://innocenceproject.org/santae-tribble-inspired-hair-analysis-review-work/ [https://perma.cc/FD5R-7GWR].

158. *See* PRESIDENT'S COUNCIL OF ADVISORS ON SCI. & TECH., FORENSIC SCIENCE IN CRIMINAL COURTS: ENSURING SCIENTIFIC VALIDITY OF FEATURE-COMPARISON METHODS 1–4 (2016), https://obamawhitehouse.archives.gov/sitefs/default/files/microsites/ostp/PCAST/pcast_forensic_science_report_final.pdf [https://perma.cc/C2AC-KCRN] [hereinafter PCAST REPORT]; Brandon L. Garrett & Peter J. Neufeld, *Invalid Forensic Science Testimony and Wrongful Convictions*, 95 VA. L. REV. 1, 14–15 (2009); *Sample Letter to Prosecutors*, FED. BUREAU OF INVESTIGATION, https://www.fbi.gov/file-repository/sample-letter-to-prosecutors.pdf/view [https://perma.cc/UR52-YCAD].

159. *See* FBI Press Release, *supra* note 151.

160. *See* Spencer S. Hsu, *Sessions Orders Justice Dept. to End Forensic Science Commission, Suspend Review Policy*, WASH. POST (Apr. 10, 2017), https://www.washingtonpost.com/local/public-safety/sessions-orders-justice-dept-to-end-forensic-science-commission-suspend-review-policy/2017/04/10/2dada0ca-1c96-11e7-9887-1a5314b56a08_story.html [https://perma.cc/JZ7C-KX2H].

The bombshell revelation that much of what passed for reliable evidence for decades in criminal prosecutions had in fact never been validated scientifically, coupled with the statistic that almost half the DNA exonerations involved serious problems with the forensic evidence relied upon in the original conviction, led to the creation of the National Commission on Forensic Science ("NCFS"), and critically, to the inclusion for the first time of academic leaders in the basic sciences to establish the needs of the forensics community moving forward.[161] The Commission passed multiple recommendations which were adopted by the U.S. Attorney General and the Director of the National Institute of Standards and Technology.[162]

Unfortunately, one of the early actions of the Trump Administration was the shuttering of the NCFS.[163] This necessitated a shift in our forensics advocacy efforts from the federal level to the state level. Our current state-based policy work is focused on attempts to set up structures that are well-positioned to react to the types of forensic misconduct, negligence, and other adverse events that demonstrably give rise to wrongful convictions. The Texas Forensic Science Commission is one such success story.[164] Recently, the In-

161. *See* NAT'L COMM'N ON FORENSIC SCI., U.S. DEP'T OF JUST., REFLECTING BACK—LOOKING TOWARD THE FUTURE 3, 4 (2017), https://www.justice.gov/archives/ncfs/page/file/959356/download [https://perma.cc/CH3F-2URM].

162. *See, e.g.*, Memorandum from Loretta E. Lynch, Att'y Gen., to Heads of Department Components 1–2 (Nov. 23, 2015), https://www.justice.gov/ncfs/file/799001/download [https://perma.cc/8RJL-FBA8]https://www.justice.gov/ncfs/file/799001/download; Memorandum, 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 and the Organization of Scientific Area Committees 3 (Aug. 4, 2015), https://www.justice.gov/archives/ncfs/file/761051/download [https://perma.cc/64U2-AJU5].

163. *See* Hsu, *supra* note 157.

164. The Texas Forensic Science Commission was created in 2005 to "investigate allegations of professional negligence or professional misconduct that would substantially affect the integrity of the results of a forensic analysis conducted by an accredited laboratory." *See About Us*, TEX. FORENSIC SCI. COMM., https://txcourts.gov/fsc/about-us/ [https://perma.cc/F4SX-KVB5]. Over the years, the relevant bill was revised to expand the Commission's investigative duties and responsibilities and expand its oversight duties by tasking it with the responsibility of accrediting the state's crime laboratories and the establishment of a forensic disciplines licensing program. *See* TEX. CODE CRIM. PROC. ANN. art. 38.01 §§ 4, 4-a (West 2019). The Commission has successfully created a system and culture of self-disclosure by forensic science service providers and a robust and transparent process for investigating complaints, as well as enabled first-of-its-kind reforms. Among these reforms are the establishment of a defendant notification process, *see* TEX. FORENSIC SCI. COMM., TEXAS DEPARTMENT OF PUBLIC SAFETY HOUSTON REGIONAL CRIME LABORATORY SELF-DISCLOSURE 15, 27 (2013), https://txcourts.gov/media/

nocence Project worked with the New England Innocence Project, the Committee on Public Counsel Services, the Boston College Innocence Program, and other partners to create a forensic science commission in the wake of enormous scandals that were exposed in two crime laboratories in Massachusetts.[165] In one, a rogue analyst falsified records and fabricated drug test results without ever actually conducting the drug tests. More than 21,000 convictions were vacated.[166] We are hopeful that the Commonwealth of Massachusetts, as it begins its work, will look to the experience of Texas, which has done more than any other state in response to the misapplication of forensic science.[167]

An additional state-based remedy, which was described above, is the "change in science" statute or court rule that enables a convicted person to petition to vacate the conviction if they can show that the scientific community no longer supports the type of foren-

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1441008/12-02-final-report-texas-dps-houston-regional-crime-lab-self-disclosure-20130405.pdf https://txcourts.gov/media/1441008/12-02-final-report-texas-dps-houston-regional-crime-lab-self-disclosure-20130405.pdf[https://perma.cc/P9C5-5PRE], calling for a moratorium on bitemark comparison, *see* TEX. FORENSIC SCI. COMM., FORENSIC BITEMARK COMPARISON COMPLAINT FILED BY NATIONAL INNOCENCE PROJECT ON BEHALF OF STEVEN MARK CHANEY 15, 15-6 (2016), https://www.txcourts.gov/media/1440871/finalbitemarkreport.pdf [https://perma.cc/W9ZP-Y7CA], and raising public awareness about the use of unreliable forensic practices. Numerous exonerations have flowed from the work of the Commission, as well as wrongful convictions prevented.

165. *See CJPP Applauds Massachusetts Criminal Justice Reform Bill and the Establishment of a Forensic Science Commission*, CRIM. JUST. POL'Y PROGRAM (Apr. 25, 2018), http://cjpp.law.harvard.edu/news-article/cjpp-applauds-massachusetts-criminal-justice-reform-bill-establishment-forensic-science-commission [https://perma.cc/P9XW-8UTC]; Jon Schuppe, *Epic Drug Lab Scandal Results in More than 20,000 Convictions Dropped*, NBC NEWS (Apr. 18, 2017), https://www.nbcnews.com/news/us-news/epic-drug-lab-scandal-results-more-20-000-convictions-dropped-n747891 [https://perma.cc/6XYP-VUVEhttps://www.nbcnews.com/news/us-news/epic-drug-lab-scandal-results-more-20-000-convictions-dropped-n747891]; *More Trouble for Massachusetts*, INNOCENCE PROJECT (Apr. 5, 2013), https://www.innocenceproject.org/more-trouble-for-massachusetts-crime-labs/ [https://perma.cc/EKP6-YRS2].

166. Fifteen years ago, we identified false reporting and fabricated results in the Boston Police Crime Lab but the authorities refused to take any remedial action. But after dozens more scandals and hundreds of exonerations nationwide, government correction and remediation was more forthcoming. *See Neil Miller*, NAT'L REGISTRY OF EXONERATIONS, https://www.law.umich.edu/special/exoneration/Pages/casedetail.aspx?caseid=3472 [https://perma.cc/LJ9U-V8UA]; Innocence Staff, *Massachusetts Supreme Judicial Court to Vacate 21,587 Drug Conviction Cases*, INNOCENCE PROJECT (Apr. 19, 2017), https://innocenceproject.org/historic-massachusetts-drug-vacation/ [https://perma.cc/ZLC6-REDS].

167. *See supra* note 161 and accompanying text.

sic testimony offered at the original trial or if, as a result of new scientific understanding, the prosecution's trial expert repudiates his earlier testimony.[168]

Another reform focuses on a forensic laboratory's ethical duty to correct errors of which they are aware and to notify all potentially affected parties even if the serious error is first identified many years after the conviction.[169] Texas adopted similar language modeled on the NCFS.[170]

Finally, when a serious error is revealed, the laboratories should proceed with a root cause analysis ("RCA"). The purpose of the RCA is not to point the finger at individuals who made the mistakes or engaged in misconduct. Rather, it is to identify the systemic (root and cultural) causes of the error and to recommend systemwide remedies to avoid recurrence. In response to the FBI's hair forensics scandal, the Bureau took the unprecedented step of retaining an external entity to identify the root causes of the persistence of erroneous microscopic hair comparison analysis testimony and reports in its laboratory from the 1950s through the 1990s.[171] The August 2019 report found that insufficient quality management and institutional resistance to external expertise contributed to the persistent and uncorrected errors.[172] We urge all forensic labs as well as police and prosecutors to conduct RCAs whenever a serious error or misconduct undermines the integrity of the criminal legal process. Only by addressing the institutional root causes will an entity sufficiently reduce the risk of future errors.

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168. *See supra* notes 51–56 and accompanying text.

169. Memorandum from Loretta E. Lynch, Att'y Gen., to Heads of Dep't Components 1 (Sept. 6, 2016) (on file with Department of Justice Archive).

170. 37 TEX. ADMIN. CODE § 651.219 (2019). *S*ee Nat'l Comm'n Forensic Sci., National Code of Ethics and Professional Responsibility for the Forensic Sciences (2016) https://www.justice.gov/archives/ncfs/page/file/788576/download [https://perma.cc/68AB-HASL].

171. *See* ABS GROUP, ROOT AND CULTURAL CAUSE ANALYSIS OF REPORT AND TESTIMONY ERRORS BY FBI MHCA EXAMINERS 12 (2018), https://vault.fbi.gov/root-cause-analysis-of-microscopic-hair-comparison-analysis/root-cause-analysis-of-microscopic-hair-comparison-analysis-part-01-of-01/view [https://perma.cc/8CTZ-2EQP] [hereinafter ROOT CAUSE REPORT]; *see also* Root Cause Press Release, *supra* note 152. By the late 1990s, the FBI Lab began treating hair microscopy as a screening test. If an association was suspected, DNA testing on the hair would follow. *See* ROOT CAUSE REPORT, *supra*, at 3.

172. Specifically, the report found "overconfidence by Laboratory management in the belief that they did not need outside expertise (e.g., legal, statistical and quality assurance) and did not see the value in formalized processes" and that "[i]nstead of acting like impartial scientists, the FBI Laboratory culture embraced FBI agent-examiners acting like detectives." *See* ROOT CAUSE REPORT, *supra* note 168, at 13, 26.

2. Where We Want to Go

Our state-based strategy cannot and should not supplant the need for uniform standard-setting at the federal level. The 2009 Report from the NAS recommended the creation of a new science-based federal agency to regulate forensics.[173] The NAS report made it clear that the Department of Justice could not take on that role because of its relationship to law enforcement and prosecutors and the potential for conflicts of interest "between the needs of law enforcement and the broader needs of forensic science," including serving the defense function "equally."[174] For a variety of budgetary and other reasons, a new federal agency was not realistic. The National Commission on Forensic Science recommended that the National Institute of Standards and Technology ("NIST") accept the responsibility of assessing the foundational scientific validity[175] and reliability of all forensic methods and that only those with demonstrable validity be used to adjudicate criminal prosecutions.[176] This approach was endorsed in 2016 by the President's Council of Advisors on Science and Technology ("PCAST"),[177] critiquing the criminal legal system for continuing to routinely admit unscientific evidence.There would be consistent and more effective compliance with the explicit mandate of Rule 702 of the Federal Rules of Evidence if a federal science-based agency took on this task. The federal rule, also adopted by twenty-three states, permits an expert to testify in the form of an opinion or otherwise if the testimony is the product of reliable principles and methods and the expert has reliably applied the principles and methods to the facts of the case.[178]

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173. *See* NAT'L RESEARCH COUNCIL, *supra* note 140, at 18.

174. *Id.* at 17 (noting the "strong consensus in the 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").

175. "Foundational validity" for a forensic science method requires "that it be shown, based on empirical studies, to be repeatable, reproducible, and accurate, at levels that have been measured and are appropriate to the intended application." PCAST REPORT, *supra* note 155, at 4.

176. NIST was originally ruled out by the NAS, primarily due to its limited ties to the forensic community. *See* NAT'L RESEARCH COUNCIL, *supra* note 140, at 17. But in the last ten years that relationship has deepened in research pilot projects to assess foundational validity, and in standard setting through the creation of the Organization of Scientific Area Committees (OSAC) for Forensic Science. *See* ORG. SCI. AREA COMMS., ANNUAL REPORT 1 (2016), https://www.nist.gov/system/files/documents/2016/09/13/osac_annual_report_2015-2016.pdf [https://perma.cc/H5AX-KSDY].

177. *See* PCAST REPORT, supra note 155, at 14.

178. *See* FED. R. EVID. 702; Brandon L. Garrett & Chris Fabricant, *The Myth of the Reliability Test*, 86 FORDHAM L. REV. 1559, 1598–99 (2018).

However, in practice, few judges have rigorously accepted their gatekeeping function. A review of hundreds of state and federal cases citing the reliability requirement of Rule 702 revealed that most courts merely pay lip service to the requirement, almost always admitting unvalidated and unreliable evidence and inadequately citing to precedent or the credentials of the expert.[179] Both the NAS and PCAST have found that the most effective way to assess scientific reliability is for a disinterested federal science-based agency to do so.[180] The disparities between prosecution and defense resources, including access to experts, and a lack of scientific knowledge of the bench and criminal bar, render the adversary system a poor choice for an informative and technical scientific assessment. Delegating the task to NIST, as the NCFS and PCAST recommended, would make it easier for the courts to rule on admissibility if an objective scientific body published the methods it concluded were valid and reliable.

D. Regulation of Jailhouse Informants

In-custody or "jailhouse informants" are detained or incarcerated people who provide information or testimony against a defendant often with the expectation of receiving leniency or other benefits. The jailhouse informant is most frequently called as a prosecution witness to claim that a defendant, usually lodged in the same or an adjoining cell as the informant, confessed to the crime for which he is charged.[181] Jailhouse informants, only one form of incentivized witnesses, have testified for the prosecution falsely in nearly one-fifth of DNA-based exoneration cases.[182] Jailhouse informants play a disproportionate role in homicide cases and have been found, along with false confessions, to be a leading cause of wrongful conviction in capital cases.[183] They have no incentive to testify truthfully or disincentive to lie. The real or perceived benefits of their testimony include: sentence reduction, special inmate privileges, monetary payments, and reduced charges in pending criminal cases.[184]

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179. *See* Garrett & Fabricant, *supra* note 175, at 1564.

180. *See* NAT'L RESEARCH COUNCIL, *supra* note 140, at 18; PCAST REPORT, *supra* note 155, at 57.

181. *See Informing Injustice*, *supra* note 57.

182. *See id.*

183. Brandon L. Garrett, *Judging Innocence*, 108 COLUM. L. REV. 55, 88, 92–93 (2008).

184. *See* Alexandra Natapoff, *Snitching: The Institutional and Communal Consequences*, 73 U. CIN. L. REV. 645, 652, 658 (2004).

In Los Angeles, for instance, a Grand Jury investigation into jailhouse informant abuses found that detained people would offer information to the government in anticipation of receiving benefits in the future or putting cooperation "in the bank."[185] Informants are aware that their testimony is of greater use to the government if they can state they have not received or been promised a benefit, so it is therefore in their interest to articulate a pretextual reason, such as moral reasons, for their cooperation.[186]

The jail and prison experience also teaches would-be informants that benefits will often be conferred in exchange for information even if they are not expressly promised. The Los Angeles Grand Jury Report found that jailhouse informant inmates understood being placed in a cell next to a high-profile defendant as an implicit instruction from the government to elicit information from that defendant, even if no governmental actor explicitly requested such information.[187] Indeed, more than a quarter-century after the inquiry into the dishonor brought by the Los Angeles informant system, a major scandal emerged in neighboring Orange County, in which the prosecutor's office was colluding with the sheriff's office to intentionally place high-profile defendants in cells close to known informants.[188] Of course, this phenomenon isn't limited to California—a man is currently on death row in Pinellas County, FL, based in large part on the word of a jailhouse informant who testified or supplied information in thirty-seven cases and was himself accused of crimes involving moral turpitude, including pedophilia.[189] In Philadelphia, PA, the murder conviction and

185. *See* L.A. Cnty., Report of the 1989-90 Los Angeles County Grand Jury: Investigation of the Involvement of Jail House Informants in the Criminal Justice System in Los Angeles County (1990) [hereinafter Los Angeles Grand Jury Report].

186. Professor Alexander Natapoff, Testimony Before the Timothy Cole Exoneration Review Commission: Regulating Jailhouse Informants to Prevent Wrongful Conviction (June 28, 2016), https://www.txcourts.gov/media/1401449/Meeting-Book.pdf https://www.txcourts.gov/media/1401449/Meeting-Book.pdf[https://perma.cc/Z6H9-S7MB].

187. *See* Los Angeles Grand Jury Report, *supra* note 182, at 25–26.

188. *See* Press Release, Dep't of Justice, Justice Department Opens Investigations of Orange County, California, District Attorney's Office and Sheriff's Department (Dec. 15, 2016), https://www.justice.gov/opa/pr/justice-department-opens-investigations-orange-county-california-district-attorney-s-office-0 [https://www.justice.gov/opa/pr/justice-department-opens-investigations-orange-county-california-district-attorney-s-office-0https://perma.cc/38NS-VPM7].

189. *See* Pamela Colloff, *How This Con Man's Wild Testimony Sent Dozens to Jail, and 4 to Death Row*, N.Y. Times (Dec. 4, 2019), https://www.nytimes.com/2019/12/04/magazine/jailhouse-informant.html [https://perma.cc/DD6X-Y279].

death sentence of Walter Ogrod was vacated and dismissed with the concurrence of the District Attorney who concluded, based on a lengthy re-investigation, that Ogrod was innocent. When Mr. Ogrod was first tried in 1993, a mistrial was declared when the jury deadlocked eleven-to-one for acquittal. Three years later, he was retried. In the interim, the prosecution's case became much stronger with the addition of two jailhouse informants who claimed that Ogrod had confessed to them in great detail. At the second trial, the jury convicted after a mere ninety minutes of deliberation and unanimously recommended a death sentence, which the court pronounced. One of the informants was nicknamed "the Monsignor" because he was a serial informant, having been a cooperating witness in a dozen homicide cases. The second informant, who testified at the retrial, falsely denied a history of mental illness and denied receiving any benefits. Years later it was revealed that "the Monsignor" had enlisted his wife to obtain additional details about the personal life of Ogrod to help the second informant embellish the fraud. Medical records turned over in 2020 demonstrated that the second informant had a lengthy history of mental illness including schizophrenia which had never been disclosed to the defense.[190]

According to Law Professor Alexandra Natapoff, a leading scholar on the informant phenomenon, the use of incentivized witnesses causes a:

> disturbing marriage of convenience: both snitches and the government benefit from inculpatory information while neither has a strong incentive to challenge it. The usual protections against false evidence, particularly prosecutorial ethics and discovery, may thus be unavailing to protect the system from informant falsehoods precisely because prosecutors themselves have limited means and incentives to ferret out the truth.[191]

Given the inherent potential for false testimony and its close association to wrongful conviction, we have started a national public education and advocacy campaign to strengthen the regulation and accountability mechanisms of informant use to reduce the risk of fabricated evidence being introduced at trial. Reforms being sought on the state-level require rigorous criteria to be used to assess the reliability of informant testimony in criminal proceedings.

190. *See Walter Ogrod*, NAT'L REGISTRY OF EXONERATIONS (June 25, 2020), https://www.law.umich.edu/special/exoneration/Pages/casedetail.aspx?caseid=5752 [https://perma.cc/JQY5-3JAB].

191. Alexandra Natapoff, Comment, *Beyond Unreliable: How Snitches Contribute to Wrongful Convictions*, 37 GOLDEN GATE U. L. REV. 107, 108 (2006).

This reform would which require a centralized tracking systems that collect a range of information, including the informant's history of testifying in other cases and the benefits promised and ultimately conferred upon them. The collection and tracking of this information should also require its disclosure, which promises a reduction in their use. Over the past four years, the Innocence Project has successfully lobbied six states for laws that will ensure tracking and disclosure of key information.[192] Illinois and Connecticut also require pre-trial reliability hearings before jailhouse informants can testify.[193] The effort to reform the informant system is in its infancy and the Innocence Project will monitor how the various advocacy initiatives work in practice in an effort to determine which policies that would best be replicated.

Resistance to Reforms

While reforms structured around more reliable and accurate evidence would seem politically viable, the innocence agenda can still be met with distrust and resistance. In the past few years, for instance, we saw significant resistance to a number of state-based proposals that sought to simply regulate and track the use of informants.[194]

Nor is resistance limited to informant reform. In our home state of New York, which had one of the most restrictive discovery laws in the country and a bail framework weighted heavily towards incarceration, reform eluded us for more than forty years and was met with robust opposition from many elected prosecutors.[195] Pros-

192. *See* Act Concerning the Testimony of Jailhouse Witnesses, Pub. L. No. 19-131, 2019 Conn. Sess.; NEB. REV. STAT. ANN. § 29-4704 (West 2019); 725 ILL. COMP. STAT. ANN. § 5-115/21 (West 2018); TEX. CODE CRIM. PROC. ANN. art. 39.14 (West 2017); OKLA. STAT. ANN. tit. 12, § 2510 (West 2014); H.B. 637, 441st Sess. of the Gen. Assemb. (MD 2020). See also Dave Collins, *Lying Prisoners: New Laws Crack Down on Jailhouse Informants,* HARTFORD COURANT (Sept. 16, 2019), https://www.courant.com/news/connecticut/hc-news-connecticut-jailhouse-informants-20190916-ttahvkqiubeahj2gikyyf5dn7y-story.html [https://perma.cc/93F9-ZV3V].

193. *See* Collins, *supra* note 189.

194. *See* Ellen Reasonover, *Midlands Voices: Why Are Nebraska Prosecutors Blocking Justice?*, OMAHA WORLD-HERALD (Apr. 9, 2018), https://www.omaha.com/opinion/midlands-voices-why-are-nebraska-prosecutors-blocking-justice/article_4da33b31-f346-58ee-8928-eb3cd7b7c192.html [https://perma.cc/42MV-DY35]; *see also* Mitch Ryals, *Bill Would Require Prosecutors to Fess Up to Confidential Informant Deals*, INLANDER (Jan. 26, 2017), https://www.inlander.com/Bloglander/archives/2017/01/26/bill-would-require-prosecutors-to-fess-up-to-confidential-informant-deals [https://perma.cc/GWQ8-8CBC].

195. *See generally* CTR. CT. INNOVATION, DISCOVERY REFORM IN NEW YORK: MAJOR LEGISLATIVE PROVISIONS (May 2019)https://www.courtinnovation.org/sites/default/files/media/document/2019/Discovery-NYS_Full.pdf; Jake Offenhartz,

ecutors and law enforcement engaged in a sophisticated media campaign appealing to public fear that successfully rolled back recently-enacted bail reform and, to a lesser extent, discovery.[196] We still see large states that turn a blind eye to the most basic wrongful conviction reforms, like simple scientific research-supported modifications to lineups that have already been adopted in nearly half the states.[197] Law enforcement often opposes laws that mandate recording of interrogations; yet once implemented police not only adapt,[198] they often become proponents for expanding recording to more crime categories. In forensics, many practitioners and their allies in law enforcement resist any external oversight that will give world class research scientists a voice in determining what methods are valid and reliable and what standards should be obligatory at every crime lab.[199] This was the rationale for shutting down the National Commission on Forensic Science and replacing it with an in-house Department of Justice forensics czar plucked from a local prosecutor's office.[200] So despite major progress, there is much work left to be done in these traditional areas of innocence reform.

IV.
FUTURE AND ASPIRATIONAL WORK: INNOCENCE AS A WEDGE FOR BROAD CRIMINAL LEGAL REFORM

The revelation of wrongful convictions has been, and could be in the future, a more powerful advocacy tool in advancing other progressive criminal legal policies not exclusively in the wheelhouse of the "innocent." For instance, the innocence movement has had a

Movement to Reform New York's Discovery Statute Faces a Familiar Foe: Prosecutors, THE APPEAL (Mar. 6, 2018), https://theappeal.org/movement-to-reform-new-yorks-discovery-statute-faces-a-familiar-foe-prosecutors-4b2bd2f8ac/ [https://perma.cc/QC3Q-6XNF].

196. *See* Pete DeMola, *Local Opposition Mounting to Criminal Justice Reforms*, DAILY GAZETTE (Nov. 12, 2019), https://dailygazette.com/article/2019/11/12/local-opposition-mounting-to-criminal-justice-reforms [https://perma.cc/S5CR-6XH5].

197. *See Eyewitness Identification Reform*, *supra* note 57.

198. THOMAS P. SULLIVAN, CTR. WRONGFUL CONVICTIONS, POLICE EXPERIENCES WITH RECORDING CUSTODIAL INTERROGATIONS 6–8 (2004)http://mcadams.posc.mu.edu/Recording_Interrogations.pdf, http://mcadams.posc.mu.edu/Recording_Interrogations.pdf [https://perma.cc/XBP2-WCVK].

199. *See, e.g.*, Jon Schuppe, *'We Are Going Backward': How the Justice System Ignores Science in the Pursuit of Convictions*, NBC NEWS (Jan. 23, 2019), https://www.nbcnews.com/news/us-news/we-are-going-backward-how-justice-system-ignores-science-pursuit-n961256 [https://perma.cc/QQ8L-QF99].

200. See Hsu, *supra* note 157.

transformative impact on the effort to end capital punishment. It is the risk of executing an innocent that has caused many lawmakers and jurists, who would otherwise validate the morality of the death penalty, to rethink their position on the ultimate and irreversible sentence. There have been twenty-eight capital convictions cleared by DNA[201] and, in all, 172 people have been exonerated after they had been sentenced to death.[202] In 2008, Justice John Paul Stevens wrote in his *Baze v. Rees* concurring opinion: "Whether or not any innocent defendants have actually been executed, abundant evidence accumulated in recent years has resulted in the exoneration of an unacceptable number of defendants found guilty of capital offenses."[203] Notably, the risk of executing the innocent has been explicitly mentioned by governors in three states that declared moratoriums.[204] Similarly, we expect to expand our programmatic work and hope the innocence argument will soon exert lasting influence in the national campaign to end mass incarceration and achieve a much greater measure of racial justice. The United States has close to 5% of the world's population and nearly 25% of the world's incarcerated people.[205] The power of the innocents' narratives coupled with empirical data and scientific research should continue to move lawmakers to ask fundamental questions about the operation, fairness, equity, and efficacy of the entirety of criminal investigations and adjudications.

Our expanded agenda, a few elements of which are described below, will rely on three guiding principles that will focus our work through policy campaigns and communications strategies, employ-

201. *Innocence Database*, DEATH PENALTY INFO. CTR., https://deathpenaltyinfo.org/policy-issues/innocence-database?filters%5BdnaEvidence%5D=yes [https://perma.cc/TC5A-J4ZE].

202. *Facts About the Death Penalty*, DEATH PENALTY INFO. CTR., https://files.deathpenaltyinfo.org/documents/pdf/FactSheet.f1601652961.pdf [https://perma.cc/68QF-3L6Z].

203. Baze v. Rees, 553 U.S. 35, 86 (2008) (Stevens, J., concurring).

204. Ca. Exec. Order No. N-09-19 (Mar. 13, 2019), https://www.gov.ca.gov/wp-content/uploads/2019/03/3.13.19-EO-N-09-19.pdf [https://perma.cc/384S-SAC4] ; Press Release, John Kitzhaber, Governor of Or., Statement on Capital Punishment (Nov. 22, 2011), https://media.oregonlive.com/pacific-northwest-news/other/Microsoft%20Word%20-%20Final%20Final%20JK%20Statement%20on%20the%20Death%20Penalty.pdf [https://perma.cc/RF9W-TAUQ]; Wallace McKelvey, *Gov. Tom Wolf Declares Moratorium on Death Penalty in PA*, PENN LIVE (Feb. 13, 2015), https://www.pennlive.com/politics/2015/02/gov_tom_wolf_declares_moratori.html [https://perma.cc/U66W-M8YQ].

205. *See, e.g.*, *Mass Incarceration*, ACLU, https://www.aclu.org/issues/smart-justice/mass-incarceration [https://perma.cc/P9MR-M283].

ing innocence as a wedge to assist in the deconstruction of the volume-based criminal legal system:

A global theory of reliability;

A commitment to fairness, equity, and human rights; and

An obligation to expose, rectify, and prevent racial injustice.

A. Exposing the Plea Problem

Given that 95% of all criminal convictions are secured by a guilty plea—generally one that avoids exposure to the most extreme potential sentence—instead of a trial, and that 18% of the nation's men and women whose innocence was ultimately proven through post-conviction DNA testing and other means pleaded guilty to crimes they did not commit,[206] wrongful convictions help expose the profound unfairness of the penalty for exercising one's right to trial. The abject injustice of an innocent viewing a guilty plea as a rational choice is reflective of a fundamental distrust of a process that leverages the threat of an extremely long sentence in exchange for the acceptance of a plea accompanied by a shorter sentence.[207]

We have long exposed the problem of innocent people pleading guilty to serious felonies (e.g., sexual assault and homicide) in the post-conviction setting.[208] At the Congressional Black Caucus's annual policy conference in 2017, the Innocence Project presented on the guilty plea phenomenon and highlighted the story of an exonerated man from New Jersey, Rodney Roberts, who spent decades in confinement for a crime he didn't commit.[209] When describing why he pled guilty, he alluded to a fundamental distrust of the criminal process when he tragically said, "I knew I was inno-

206. *Why Do Innocent People Plead Guilty to Crimes They Didn't Commit?*, INNOCENCE PROJECT, https://guiltypleaproblem.org/ [https://perma.cc/97W3-387J].

207. Notably, this also raises the question of how the state takes any comfort in the excessive incarceration of a person who exercised her Constitutional rights to go to trial when the state would otherwise be satisfied with a drastically reduced sentence had she pleaded guilty.

208. *See id*.

209. *See* Audrey Levitin, *How Rodney Roberts' Case Exposes the Injustice of Guilty Pleas*, INNOCENCE PROJECT (Sept. 13, 2018), https://www.innocenceproject.org/what-rodney-roberts-case-exposes-about-injustice/ [https://perma.cc/B5RF-GMZV]; *Join Congressional Black Caucus Panel: "Innocence Denied: Exploring the Intersection of Race, Bail & Guilty Pleas,"* INNOCENCE PROJECT (Sept. 18, 2017), https://www.innocenceproject.org/congressional-black-caucus-panel-innocence-denied/ [https://perma.cc/RQG3-ERYG].

cent, but I had to choose the lesser of two evils. It's like you got to pick between Satan and Lucifer."[210]

Rodney's experience pleading guilty to a serious, violent felony crime should make it all the more obvious that someone would more easily make the same choice as Rodney when faced with a seemingly less significant sanction for a misdemeanor plea. Thirteen million misdemeanors are filed each year[211] and more than 95% of misdemeanor convictions result from guilty pleas.[212] While it is true that the consequences are less dire for a misdemeanor conviction than for a felony, they can still be life-changing, resulting in people being "jailed, fined, supervised, tracked, marked and stigmatized."[213] Their conviction could impact employment, child custody, housing, immigration status, and government benefits.[214] Further, they may be disqualified for loans and professional licenses, and their credit status and financial health may be destroyed.[215] Misdemeanor convictions are far from insignificant.

Moving forward, we hope to target the vast misdemeanor system, which over-criminalizes conduct as a means of extending power over marginalized populations. To stigmatize people with all the consequences of criminal prosecution by charging them with very minor offenses or victimless charges cannot meaningfully be defended with a just underlying theory of punishment. Even in the category of misdemeanors for which there may be some justification, the full penal consequences are simply too extreme to justify the conviction.[216] Prosecution for possession of an open container of alcohol, vagrancy, or simple trespass, is offensive to the principles of diversity, inclusion, and fairness.[217] Initially we can educate policymakers and the general public. We can start research-based policy reform efforts that decrease the pressures on the innocent to plead guilty to crimes they did not commit and to decriminalize conduct which should not have been criminalized in the first place. We have already begun this work to address the larger coerced plea problem by participating in advocacy efforts for pretrial reforms,

210. Antoine Goldet, *Bad Deals: The Perils of Bargaining for Justice*, Reveal News (Aug. 28, 2016), https://www.revealnews.org/article/bad-deals-the-perils-of-bargaining-for-justice/ [https://perma.cc/FT6V-TV88].

211. Alexandra Natapoff, Punishment Without Crime 13 (2018).

212. *Id.* at 5.

213. *Id.* at 19–20.

214. *Id* at 20.

215. *Id.* at 20.

216. Jenny Roberts, *The Innocence Movement and Misdemeanors*, 18 B.U. L. Rev. 779, 818–21 (2018).

217. *See, e.g.*, *id.* at 812.

including reforming monetary bail and discovery laws and practices in various jurisdictions.[218]

B. Eliminating Unscientific Presumptive Drug Testing as a Basis for Detention or Conviction

As we explained above, most of forensic science has little oversight or input from the broader and more objective scientific community. Routinely, police stop people on the street or stop cars on the roads before lawfully or unlawfully searching the pedestrians or cars and their occupants and seizing items to test them "for the presence of controlled substances." In contrast to rape and murder, law enforcement's decision to focus on a particular target for a drug offense is not triggered by a victim, but generally by the police themselves. Police prioritize certain groups or individuals by applying the same racial biases utilized in selecting people, blocks, neighborhoods, or thoroughfares to surveil. Racial disparities in discretionary stops and low-level vehicular infraction stops are commonplace.[219] Although national studies confirm that the percentage of white and Black people who use illicit drugs is nearly equal, police and prosecutors again and again single out Black people for arrest and imprisonment.[220] Black people are far more likely to be wrongfully convicted of drug crimes than white people.[221]

Yet forensic tests quite frequently used in the field are merely "presumptive"—sensitive but not very specific with an unacceptably high rate of false positives for everyday household materials.[222] The

218. *See Innocence Project Gears Up to Launch New Guilty Plea Campaign*, INNOCENCE PROJECT (Jan. 9, 2017), https://innocenceproject.org/innocence-project-guilty-plea-campaign/ [https://perma.cc/FG9T-A7EY]. https://www.innocenceproject.org/innocence-project-guilty-plea-campaign/

219. *See generally*, Alexandra Natapoff, *The High Stakes of Low-level Criminal Justice*, 128 Yale L.J. 1648 (2019); ISSA KOHLER-HAUSMANN, MISDEMEANORLAND: CRIMINAL COURTS AND SOCIAL CONTROL IN AN AGE OF BROKEN WINDOWS POLICING (2018).

220. *See* AM. CIVIL LIBERTIES UNION, THE WAR ON MARIJUANA IN BLACK AND WHITE: BILLIONS OF DOLLARS WASTED ON RACIALLY BIASED ARRESTS 18 (2013) https://www.aclu.org/sites/default/files/field_document/1114413-mj-report-rfs-rel1.pdf [https://perma.cc/AFM7-DEAT].

221. *See* SAMUEL R. GROSS ET AL., NAT'L REGISTRY OF EXONERATIONS, RACE AND WRONGFUL CONVICTIONS IN THE UNITED STATES 16–17 (2017), http://www.law.umich.edu/special/exoneration/Documents/Race_and_Wrongful_Convictions.pdf [https://perma.cc/UP6R-ZK2E].

222. *See* Ryan Gabrielson & Topher Sanders, *How a $2 Roadside Drug Test Sends Innocent People to Jail*, N.Y. TIMES (July 7, 2016), https://www.nytimes.com/2016/07/10/magazine/how-a-2-roadside-drug-test-sends-innocent-people-to-jail.html [https://perma.cc/JRR4-J3UJ] [hereinafter *Roadside Drug Test*].

tests are applied by uniformed police rather than in a controlled laboratory environment. Presumptive drug testing has been inappropriately relied upon to arrest, prosecute, and convict the innocent. Even in states where, at trial, labs must first complete confirmatory testing, there is nothing to prevent a plea of guilty prior to trial based on nothing more than the presumptive test. For example, based on a faulty presumptive drug test following a roadside stop, Amy Albritton of Houston, Texas pled guilty to crack possession despite her innocence when she faced two years in detention.[223] She ultimately served twenty-one days and lost her job and her home.[224] A Fox News team in Dekalb County, Georgia found more than thirty "positive" tests indicating drug possession for crack, cocaine, and meth that were later shown to be breath mints, cotton candy, and headache medication, respectively.[225] A research study found that nine of ten prosecutor offices across the country accepted pleas based solely on a presumptive drug test.[226] Also, according to an exposé by The New York Times, more than 100,000 people each year plead guilty to drug possession in the wake of a presumptive field test.[227] Not only does this problematic method develop suspects through unvalidated forensic tests, it elicits guilty pleas from the innocent.[228]

The Innocence Project will launch a campaign that seeks to limit or prohibit reliance on presumptive testing as a basis for an arrest or guilty plea. We also plan to develop data resources and educate the public regarding racial disparities and the collateral consequences and costs of false arrests and pre-trial detention and continue to amplify the role of coerced guilty pleas in the misdemeanor setting. Finally, we will highlight the unfairness of the cash bail system and how it makes any detention based on presumptive testing much more likely to result in a coerced guilty plea.

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223. *See id.*

224. *See id.*

225. *See* Randy Travis, *Driver Wrongly Jailed After Field Test on Breath Mint Shows Positive for Crack*, FOX 5 ATLANTA (July 12, 2018), https://www.fox5atlanta.com/news/driver-wrongly-jailed-after-field-test-on-breath-mint-shows-positive-for-crack [https://perma.cc/8Y22-RQZW]. *See also* Randy Travis, *Police Delay Drug Arrests in Wake of FOX 5 I-Team Investigation Into Field Test Kits*, FOX 5 ATLANTA (Oct. 31, 2018), https://www.fox5atlanta.com/news/police-delay-drug-arrests-in-wake-of-fox-5-i-team-investigation-into-field-test-kits [https://perma.cc/MP9Q-WDZW].

226. *See Roadside Drug Test*, *supra* note 219.

227. *See id.*

228. *See* Ryan Gabrielson & Topher Sanders, *Confusion Over Drug Tests Highlights Lack of Training for Florida Officers*, PROPUBLICA (Nov. 22, 2016), https://www.propublica.org/article/confusion-over-drug-tests-highlights-lack-of-training-for-florida-officers [https://perma.cc/QU82-TS45].

C. Just Because it is Based on Science, Doesn't Mean it is Fair, Equitable, or Unbiased

We can expect that new policing technologies will be introduced more frequently and more rapidly in the near future. Without external oversight to assess accuracy, uncover implicit biases, or measure its adverse effects on people of color, privacy interests, and other human rights, there are few impediments or disincentives to the use of any tool that at least superficially is perceived as advancing a law enforcement purpose.

Many new technologies have the potential to adversely and disproportionately impact communities of color because of a reliance on biased historical data. For instance, "risk assessment" instruments rely on algorithms to determine pre-trial release, parole, probation, future dangerousness, sentencing, or even the deployment of police in neighborhoods for the next crime hot spot.[229] These algorithms apply math and computer technology to generate a set of directions used to predict the future based on information collected from the past.[230] The stated purpose is to make these very consequential decisions streamlined and more objective.[231] But although the algorithms may appear facially race-neutral, they are often based on historical variables and data correlated to race and poverty.[232] That historical data is itself influenced by racial, economic, and cognitive biases.[233] If we are not careful, uncritical reliance on algorithms can become a tool of further racial discrimination and of legitimizing other explicit and implicit biases.[234]

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229. *See Algorithms in the Criminal Justice System: Pre-Trial Risk Assessment Tools*, ELECTRONIC PRIVACY INFO. CTR., https://epic.org/algorithmic-transparency/crim-justice/ [hereinafter *Algorithms in the Criminal Justice System*] [https://perma.cc/MH8F-7S6H]

230. *Id.*

231. *Id.*

232. *See* Beth Schwartzapfel, *Can Racist Algorithms Be Fixed?*, MARSHALL PROJECT (July 1, 2019), https://www.themarshallproject.org/2019/07/01/can-racist-algorithms-be-fixed [https://perma.cc/7CHN-EV4D]*; Algorithms in the Criminal Justice System, supra* 226.

233. *See* Schwartzapfel, *supra* note 229. The misuse of algorithms has been referred to as "weapons of math destruction." KATHY O'NEIL, WEAPONS OF MATH DESTRUCTION 3 (2016). It is easier to identify false positives and retrain the algorithm than to identify false negatives that have already unfairly hurt the target community. *See* Richard Berk et al., *Fairness in Criminal Justice Risk Assessments: The State of the Art*, SOC. METHODS & RES. 31–35 (2017), https://crim.sas.upenn.edu/sites/default/files/Berk_Tables_1.2.2018.pdf [https://perma.cc/WM8N-7E6S].

234. Algorithms predict the future based on past behavior. For example, since police do not have a means to directly assess tomorrow's criminal hot spot,

New technologies also have the potential to impact and intrude on individual privacy, especially in the realm of DNA. Genetic genealogy combines traditional genealogy which uses documents and interviews to trace an individual's ancestry with a newer type of DNA testing commercially available at direct-to- consumer databases. These databases allow anyone to learn more about their ancestry or pre-dispositions to certain diseases and disorders. Already, the technique has been credited with solving more than seventy cold cases and leading to one exoneration of a wrongfully convicted innocent man.[235] In the simplest cold case, the blood or semen left by an unknown perpetrator (that could not otherwise be identified through CODIS, the FBI's national database) is tested using an array of hundreds of thousands of short DNA fragments or sequences. That profile is then uploaded to one of the publicly available databases to which consumers submit their own profiles to in an effort to learn about their ancestry, for adoptees to identify biological parents, or to identify and locate cousins or other relatives. No one expects the crime scene sample to make a perfect match to anyone in the database, but if one or two profiles in the database share a significant number of common fragments with the crime scene sample, then the data suggests that these profiles most likely are related to the perpetrator. Depending on the amount of DNA in common, they could be, e.g., first cousins, second cousins, second cousins once removed, third cousins, and so on. Once the source of the somewhat shared DNA is identified by the custodian of the consumer database, the genealogist takes over tracking that person's ancestry back to the great grandparents, and then reverses direction downward filling in all the offspring of the great grand-

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the algorithm is trained using prior arrest/location data as a proxy. *See* Schwartzapfel, *supra* note 229. But the prior arrest data is itself biased because police focused on communities of color rather than white neighborhoods. *Id.* Marijuana is smoked at the same rate in white and black communities, but the arrest rate for marijuana is much higher in black communities. *See The War on Marijuana in Black and White,* ACLU (June 2013), https://www.aclu.org/report/report-war-marijuana-black-and-white?redirect$^{C}_{R}$iminal-law-reform/war-marijuana-black-and-white [https://perma.cc/3MU4-SL5T]. Thus tomorrow's hot spot is far more likely to be a black neighborhood.

235. Paige St. John, *DNA Genealogical Databases Are a Gold Mine for Police, but with Few Rules and Little Transparency*, L.A. TIMES (Nov. 24, 2019), https://www.latimes.com/california/story/2019-11-24/law-enforcement-dna-crime-cases-privacy [https://perma.cc/F56Z-JQ65]https://www.latimes.com/california/story/2019-11-24/law-enforcement-dna-crime-cases-privacy; Mia Armstrong, *In an Apparent First, Genetic Genealogy Aids a Wrongful Conviction Case*, MARSHALL PROJECT (July 17, 2019), https://www.themarshallproject.org/2019/07/16/in-an-apparent-first-genetic-genealogy-aids-a-wrongful-conviction-case [https://perma.cc/LF7B-ZP8B].

parents, at least to those alive at the time the crime was committed. Ideally, the genealogist will identify the one person or few people in the family tree who were the right age and sex and could have been in the same city as the victim on the day the crime was committed. Law enforcement will then surreptitiously collect a drinking cup or discarded cigarette butt from those few suspects and, hopefully, secure a match to the crime scene sample. In the process, the experienced genealogist will have to overcome the unrecorded adoptions, unknown parentage and misattributed paternity—not infrequent when you go back two or three generations—that can create dead ends and mislead the investigator.[236]

Years ago, when courts upheld the right of police to force a suspect to provide a DNA sample, judges had to weigh the competing interests of the individual to genetic privacy and to freedom from police intrusion when there was at least sufficient cause to believe the subject committed the crime, against the public safety interest in identifying and apprehending the perpetrator of a serious crime. Judges understood that DNA collection was different from other types of police intrusion. DNA has the potential to reveal many personal and private health related details about the source and, indirectly, about the source's family. That awareness is one reason the United States does not have a universal DNA database in the hands of the government. When judges balanced the competing interests before ordering an accused to provide a DNA sample, one compelling factor that weighed heavily in favor of authorizing involuntary collection from suspects was that the thirteen or so DNA markers with which a suspect and crime scene sample were compared were "junk DNA" that did not code for phenotypical traits.[237] But in genetic genealogy, instead of thirteen or twenty

236. For a more detailed description of genetic genealogy and examples of its utility in actual cases, see generally Ellen M. Greytak et al., *Genetic Genealogy for Cold Case and Active Investigations*, 299 FORENSIC SCI. INT'L 103 (2019).

237. Or at least scientists did not yet know how the markers were expressed. *See* Richard Lempert, *Maryland v. King: An Unfortunate Supreme Court Decision on the Collection of DNA Samples*, BROOKINGS (June 6, 2013), https://www.brookings.edu/blog/up-front/2013/06/06/maryland-v-king-an-unfortunate-supreme-court-decision-on-the-collection-of-dna-samples/ [https://perma.cc/3WY6-QHMB]https://www.brookings.edu/blog/up-front/2013/06/06/maryland-v-king-an-unfortunate-supreme-court-decision-on-the-collection-of-dna-samples/; Jennifer K. Wagner, *Courts in Unsettled Territory Turn to the Map Available*: United States v. Mitchell, PRIVACY REP. (Apr. 2, 2012), https://theprivacyreport.com/2012/04/02/courts-in-unsettled-territory-turn-to-the-map-available-united-states-v-mitchell/ [https://perma.cc/ZF8M-WYZS]. The original thirteen marker test has been expanded to more than twenty markers, but their purpose remains unknown. *Laboratory Services: Combined DNA Index System (CODIS)*, FBI, https://www.fbi.gov/services/laboratory/

markers, the labs compare more than 600,000 markers and these markers were selected specifically because they reveal not only a person's ancestry but their genetic predisposition for various diseases and disorders.[238] Moreover, the procedure encourages collection, surreptitiously, of DNA samples not only from suspects who turn out to be innocent, but also from known innocent people just to obtain additional genetic information to further narrow the search.[239]

When the genealogist constructs the multi-generational family tree, the identities and relatedness of several hundred or more people who did not consent, most of whom did not even know they were related and definitely did not allow their DNA to be part of a commercial database, will become known and their relatedness mapped. For the first time, members who had unrecorded adoptions or misattributed paternity will be revealed even though they never sought to question the relatedness of the people who raised them. Investigators or other interested parties could potentially learn far more about the extended family's members' genetic indicators for disease and general well-being, even without their corresponding genetic data, simply by virtue of their relatedness. Additionally, there is the risk that some might, through deception, submit real or artificial genomes for uploading just so they can access the identity of other people in the database with matching segments of DNA known to correlate with health-related matters.[240] Normally, we would expect that a technology with such far reaching consequences to personal privacy and other civil liberties would first be reviewed for its ethical, legal, and social implications and a regulatory scheme effectively restricting disclosure of data in place before being rolled out in casework. But currently, with the excep-

biometric-analysis/codis [https://perma.cc/8D6J-254L]; JOHN M. BUTLER, ADVANCED TOPICS IN FORENSIC DNA TYPING: METHODOLOGY 99–139 (2012) (discussing Short Tandem Repeat (STR) loci and kits).

238. *See* Erika Check Hayden, *Genetics Extends the Long Arm of the Law*, KNOWABLE MAG. (Jan. 18, 2019), https://knowablemagazine.org/article/technology/2019/genetics-extends-long-arm-law [https://perma.cc/K8HN-A98W]https://www.knowablemagazine.org/article/technology/2019/genetics-extends-long-arm-law; Erin Murphy, *Law and Policy Oversight of Familial Searches in Recreational Genealogy Databases*, 292 FORENSIC SCI. INT'L e5, e5 (2018).

239. *See* Madison Pauly, *Police Are Increasingly Taking Advantage of Home DNA Tests. There Aren't Any Regulations to Stop It.*, MOTHER JONES (Mar. 12, 2019), https://www.motherjones.com/crime-justice/2019/03/genetic-genealogy-law-enforcement-golden-state-killer-cece-moore/ [https://perma.cc/PCL3-6CG7].

240. Michael D. Edge & Graham Coop, *Attacks on genetic privacy via uploads to genealogical databases*, ELIFE (Jan. 7, 2020), https://elifesciences.org/articles/51810 [https://perma.cc/BXZ5-5XYY]https://elifesciences.org/articles/51810.

tion of an interim and inadequate guideline prepared by the FBI,[241] there has been no federal legislation and only one state statute (Maryland) to meaningfully control forensic genetic genealogy.[242]

Facial recognition is another instance where technology has the potential to intrude excessively on people's privacy. Facial recognition systems enable the user (law enforcement and anyone else with access) to upload a facial photo of interest and translate the physical structure of the face to a mathematical formula relying on facial geometry.[243] The results are then compared to the facial geometry of many other photos populating the databank.[244] Most likely matches are spit out and ranked by degree of similarity.[245] Critically, the effectiveness of facial recognition requires the acquisition of large databanks of facial images.[246] This often means that our faces are added to these databases without our consent by using, e.g., our drivers' licenses, arrest photos (no matter how minor the infraction), and FBI, Homeland Security, and ICE datasets. A 2016 study found that half of the U.S. adult population are in law enforcement facial recognition databases.[247] But even these numbers are dwarfed by the algorithm developed and licensed to hun-

241. The FBI and DOJ issued a guideline in September 2019, but without either public discussion or sufficient input from medical bioethicists, privacy experts, or other stakeholders. *See* DEP'T OF JUST., INTERIM POLICY: FORENSIC GENETIC GENEALOGICAL DNA ANALYSIS AND SEARCHING (Sept. 2, 2019), https://www.justice.gov/olp/page/file/1204386/download [https://perma.cc/EL9W-UG2F]. Moreover, compliance is not mandatory, but merely recommended. Even as guidance it does not alter the behavior of state and local prosecutors who have jurisdiction over the overwhelming majority of crimes for which this technology is useful. The guidelines expressly permit surreptitious collection from persons who are not suspects if it could help develop leads. Presently, genetic genealogy is limited to the most violent crimes. *See id.* at 2, 4–6. But just as other forensic DNA databases were limited to serious felonies at the beginning but rapidly were expanded to include all felons and then arrestees, mission creep will likely broaden the use of genetic genealogy to any investigation a detective wishes to pursue.

242. Ellen Wright Clayton et al., *The Law of Genetic Privacy: Applications, Implications, and Limitations*, 6 J.L. & BIOSCIENCES 1 (2019). The authors conclude that only the new Maryland law (Chapter 681) enables meaningful control to individuals over disclosures of genetic related or derived information that may affect them.

243. *See Background*, THE PERPETUAL LINEUP, GEO. L. CTR. PRIVACY & TECH. (Oct. 18, 2016), https://www.perpetuallineup.org/background [https://perma.cc/ZU4T-FTFF]https://www.perpetuallineup.org/.

244. *See id.*

245. *See id.*

246. *See id.*

247. *See Executive Summary,* THE PERPETUAL LINEUP, GEO. L. CTR. PRIVACY & TECH. (Oct. 18, 2016), https://www.perpetuallineup.org/ [https://perma.cc/2ZDR-VFDT].https://www.perpetuallineup.org/

dreds of law enforcement agencies by Clearview AI.[248] Clearview enables the user to upload any photo and almost immediately get back social media and internet photos (scraped from Facebook, YouTube, and millions of other websites including employment, educational, and news sites) of the same person—a multi-billion image database—from which almost no one is excluded.[249] Even more dangerous is the fact that when the photos are revealed, so too are the links from which they came.[250] Thus instantly, the user not only learns the identity of the previously unknown subject, but also where they live, work, who their friends are, and many personal private facts.[251] The implicit biases held historically by a user will be perpetuated by facial recognition, with members of the more vulnerable groups more frequently the subject of surveillance and unwanted intrusion.[252] The disparate surveillance will be exacerbated by the reality that Black people are disproportionately more likely to have contact with police.[253] In addition to crime scene photos, police can upload a photo they take of an activist at a rally, a pedestrian who frequents a particular corner, or just about anyone they are curious about while on patrol.[254] None of these facial recognition systems are regulated, and, with the exception of San Francisco and a handful of small cities and towns, only a few localities have banned the use of these systems due to the very real diminution of privacy and concerns about the end of anonymity. There are no authentic state or federal limits, nor meaningful privacy protections, on the proliferation and application of these techniques.[255]

As these databases get larger, the risk of false matches increases (the broader the search, the more likely there are people who closely resemble us). Only a limited number of the facial recogni-

248. *See* Kashmir Hill, *The Secretive Company That Might End Privacy as We Know It*, N.Y. TIMES (Jan. 18, 2020), https://www.nytimes.com/2020/01/18/technology/clearview-privacy-facial-recognition.html [https://perma.cc/DQ69-EUJJ] https://www.nytimes.com/2020/01/18/technology/clearview-privacy-facial-recognition.html[hereinafter Hill, *Privacy*].

249. *See id.*

250. *See id.*

251. *See id.*

252. *See Risk Framework,* THE PERPETUAL LINEUP, GEO. L. CTR. PRIVACY & TECH. (Oct. 18, 2016), https://www.perpetuallineup.org/risk-framework [https://perma.cc/A3QB-HQDB]https://www.perpetuallineup.org/.

253. *See id.*

254. *See id.*

255. *See id.*; Levi Sumagaysay, *Berkeley Bans Facial Recognition*, MERCURY NEWS (Oct. 16, 2019), https://www.mercurynews.com/2019/10/16/berkeley-bans-facial-recognition/ [https://perma.cc/8GSY-L376]https://www.mercurynews.com/2019/10/16/berkeley-bans-facial-recognition/.

tion providers have voluntarily submitted their algorithms for an accuracy test with NIST.[256] Initial assessments indicate a wide range of accuracy between and, depending on demographics, within algorithms.[257] The methods tend to have fewer false positives with males than females and with lighter as opposed to darker-skinned subjects, indicating that this technology could disproportionately harm Black women.[258] This deficiency could have been avoided, or at least minimized, had the algorithms been trained using more women and more people with darker skin.[259] Most of the providers acknowledge that their systems are not sufficiently reliable to use with images clipped from videos, but Clearview AI claims (without independent verification) that its system works well with videos and less than excellent quality still images.[260] There are no rules requiring a threshold of quality as a predicate for police identifying a suspect. All of these technologies were licensed to law enforcement without first being tested for accuracy, reliability, and fairness by a government agency with oversight.[261] Nor is there any prohibition against licensing these methods for private use.[262] All of these issues should have been addressed during the research phase of development.

Once the ethical, legal, and social implications, including racial bias, have been fairly explored and weighed, and the accuracy and reliability of the technique proven, it is essential that these technologies become transparent and equally accessible to the prosecution and defense, both before they start being used in actual cases and once they become routine. Without a regulatory

256. *See Identification,* FACIAL RECOGNITION VENDOR TEST, NIST 3 (Sept. 2019), https://www.nist.gov/publications/face-recognition-vendor-test-frvt-part-2-identification [https://perma.cc/UVC3-YS5V]https://nvlpubs.nist.gov/nistpubs/ir/2019/NIST.IR.8271.pdf.

257. PATRICK GROTHER ET. AL., FACIAL RECOGNITION VENDOR TEST (FRVT) PART 3: DEMOGRAPHIC EFFECTS 6, 7 (Dec. 2019), https://nvlpubs.nist.gov/nistpubs/ir/2019/NIST.IR.8280.pdf [https://perma.cc/P4KY-FNYT]https://nvlpubs.nist.gov/nistpubs/ir/2019/NIST.IR.8280.pdf [hereinafter DEMOGRAPHIC EFFECTS].

258. *See id.* at 63; Tom Simonite, *The Best Algorithms Struggle to Recognize Black Faces Equally*, WIRED (Ju 22, 2019), https://www.wired.com/story/best-algorithms-struggle-recognize-black-faces-equally/ [https://perma.cc/PQ2K-9H55].

259. *See* DEMOGRAPHIC EFFECTS, *supra* note 254, at 4.

260. *See* Hill, *Privacy*, *supra* note 245.

261. *See* Shirin Ghaffary, *How to Avoid a Dystopian Future of Facial Recognition in Law Enforcement*, VOX (Dec. 10, 2019), https://www.vox.com/recode/2019/12/10/20996085/ai-facial-recognition-police-law-enforcement-regulation [https://perma.cc/4T2Y-XKQX].

262. *See id.*

body like the FDA, once the prosecution proffers novel scientific evidence, the only chance to challenge the test's validity is in court. But, as we explained above, when it comes to forensics, courts have been poor gatekeepers as neither the bar nor the bench has sufficient forensic fluency to apply to the cases that come before them. The problem is further exacerbated when defense efforts to question the validity of a new technique and to seek access to the software for their own experts to analyze are often thwarted by the court's deference to the company's assertion of proprietary secrets.[263] A trial by "black box" is not consistent with traditional notions of due process or the rights of the accused. Further, there is a huge technology gap between the prosecutor and defense counsel, particularly for public defenders.[264] The Manhattan DA has a $10 million forensics lab to mine digital data from smart phones, computers, and other digital devices,[265] whereas public defenders have minimal resources.[266] There simply is no money available to create in-house forensic capacity at most offices, and single case retention of outside experts can be prohibitively expensive and slow.[267]Defendants need access to the technology, often to prove their innocence or impeach prosecution witnesses. The subject matter experts cannot be monopolized by law enforcement.[268] The Stored Communications Act, a1986 federal law, requires that law enforcement secure a warrant before technology companies provide access to emails, messages, and other private data.[269] Defend-

263. *See* People v. Superior Court, No. B258569, 2015 WL 139069 (Cal. Ct. App. Jan. 9, 2015) (denying defendant access to forensic software program source code and classifying code as trade secret); Rebecca Wexler, *Life, Liberty, and Trade Secrets: Intellectual Property and the Criminal Justice System*, 70 STAN. L. REV. 1343, 1356–69 (2018) (citing State v. Loomis, 881 N.W.2d 749 (Wis. 2016)) (finding system weights and input variables of predictive computer system protected trade secrets).

264. *See* Kashmir Hill, *Imagine Being on Trial. With Exonerating Evidence Trapped on Your Phone.*, N.Y. TIMES (Nov. 22, 2019), https://www.nytimes.com/2019/11/22/business/law-enforcement-public-defender-technology-gap.html [https://perma.cc/FHB9-3K6S] [hereinafter Hill, *Phone*].

265. Jeff J. Roberts & Robert Hackett, *Exclusive: Inside America's Newest Digital Crime Lab*, FORTUNE (Nov. 15, 2016), https://fortune.com/longform/vance-crime-lab/.

266. *See, e.g.*, Alexa Van Brunt, *Poor People Rely on Public Defenders Who Are Too Overworked to Defend Them*, GUARDIAN (June 17, 2015), https://www.theguardian.com/commentisfree/2015/jun/17/poor-rely-public-defenders-too-overworked [https://perma.cc/DV55-8Q5M].

267. *See* Hill, *Phone*, *supra* note 261.

268. *Id.*

269. *See* 18 U.S.C. § 2703 (2019); Sean Fernandes, *Supreme Court Addresses Stored Communications Act Cases*, ABA (Feb. 15, 2019), https://

ants can get subpoenas but lack the authority to secure "warrants."[270] Without following the explicit terms of the Act, technology companies feel free to ignore defense subpoenas, even if signed by a judge.[271] Constant vigilance and regulation of emerging technologies and investigative systems, from predictive policing to gang databases to risk assessment tools, will be crucial in stymying efforts, referred to by racial justice experts as "The New Jim Code,"[272] to bring these tools to court without adequate, independent scrutiny. The Innocence Project will use its voice to help create appropriate external and objective oversight before forensic methods are applied to actual casework, if they are to be used at all.

V.
CONCLUSION: REIMAGINING JUSTICE

As public recognition of the biases and incentives baked into the criminal legal system grows, so too will the demand that the system be reimagined. We expect the innocence frame, innocence organizations, and exonerated men and women to be central to the coalition responsible for the structural and cultural changes to come. The wrongly convicted offer a powerful first-person narrative to identify and remediate disparity and intolerance. The consequences and perils of high-volume policing practices, from quotas to "hot spot" policing, fall into focus when seen through their personal experiences. For instance, can truly consensual searches ever exist given the presence of an inherently coercive blue uniform manifesting the unequal power relationship?

It will take more than mandatory changes in policies and practices to prevent wrongful convictions or, for that matter, to end mass incarceration and over-criminalization. Memory malleability and eyewitness misidentification are more readily acknowledged than is the legacy of slavery. Reforms that seek to shield us from contextual information or mitigate confirmation bias may be politi-

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www.americanbar.org/groups/litigation/committees/privacy-data-security/practice/2018/supreme-court-addresses-stored-communications-act-cases/ [https://perma.cc/Y9CQ-KTH9].

270. *See* Facebook, Inc. v. Superior Court, 417 P.3d 725, 729 (Cal. 2018) (finding that criminal defendants may issue subpoenas for private and public digital content to technology companies).

271. *See* Stephanie Lacambra, *A Constitutional Conundrum That's Not Going Away—Unequal Access to Social Media Posts*, ELECTRONIC FRONTIER FOUND. (May 31, 2018), https://www.eff.org/deeplinks/2018/05/ca-supreme-court-leaves-scales-tipped-prosecutions-favor-defense-gets-access [https://perma.cc/A2UA-2YM4].

272. *See* RUHA BENJAMIN, RACE AFTER TECHNOLOGY: ABOLITIONIST TOOLS FOR THE NEW JIM CODE 8 (2019).

cally viable, but they do not confront personal and systemic racism. Today's meaningful legislation and regulation can be diluted or reversed in the next election. Lasting social and cultural change will not happen without winning hearts and minds. For far too long the engine defining and driving the intersection of law and crime has been fueled by fear and retribution. We must expand our agenda and extend our reach so that we can join others in remaking the engine, replacing fear with optimism, and turning retribution into compassion.