

Policy Brief

**Establishing a Forensic Science Commission in Massachusetts: A Model
for a More Fair, Efficient, and Reliable Criminal Justice System**

The use of flawed forensic methods in the Massachusetts criminal justice system has resulted in numerous wrongful convictions and was a significant factor in two recent high-profile drug lab scandals affecting tens of thousands of cases. Reliance on improper forensic science can lead to unacceptable violations of individual rights and can impose an unnecessary financial burden on the Commonwealth. This policy brief outlines the need for a forensic science commission to set standards and prevent unreliable or tainted evidence from distorting the legal process. It also analyzes recently proposed legislation, S. 1285, that would establish in Massachusetts a commission designed to achieve those goals. The proposed forensic science commission would set and enforce standards for forensic examiners in our state, proactively addressing systemic problems before they lead to serious harm. The commission would also provide a forum to review convictions that were based on discredited scientific practices, offering the possibility of relief for wrongfully convicted persons without costly litigation. The idea reflected in the proposed legislation is not novel: it builds on models that have succeeded in helping other states ensure fairness and improve the administration of their criminal justice systems. A similar approach in Massachusetts would serve vital needs, safeguarding against wrongful convictions and helping to ensure that the legal system operates with the integrity needed to ensure justice for everyone who comes before the Massachusetts courts.

A. Fixing Flawed Forensics: A Broken System and Pathways to Reform

Systemic Flaws

The use of forensic science in criminal cases has grown steadily over recent years, particularly after the introduction and advancement of DNA analysis. However, a series of exonerations over the past two decades have raised questions about the reliability and validity of many forensic techniques that were commonly used in the criminal justice system.¹ Many forensic disciplines, such as hair and fiber analysis, rely heavily on subjective determinations by examiners and are prone to error.² According to the Innocence Project, misapplication of forensic science was a contributing factor in over one hundred and fifty wrongful convictions, nearly half of the successful DNA exonerations identified in a study conducted by the group in 2015.³

In response to these concerns, in 2005 Congress mandated a study of forensic science by the National Academy of Sciences (NAS). The resulting report, *Strengthening Forensic Science in the United States: A Path Forward*, criticized many of the forensic

methods routinely used in the criminal justice system and identified a lack of oversight for forensic laboratories as a widespread issue for states across the nation.⁴ The report questioned the validity of forensic evidence accepted by courts, concluding that several of the forensic disciplines that are commonly utilized in criminal cases lacked a rigorous body of supporting scientific research.⁵ Even fingerprint analysis, despite its early acceptance as an exact identification technique by courts, was found to be lacking in strong scientific validation.⁶ The report concluded that the “serious problems” in the forensic science system could “only be addressed by a national commitment to overhaul the current structure that supports the forensic science community in this country.”⁷ In 2016, the President’s Council of Advisors on Science and Technology (PCAST) issued a second report, *Forensic Science in Criminal Courts: Ensuring Scientific Validity of Feature-Comparison Methods* (PCAST report), further investigating the issues discussed in the NAS report. The PCAST report found a continued need for greater clarity in standards for the use of forensic methods, and a need to evaluate if specific methods are in fact valid and reliable.⁸ In particular, the PCAST report identified serious concerns with the scientific validity of several feature-comparison methods of forensic analysis, including complex mixture DNA analysis, bite-mark analysis, footprint analysis, and firearms identification.⁹

In response to the NAS report’s call to action, the federal government has taken certain corrective measures – but those have been limited, and the current administration’s commitment to leading forensic reform is uncertain. The Department of Justice has taken steps to direct some funding towards research on forensic science and has initiated reviews of certain forensic disciplines criticized by the NAS report.¹⁰ The Federal Bureau of Investigation (FBI), for example, launched a comprehensive review of all federal prosecutions involving the use of microscopic hair analysis after a series of exonerations led to scrutiny of its hair examiners.¹¹ The agency found that in the 268 cases where examiners provided testimony regarding hair comparison to inculpate a defendant, erroneous statements were made in 257 cases, nearly ninety-six percent of the cases.¹² While the Department of Justice initially pledged to expand its review to other forensic disciplines, it announced the indefinite suspension of the review on April 10, 2017.¹³

Forensic Science in Massachusetts: Wrongful Convictions and Examiner Misconduct

Recent cases in Massachusetts illustrate that the Commonwealth faces its own set of problems as a result of flawed forensic science. In 2016, George Perrot became the first person in the nation to have his conviction vacated by a trial court solely on the basis of errors in hair analysis testimony.¹⁴ Perrot spent thirty years in prison for allegedly raping a Springfield woman; his conviction was based primarily on the microscopic hair analysis of a single strand of hair found in the victim’s home.¹⁵ In overturning Perrot’s conviction, Massachusetts Superior Court Judge Robert J. Kane found that the testimony of the state’s hair examiner was not supported by science and should not have been admitted as evidence.¹⁶ In a similarly flawed case, Victor Rosario was granted a new trial and released from prison after serving thirty-two years of a life sentence for an alleged arson that resulted in eight deaths.¹⁷ Rosario’s conviction turned in significant part on a set of assumptions by fire scene investigators that have since been completely discredited

by the relevant scientific community.¹⁸ At least nine other defendants in Massachusetts have been exonerated after incarceration in cases involving flawed forensic testimony.¹⁹

In addition to its history of reliance on invalid forensic techniques in court proceedings, Massachusetts has also been the site of multiple scandals related to the processing of evidence in state laboratories. On April 18, 2017, the Massachusetts Supreme Judicial Court ordered the dismissal of over 21,000 drug cases that had been tainted by misconduct by state examiner Annie Dookhan.²⁰ Dookhan fabricated drug test data in cases involving up to 40,000 individuals from 2003 to 2011.²¹ An investigation by the Massachusetts Inspector General concluded that Dookhan was the only chemist who deliberately forged records during her time at the Hinton drug laboratory, but the report found that other chemists had unintentionally committed errors in drug trafficking cases as a result of improper sampling techniques.²² In 2014, another state lab chemist, Sonja Farak, plead guilty to four counts of tampering with evidence and four counts of stealing cocaine from the lab she worked in.²³ Farak's misconduct may have impacted approximately 10,000 cases over the course of nine years.²⁴ These scandals expose the potential for grave harm when a laboratory lacks effective oversight.

B. The Path Forward: Establishing a Forensic Science Commission

Tools are available to prevent these kinds of injustices going forward and to establish relief for individuals whose convictions were based on improper forensic techniques. Drawing on models used successfully around the country, Massachusetts should establish a forensic science commission that would ensure sound scientific judgment and effective oversight necessary to keep faulty forensics out of the Massachusetts court system. One bill currently pending in the Massachusetts legislature, Senate Bill 1285, is a promising measure for bringing about such reform.

Senate Bill 1285 would take action to address the urgent need for reform of the forensic science system in Massachusetts. The bill would establish a Forensic Science Commission in the Executive Office of Public Safety and Security to “provide independent auditing and oversight of forensic evidence used in criminal matters and analysis done in state and municipal laboratories.”²⁵ The Commission would consist of eleven members appointed by the governor, including six members with expertise in subjects related to forensic science (such as statistics and cognitive bias).²⁶ As part of its duties, the Commission would oversee the accreditation of forensic laboratories in the state and develop a new system for laboratories to report allegations of professional negligence or misconduct.²⁷ The Commission would also have the authority to initiate investigations of any forensic science technique or analysis used in a criminal matter.²⁸

The establishment of a forensic science commission would be a significant step forward in improving oversight, providing the state with a critical tool to improve the quality of forensic evidence relied upon by law enforcement. There is currently no independent oversight body for state laboratories in Massachusetts; the existing forensic science advisory board has no authority to initiate investigations of state laboratories to ensure compliance with accreditation standards.²⁹ A forensic science commission would replace the current forensic science advisory board with a new independent entity responsible for the development and implementation of an oversight system for the

state's forensic laboratories. The proposed commission would have the authority to ensure that state laboratories maintain appropriate standards and procedures and to investigate prior convictions based on forensic methods that have since been discredited. While the majority of the members of the current advisory board are representatives of the law enforcement community, a majority of the proposed Commission would be independent scientists, and representatives from the criminal defense community would be included to address any potential conflicts of interest.

The establishment of a commission in Massachusetts would follow the path of other states towards reform.³⁰ Texas provides an especially helpful example. The Texas legislature created its commission in 2005 after a series of high-profile scandals in its crime laboratories.³¹ The Texas Forensic Science Commission now investigates all allegations of professional negligence or misconduct that would substantially affect the integrity of the results of a forensic analysis conducted in the state, and it provides recommendations for corrective action by the state's laboratories.³² The Texas Commission has already conducted investigations of the state's crime laboratories in Houston and Austin, avoiding the years of litigation that might have occurred as a result of allegations of examiner misconduct.³³ During both investigations, the Texas Commission worked collaboratively with the state laboratories to re-examine its analyses, helping to restore public confidence in the integrity of the laboratory's work through a cost-effective, transparent process.³⁴ In May 2013, the Texas Legislature expanded the scope of the Commission's powers by allowing it to affirmatively initiate an investigation of a forensic technique.³⁵ In August 2015, the Commission commenced an investigation of all cases involving bite mark analysis, responding to allegations that the technique had led to the wrongful convictions of two Texas residents.³⁶ After convening an investigative panel that concluded bite mark analysis was scientifically unreliable, the Commission has called for a moratorium in the use of bite mark evidence in all criminal cases in Texas,³⁷ and has identified over thirty cases that may be overturned after further review.³⁸

Successful models, like Texas's commission, demonstrate the potential for a state to proactively address flaws in its forensic science system and improve the quality of its criminal justice system. The proposed Massachusetts Forensic Science Commission would mirror the structure and authority of the Texas Commission³⁹ and could build upon that commission's success. Like the Texas Commission, the proposed commission would be responsible for reviewing allegations of professional negligence or misconduct by the state's forensic examiners and would have the authority to conduct investigations of any forensic technique used in the criminal justice system. Establishing a commission with these features would represent an innovation suited to ensure fairness, efficiency, and reliability in cases throughout the Commonwealth's criminal justice system.

Flaws in the Massachusetts forensic science system threaten the integrity of evidence in the criminal courts and expose the public to an unacceptable risk of wrongful conviction. In recent years, tens of thousands of cases have been dismissed in the Commonwealth as a result of forensic errors, damaging the Massachusetts' reputation and the credibility of its courts. Massachusetts can avoid future scandal and prevent wrongful convictions by establishing a commission to oversee its forensic laboratories.

ENDNOTES

¹ See, e.g., Jonathan Saltzman & Mac Daniel, *Man Freed in 1997 Shooting of Officer*, BOS. GLOBE (Jan. 24, 2004), http://archive.boston.com/news/local/articles/2004/01/24/man_freed_in_1997_shooting_of_officer/ (reporting on a case of a fingerprint “match” disproved through DNA exoneration).

² See Keith A. Findley, *Reforming the “Science” in Forensic Science*, WIS. LAW., November 2015, at 34.

³ Misapplication of forensic science played a role in at least one hundred and fifty cases; the number of wrongful convictions tied to flawed forensics may be much larger. The Innocence Project only examined the small number of cases of individuals who had been exonerated as a result of DNA testing and did not consider the many other cases of persons exonerated without DNA testing. See *Misapplication of Forensic Science*, INNOCENCE PROJECT, <https://www.innocenceproject.org/causes/misapplication-forensic-science/> (last visited Apr. 26, 2017).

⁴ NAT’L RESEARCH COUNCIL, *STRENGTHENING FORENSIC SCIENCE IN THE UNITED STATES: A PATH FORWARD* 188-211 (2009).

⁵ *Id.* at 8 (“Although research has been done in some disciplines, there is a notable dearth of peer-reviewed, published studies establishing the scientific bases and validity of many forensic methods.”).

⁶ *Id.* at 142-144.

⁷ *Id.* at xx.

⁸ PRESIDENT’S COUNCIL OF ADVISORS ON SCI. AND TECH., *FORENSIC SCIENCE IN CRIMINAL COURTS: ENSURING SCIENTIFIC VALIDITY OF FEATURE-COMPARISON METHODS 1* (2016).

⁹ *Id.* at 7-13.

¹⁰ See, e.g., EXECUTIVE OFFICE OF THE PRESIDENT OF THE UNITED STATES, *STRENGTHENING FORENSIC SCIENCE: A PROGRESS REPORT* (Feb. 2014), https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/forensic_science_progress_2-14-14.pdf

¹¹ Spencer Hsu, *Justice Dept., FBI to Review Use of Forensic Evidence in Thousands of Cases*, WASH. POST (July 10, 2012), https://www.washingtonpost.com/local/crime/justice-dept-fbi-to-review-use-of-forensic-evidence-in-thousands-of-cases/2012/07/10/gJQAT6DlW_story.html?utm_term=.9845dbc238ea.

¹² Press Release, Federal Bureau of Investigation, *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>.

¹³ Spencer Hsu, *Sessions Orders Justice Department to End Forensic Science Commission, Suspend Review Policy*, WASH. POST (Apr. 10, 2017), [ww.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?utm_term=.16b4f25e6b51](http://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?utm_term=.16b4f25e6b51)

¹⁴ Spencer Hsu, *In a First, Judge Grants Retrial Solely on FBI Hair ‘Match’*, WASH. POST (Feb. 3, 2016), https://www.washingtonpost.com/local/public-safety/in-a-first-judge-grants-retrial-solely-on-fbi-hair-match/2016/02/02/e3adcc96-c49b-11e5-9693-933a4d31bcc8_story.html?utm_term=.8ac12f717cde.

¹⁵ Ed Pilkinton, *Thirty Years in Jail for a Single Hair: the FBI’s ‘Mass Disaster’ of False Conviction*, THE GUARDIAN (Apr. 21, 2015), <https://www.theguardian.com/us-news/2015/apr/21/fbi-jail-hair-mass-disaster-false-conviction>

¹⁶ *Commonwealth v. Perrot*, 2016 WL 380123, at *26 (Mass. Super. Ct. Jan. 26, 2016). Mr. Perrot’s case is presently on appeal by the Commonwealth.

¹⁷ Lisa Redmond, *Murder, Arson Convict Free on Bail*, LOWELL SUN (July 11, 2014), http://www.lowellsun.com/local/ci_26130123/murder-arson-convict-free-bail. In 2017, the Supreme Judicial Court unanimously affirmed the trial court order overturning Mr. Rosario’s conviction, recognizing the significant role that flawed forensics played in contributing to his conviction. *Commonwealth v. Rosario*, 2017 WL 1957266, 477 Mass. 69 (May 11, 2017).

¹⁸ Jack Nicas and Dick Lehr, *Notorious Lowell Arson Case Cast in Doubt*, BOS. GLOBE, (June 27, 2010), http://archive.boston.com/news/local/massachusetts/articles/2010/06/27/notorious_lowell_arson_case_cast_in_doubt/.

¹⁹ See UNIVERSITY OF VIRGINIA SCHOOL OF LAW, *DNA EXONERATIONS DATABASE*, <https://www.convictingtheinnocent.com/> (last visited May 19, 2017).

- ²⁰ *Bridgeman v. District Attorney for Suffolk District*, No. SJ-2014-05 (Mass. April 19, 2017) (declaratory judgment order), https://aclum.org/wp-content/uploads/2017/04/2017_04_19-SJ-2014-0005-DECLARATORY-JUDGMENT-Gaziano-J..pdf
- ²¹ Dahlia Lithwick, *Crime Lab Scandals Just Keep Getting Worse*, SLATE (Oct. 29, 2015), http://www.slate.com/articles/news_and_politics/crime/2015/10/massachusetts_crime_lab_scandal_worsens_dookhan_and_farak.html.
- ²² OFFICE OF THE INSPECTOR GENERAL, INVESTIGATION OF THE DRUG LABORATORY AT THE WILLIAM A. HINTON STATE LABORATORY INSTITUTE 113-117 (Mar. 4, 2014), <http://www.mass.gov/ig/publications/reports-and-recommendations/2014/investigation-of-the-drug-laboratory-at-the-william-a-hinton-state-laboratory-institute-2002-2012.pdf>.
- ²³ OFFICE OF THE ATTORNEY GENERAL, INVESTIGATIVE REPORT PURSUANT TO *COMMONWEALTH v. COTTO 3* (Apr. 1, 2016), <https://assets.documentcloud.org/documents/2823331/AGORReportFarakAmherstDrugLab.pdf>.
- ²⁴ Evan Allen & John Ellement, *State Chemist May Have Affected More Drug Cases than Previously Known*, BOS. GLOBE (July 2, 2015), <http://home.iape.org/features/headline-evidence-news/articles-evidence-news/state-chemist-may-have-affected-more-drug-cases-than-previously-known.html>.
- ²⁵ S. 1285, §1, 7-8, 190th Gen. Ct., Reg. Sess. (Mass. 2017).
- ²⁶ S. 1285, §1, 9-13, 190th Gen. Ct., Reg. Sess. (Mass. 2017).
- ²⁷ S. 1285, §1, 49-53, 190th Gen. Ct., Reg. Sess. (Mass. 2017).
- ²⁸ S. 1285, §1, 30-38, 190th Gen. Ct., Reg. Sess. (Mass. 2017).
- ²⁹ MASS. GEN. LAWS ch. 6, § 184A (2014).
- ³⁰ Ten states currently have legislatively created commissions to provide support, guidance, or oversight to state and local crime laboratories. FORENSIC TECHNOLOGY CENTER OF EXCELLENCE, STATE FORENSIC SCIENCE COMMISSIONS: A FINAL REPORT (2016), <https://rti.connectsolutions.com/sfsc>.
- ³¹ Sandra Guerra Thompson & Nicole Bremner Cásarez, *Building the Infrastructure for "Justice Through Science": The Texas Model*, 119 W. Va. L. Rev. 711, 717 (2016).
- ³² See Juan Hinojosa & Lynn Garcia, *Improving Forensic Science Through State Oversight: The Texas Model*, 91 Tex. L. Rev. 19, 20 (2012).
- ³³ *Id.* at 24.
- ³⁴ *Id.*
- ³⁵ Brandi Grissom, *Bill, Budget Expand Authority of Forensic Science Commission*, THE TEX. TRIB. (May 25, 2013), <https://www.texastribune.org/2013/05/25/reforms-expand-forensic-science-commission-authori/>.
- ³⁶ TEX. FORENSIC SCI. COMM’N, FORENSIC BITE-MARK COMPARISON COMPLAINT FILED BY NATIONAL INNOCENCE PROJECT ON BEHALF OF STEVEN MARK CHANEY – FINAL REPORT 5 (2016), <http://www.fsc.texas.gov/sites/default/files/FinalBiteMarkReport.pdf>.
- ³⁷ *Id.* at 11-16.
- ³⁸ Erick Eckholm, *Lives in Balance, Texas Leads Scrutiny of Bite-Mark Forensics*, N.Y. TIMES (Dec. 12, 2015), https://www.nytimes.com/2015/12/13/us/lives-in-balance-texas-leads-scrutiny-of-bite-mark-forensics.html?_r=0.
- ³⁹ Compare S. 1285, 190th Gen. Ct., Reg. Sess. (Mass. 2017) with TEX.CODE CRIM. PROC. ANN. art. 38.01.