

# Mother Jones

## Jeff Sessions Wants Courts to Rely Less on Science and More on "Science"

*Advocates for forensic reform see progress halting, and even backsliding, under the new administration.*

By [Pema Levy](#) | Mon Apr. 24, 2017 6:00 AM EDT

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On April 10, a group of lawyers, scientists, judges, crime lab technicians, law enforcement officers, and academics gathered in Washington, DC, for the final quarterly meeting of the National Commission on Forensic Science, a group whose two-year charter expired in late April. The two-day meeting of the commission was a no-frills bureaucratic affair—a few dozen attendees seated in rectangle formation facing each other to deliberate and listen to expert panels. But the bland exterior could not mask ripples of tension. Had the 2016 presidential election turned out differently, the commission's charter would likely have been renewed. But under President Donald Trump and Attorney General Jeff Sessions, members arrived that morning fearing that their efforts to reform the field of forensic science would be cut short. Shortly after 9 a.m., Andrew Goldsmith, a career Justice Department attorney, delivered the bad news: The commission was coming to an end.

Follow-up questions from a few commissioners revealed more bad news. Efforts to improve forensic science and expert testimony, initiated under the previous administration, were now on hold. Kent Rochford, the acting director of the National Institute of Standards and Technology, the research arm of the Commerce Department, acknowledged that ongoing pilot studies into bite-mark and firearm analyses would not be completed. A representative from the Justice Department's Office of Legal Policy, Kira Antell, conceded that a project to create guidelines for expert forensic testimony had been paused as well. The message was clear: The era of independent scientific review of forensics is over.

Julia Leighton, a commission member and retired public defender, conveyed the disappointed mood of the room when she spoke a few minutes later. "We have to understand the importance of this juncture that we're at, where we're really grappling with, frankly, are we telling the truth as a matter of science to judges and jurors?" she said. "And that can't be put on hold. It is inconsistent with the Department of Justice's mission to put that on hold."

For years, scientists and defense attorneys have fought an uphill battle to bring scientific rigor into a field that, despite its name, is largely devoid of science. Analyses regularly presented in courtrooms—using such evidence as bite marks, hair, and bullets—that for decades have been employed by prosecutors to convict and even execute defendants are actually

incapable of definitively linking an individual to a crime. Other methods, including fingerprint analysis, are less rigorous and more subjective than experts—and popular culture—let on.

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But on the witness stand, experts routinely overstate the certainty of their forensic methods. In 2015, the FBI completed a review of 268 trial transcripts in which the bureau's experts used microscopic hair analysis to incriminate a defendant. The results [showed](#) [1] that bureau experts submitted scientifically invalid testimony at least 95 percent of the time. Among those cases with faulty evidence, 33 defendants received the death penalty and 9 had been executed. No court has banned bite-mark evidence despite a consensus among scientists that the discipline is entirely subjective. One study [found](#) [2] that forensic dentists couldn't even agree if markings were caused by human teeth. Until this month, the National Commission on Forensic Science was the most important group moving forensics into the modern scientific era.

A few minutes after the commission learned of its fate, the Justice Department publicly [announced](#) [3] its next steps. A new Justice Department Task Force on Crime Reduction and Public Safety, [established](#) [4] by executive order in February to "support law enforcement" and "restore public safety," would now oversee forensic science. Sessions, the press release said, would appoint a senior forensic adviser and the department would conduct a "needs assessment of forensic science laboratories that examines workload, backlog, personnel and equipment needs of public crime laboratories." Rather than an independent body that uses science to evaluate forensics, the new administration seemed to be basing its forensic policies largely on increasing conviction rates for law enforcement.

Forensic science is a mess. It was historically under the sole purview of cops and prosecutors, but the advent of DNA evidence exposed the failures of older forensic methods. Fingerprint identification became standard practice in police departments around the [early years of the 20th century](#) [5] and for decades was [considered](#) [6] the gold standard of forensic science. Firearm or "tool mark" evidence connecting a bullet to a specific gun was also in full swing in the early 20th century—and played a major role of the famous, flawed [case against Nicola Sacco and Bartolomeo Vanzetti](#) [7] in 1921.

The use of bite marks to identify a suspect began with an actual witch hunt. In 1692, authorities from Salem, Massachusetts, [arrested](#) [8] the Reverend George Burroughs for allegedly biting, pinching, and choking girls in order to turn them into witches. During the trial, Burroughs' mouth was pried open to compare his teeth to the markings found on the injured girls. Twenty years after he was hanged, the colonial government of Massachusetts compensated Burroughs' children for his wrongful death. Bite-mark evidence should have been put to bed then, but in 1975 a California appeals

court upheld a conviction for manslaughter based on bite-mark evidence—even though the court acknowledged a lack of scientific research to support such evidence. Soon, the practice [became widespread](#) [9] around the country.

These forensic methods and others were largely developed by law enforcement and guarded from the rigorous testing and peer review used in every other scientific field. As molecular biologist Eric Lander observed in 1989, "At present, forensic science is virtually unregulated—with the paradoxical result that clinical laboratories must meet higher standards to be allowed to diagnose strep throat than forensic labs must meet to put a defendant on death row."\*

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## The use of bite marks to identify a suspect literally began with a witch hunt.

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DNA emerged as a reliable tool in the late 1980s. It has since [exonerated](#) [10] tens of thousands of suspects during criminal investigations and more than 349 convicted defendants, according to the [Innocence Project](#) [11]. "I think what we've seen with the DNA exonerations," Paul Giannelli, a member of the commission, told *Mother Jones* at its final meeting, "is that there's a heck of a lot more innocent people in prison than anyone dreamed of."

In 2009, the National Academy of Sciences (NAS) [issued a landmark study](#) [12] that shook the field of forensics. Only nuclear DNA analysis, the report found, could "consistently, and with a high degree of certainty," link an individual to a crime. Around the country, it noted, crime labs lack uniform standards, practices, accreditation, and oversight. And forensic methods that involve expert analysis, as opposed to laboratory testing, really weren't science at all. NAS proposed creating an independent agency to advance the field of forensic science outside the purview of the Justice Department. "The potential for conflicts of interest between the needs of law enforcement and the broader needs of forensic science are too great," the report reads. "In sum, the committee concluded that advancing *science* in the forensic science enterprise is not likely to be achieved within the confines of DOJ."

Reasons to sever the forensic science research from the Justice Department were numerous. In the early 2000s, the National Academy [ditched](#) [13] a planned review of forensic methods after the Departments of Justice and Defense claimed a right to review the study before publication—in other words, the government was reserving the right to alter a scientific study. About the same time, the FBI commissioned its own studies as proof that its method of analyzing fingerprints was sound. In one, the bureau sent the 10-digit fingerprint profile of a defendant and two prints from the crime scene to multiple analysts and asked them for a comparison. When 27 percent of the respondents did not find a match, the FBI asked those respondents for a do-over, this time pointing out exactly what markings the experts should look at to connect the crime scene prints to the defendant. The resulting "test," Giannelli [noted](#) [14] in a 2010 law review article, "was rigged." Yet cracks began to emerge in the FBI's own methodology. In a 2002 case, an examiner from Scotland Yard, the London police force, testified that the proficiency tests administered to fingerprint analysts at the FBI were incapable of assessing analysts' abilities. "If I gave my experts these tests, they'd fall about laughing," he said.

In 2004, Congress gave the Justice Department money to fund forensic labs with the requirement that grantees turn over investigations into serious misconduct and negligence to outside investigators. But the Justice Department's inspector general [repeatedly found](#) [15] that the National Institute of Justice was handing out millions in grants without enforcing the oversight requirements. "That one anecdote is illustrative of their general approach to forensics, which is they just want more," says Erin Murphy, a professor at New York University School of Law and the author of *Inside the Cell: The Dark Side of Forensic DNA*. "They don't really care about the quality of it, they don't really care about the accuracy of it. They just want more of it."

The independent government agency the 2009 NAS report called for never came to be, but in 2013 advocates for reform got the next best thing, the National Commission on Forensic Science. Though it was stacked with Justice Department employees as well as representatives of law enforcement and crime labs—a bloc large enough to veto proposals—the commission was prolific during its four-year existence, issuing dozens of [recommendations](#) [16] on forensic standards, testing, and accreditation. At the commission's urging, former Attorney General Loretta Lynch had [adopted](#) [17] new accreditation policies for Justice Department labs. Another recommendation Lynch [adopted](#) [18] required experts at federal labs to stop saying "reasonable scientific certainty" on the witness stand, which experts had regularly used to bolster their findings. The phrase, the commission [concluded](#) [19], has no scientific meaning and instead conveys a false sense of certainty. Even beyond federal cases, with the commission's recommendation in hand, a defense attorney could damage the credibility of an expert witness who uses the misleading phrase.

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Now, reform advocates see progress halting, and even backsliding, under the new administration. "Definitely bite marks should be terminated," Giannelli said. "Hair evidence, the way it's been used, should be terminated. Testimony with respect to fingerprints and firearms identification should acknowledge the limitations of those disciplines, because right now I think the juries are being misled." He continued: "One of the risks that I see is we'll go back to the time when there is not science in forensic science."

Sessions is known as a strong supporter of the use of forensics. A former prosecutor himself, the attorney general has long supported increased funding for crime labs so that law enforcement can get test results faster. During his 20-year career in the US Senate, he pushed to increase DNA testing—a bipartisan issue. But when it comes to regulating local crime labs or subjecting forensics to scientific studies, Sessions has been a skeptic. Questions about the reliability of forensic methods irked him because they hurt prosecutors' ability to win convictions based on forensic evidence; calls for more oversight contradicted his desire to see local law enforcement unencumbered by federal oversight or regulation. Given this history, it wasn't a surprise that Sessions chose to end the commission and bring forensic science research back under the direct supervision of the Justice Department.

In 2009, the Senate Judiciary Committee held a hearing on the bombshell 2009 NAS report. In his opening statement, Sessions, the committee's top ranking Republican at the time, [expressed](#) [20] skepticism of the report's findings. "I don't accept the idea that they seem to suggest that fingerprints is not a proven technology," he said. "I don't think we should suggest that those proven scientific principles that we've been using for decades are somehow uncertain." Instead, Sessions worried that the NAS report would be used by defense attorneys during cross-examination to discredit experts, leaving prosecutors "to fend off challenges on the most basic issues in a trial."

The hearing took place in the shadow of new information about the case of Cameron Todd Willingham, a Texas man who was executed in 2004 after he was found guilty of murdering his three children by setting fire to their home. The principal evidence prosecutors used against Willingham was the findings of two fire investigators who claimed that the conflagration could only have been caused by arson. Yet even before Willingham's execution, the arson evidence against him had been debunked by a premier fire expert, though Texas' clemency process had failed to heed the report. In August 2009, a few weeks before the Senate hearing, a fire scientist hired to review the case issued a blistering report denouncing the original investigators' work as "characteristic of mystics or psychics," not scientists. A few weeks later, *The New Yorker* [published](#) [21] a detailed investigation of the Willingham case. Based on flawed forensic science, an innocent man had been executed.

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When Sessions had his turn to question the witness panel, he brought up the Willingham case. Sessions read extensively from a piece of commentary submitted to a small Texas newspaper by John Jackson, one of the prosecutors in the Willingham case, who had gone on to become a local judge. In his op-ed, Jackson claimed that despite the flawed forensic evidence, Willingham was guilty, and listed bullet points intended to prove Willingham's guilt. But Jackson's points read like someone in denial of the newfound facts about the case—in fact, the author of the *New Yorker* piece, David Gram, had already written his own rebuttal to Jackson's list by the time of the Senate hearing. Still, Sessions proceeded to read several misleading facts about the case. "That does not excuse a flawed forensic report," Sessions concluded. "But it looks like there was other evidence in the case indicating guilt."

The 2009 investigation into the Willingham case was the work of Texas' own Forensic Science Commission, a state-level version of the national commission that Sessions just closed down. In the last few years, the Texas commission has [received](#) [22] increased funding and responsibilities from the state legislature, becoming a national leader in reviewing the scientific validity of forensic disciplines. It has taken up issues such as hair analysis and problems with DNA testing, and last year it [recommended](#) [22] a ban on bite-mark evidence in the courtroom. Texas, not Washington, is now carrying the torch for forensic reformers.

At the final meeting of the National Commission on Forensic Science, the group held a session on wrongful convictions featuring Keith Harward, who had served 33 years in Virginia for rape and murder based on bite-mark evidence before being [exonerated](#) [23] by DNA evidence. When the panel ended, a few members expressed a sense of helplessness now that the commission was shutting down. John Hollway, a professor at the University of Pennsylvania Law School, rose to apologize to Harward for the decades he lost in prison. "Your story brings up the tragedy of putting this commission on hold," said Hollway, who was not a commission member but was involved in subcommittee work. Hollway said he worried that "we will lose time to help the other people like you who are incarcerated improperly or, worse, the people who are still to be incarcerated improperly because we cannot solve these problems yet."

*Correction: An earlier version of this article misspelled Eric Lander's name.*

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**Links:**

- [1] <http://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>
- [2] [https://www.washingtonpost.com/news/the-watch/wp/2015/04/08/a-bite-mark-matching-advocacy-group-just-conducted-a-study-that-discredits-bite-mark-evidence/?utm\\_term=.76c8d66bb650](https://www.washingtonpost.com/news/the-watch/wp/2015/04/08/a-bite-mark-matching-advocacy-group-just-conducted-a-study-that-discredits-bite-mark-evidence/?utm_term=.76c8d66bb650)
- [3] <http://www.justice.gov/opa/pr/attorney-general-jeff-sessions-announces-new-initiatives-advance-forensic-science-and-help>
- [4] <https://www.whitehouse.gov/the-press-office/2017/02/09/presidential-executive-order-task-force-crime-reduction-and-public>
- [5] <http://www.forensidna.com/timeline.html>
- [6] [http://http://scholarlycommons.law.case.edu/cgi/viewcontent.cgi?article=1154&context=faculty\\_publications](http://http://scholarlycommons.law.case.edu/cgi/viewcontent.cgi?article=1154&context=faculty_publications)
- [7] <https://www.theatlantic.com/magazine/archive/1927/03/the-case-of-sacco-and-vanzetti/306625/>
- [8] <https://nysdental.org/sites/default/files/NYSDANewsFeb14.pdf>
- [9] [https://www.washingtonpost.com/news/the-watch/wp/2015/02/17/it-literally-started-with-a-witch-hunt-a-history-of-bite-mark-evidence/?utm\\_term=.fefb04f3b77d](https://www.washingtonpost.com/news/the-watch/wp/2015/02/17/it-literally-started-with-a-witch-hunt-a-history-of-bite-mark-evidence/?utm_term=.fefb04f3b77d)
- [10] [https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/PCAST/pcast\\_forensic\\_science\\_report\\_final.pdf](https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/PCAST/pcast_forensic_science_report_final.pdf)
- [11] <https://www.innocenceproject.org/all-cases/#exonerated-by-dna>
- [12] <https://www.ncjrs.gov/pdffiles1/nij/grants/228091.pdf>
- [13] <http://science.sciencemag.org/content/302/5651/1625>
- [14] <https://illinoislawreview.org/wp-content/ilr-content/articles/2011/1/Giannelli.pdf>
- [15] <https://oig.justice.gov/reports/OJP/e0801/final.pdf>
- [16] <https://www.justice.gov/ncfs/work-products-adopted-commission>
- [17] <https://www.justice.gov/opa/pr/justice-department-announces-new-accreditation-policies-advance-forensic-science>
- [18] <https://assets.documentcloud.org/documents/3111566/AG-Memorandum-09062016-and-Code-of-Professional.pdf>
- [19] <https://www.justice.gov/ncfs/file/839726/download>
- [20] <https://www.gpo.gov/fdsys/pkg/CHRG-111shrg54720/html/CHRG-111shrg54720.htm>
- [21] <http://www.newyorker.com/magazine/2009/09/07/trial-by-fire>
- [22] <https://blogs.wsj.com/law/2016/02/12/texas-commission-recommends-ban-on-bite-mark-evidence/>
- [23] <https://www.innocenceproject.org/cases/keith-allen-harward/>