

# Lives in Balance, Texas Leads Scrutiny of Bite-Mark Forensics

By [ERIK ECKHOLM](#) DEC. 12, 2015



Chris Fabricant of the Innocence Project, right, with Steven Mark Chaney during a hearing on the reliability of forensic bite analysis last month in Fort Worth, Tex. Mr. Chaney was freed from prison when such evidence in his case was repudiated. Credit Brandon Thibodeaux for The New York Times

FORT WORTH, Tex. — Steven Mark Chaney, who was freed from prison in October after 28 years, had to fight back tears as he watched forensic dentists argue here, before the [Texas Forensic Science Commission](#), whether bite patterns on the skin of murder, rape and child abuse victims can offer valid clues to the perpetrator's identity.

In 1987, he was sentenced to life on murder charges after a dental expert testified that it was virtually certain that his teeth had caused marks on an arm of the victim, a drug dealer who was stabbed to death. This same expert has now repudiated his testimony as unfounded. Mr.

Chaney is one of more than a dozen people around the country who have been released or exonerated in cases involving bite-mark testimony that was later debunked.

Now, the Texas commission is seeking to develop guidelines on whether bite-mark comparisons should have any role in the courtroom.

Forensic science more broadly is in turmoil as prosecutors, defense lawyers and judges confront evidence that many long-used methods, like handwriting analysis and microscopic hair comparisons, were based more on tradition than science and do not hold up under scrutiny. Even fingerprint and certain kinds of DNA matches are not quite as certain as many once believed, scientists say.



Mr. Chaney, center, after being released in October in Dallas. He had been imprisoned for 28 years. Credit David Woo/The Dallas Morning News, via Associated Press

But no lingering technique is under stronger attack than [the analysis of purported bite marks](#), a method first thrust into fame in the televised trial of Ted Bundy in 1979.

The Texas agency has won national praise for its examinations of the reliability of all sorts of forensic methods and testimony. Initially it responded to complaints about evidence in individual criminal cases. It has moved on to also evaluate whole fields, like bite-mark matching.

“Some aspects of forensic science have never been validated,” said Vincent Di Maio, a retired doctor and medical examiner who has been chairman of the Texas commission since 2012. “That’s a problem that had to be addressed, and nobody else was going to do it for us.”

The commission's recommendations, expected in February, will be the first formal finding by any state or federal agency on the validity of bite-mark evidence, said Chris Fabricant, the director of strategic litigation at [the Innocence Project](#). He added that they might help speed up inquiries into hundreds more convictions around the country as well as discourage dubious testimony in the future.

Mr. Chaney, 59, said he nearly cried at his hearing last month when two of the dental experts, after expressing their apologies to him for a tragic mistake by members of their craft, still argued that bite comparisons can play a useful role in criminal trials.

"They didn't seem to be considering the cost in human lives," he said. "I'm grateful that people say they're sorry, but that doesn't replace 28 years of my life."

Since Mr. Chaney's trial in 1987, studies have shown that dental experts cannot reliably claim that a bite wound was caused by a particular individual. They cannot even consistently agree on whether wounds were caused by bites at all.

Put under rigorous scrutiny, some forensic tools, including comparisons of lead chemistry in bullets and the matching of aural voice prints, have already been largely discarded. The [accuracy of many supposed signs of arson](#), like burn patterns that seemed to be caused by a liquid, has also been disproved.

This year, the Federal Bureau of Investigation admitted that examiners at its vaunted crime lab had for decades [overstated the reliability of microscopic hair matches](#).

As the ability grows to collect ever more microscopic amounts of DNA, even from door knobs, more of the specimens contain genetic material from several people. Separating such mixtures is difficult, and in some cases, experts now acknowledge, the sample can be matched to a suspect with far less certainty than had been assumed.



Dr. Vincent Di Maio, the chairman of the Texas Forensic Science Commission since 2012, at the hearing last month. Credit Brandon Thibodeaux for The New York Times

A [report issued in 2009](#) by the National Academy of Sciences, “Strengthening Forensic Science in the United States,” was a turning point. An expert panel warned of enormous disparities around the country in the quality of crime laboratories and said many methods had not been scientifically validated.

While some technologies like DNA analysis and toxicology were rooted in sound laboratory science, the report said, others involving interpretation of “observed patterns” like fingerprints, writing samples, tool marks, tire tracks, footprints, bite marks and hair specimens had never been properly studied.

The report called for more research and for a national center to set standards for accreditation and proper use of technologies. That led to the creation in 2014 of a National Commission on Forensic Science, which is charged with advising the federal government on ways of “strengthening the validity and reliability of the forensic sciences” and their uses in the courtroom.

That 2009 report spurred needed research, said Michael J. Saks, an expert on evidence at the Arizona State University School of Law. “But I don’t see much impact in the courtroom so far.”

D. Michael Risinger, an expert on forensics at the Seton Hall College of Law, compared changing the practices of prosecutors, courts and experts to “turning a battleship.”

Mr. Risinger and others praised the Texas commission for moving quickly to apply changing science to real cases. The agency is, for example, seeking to determine how new concerns about DNA interpretation and hair comparisons should affect past convictions and future trials in the state.

The commission had a rocky start after it was formed in 2005, in reaction to a [scandal in the police crime laboratory](#) in Houston involving shoddy DNA testing and false forensic testimony that forced the reappraisal of hundreds of convictions. Painful questions were also being raised about the [execution of Cameron Todd Willingham](#) in 2004 for a murder conviction based on arson evidence that had been widely discredited well before he was put to death.

The commission started an investigation of the Willingham case, but its work met resistance from state officials in 2009. The governor at that time, Rick Perry, a Republican, replaced three commissioners, interrupting the inquiries.

Although the commission [issued a report in 2011](#) calling for more up-to-date training of fire investigators, the state’s attorney general ruled that the commission did not have legal authority to rule on evidence offered in cases before 2005.

Since then, however, the commission, composed of seven scientists, a prosecutor and a defense lawyer, has won bipartisan praise.



Dr. David R. Senn of the University of Texas Health Science Center at San Antonio argued that bite-mark evidence could still play a valuable, if limited, role in some cases. Credit Brandon Thibodeaux for The New York Times

“We’re a hard-core law-and-order state, but we think you should convict people who are guilty and not innocent,” Dr. Di Maio said. He added that he had seen no evidence of political pressure in his years as commission chairman.

Within Texas, the commission has so far identified about three dozen cases that used bite-mark evidence, said Lynn R. Garcia, the body’s general counsel. Once the commission recommends guidelines, any cases that relied heavily on testimony considered invalid under the forthcoming report may be reopened.

Even without official guidelines, a number of prisoners who were convicted of murder and rape based on bite-mark testimony have been exonerated by DNA tests or, like Mr. Chaney, were able to convince a court that the evidence was bogus.

In January, a county circuit court in Mississippi is to decide whether to reverse [the conviction of Eddie Lee Howard Jr.](#), who has been on death row for more than two decades. He was convicted in the murder and rape of an 84-year-old woman largely because of testimony of a forensic dentist whose claims that he could detect and identify the source of faint bite marks have been widely condemned by his colleagues in the field.

In the Texas commission hearing last month, Dr. David R. Senn of the University of Texas Health Science Center at San Antonio argued that bite-mark evidence could still play a valuable if limited role in some cases by, for example, pointing toward which of a few obvious suspects was likely to be the offender, or excluding other suspects.

But commission members also [heard from researchers](#) who showed that because of the malleability of human skin, the same teeth leave different marking patters with each bite.

Other researchers [presented a study](#) in which leading forensic dentists viewed photographs of skin wounds and in most cases could not agree on whether the marks were even caused by a bite.

Mr. Chaney's presence at the hearing, in a small state office, was a reminder of the stakes.

The prosecutor and a judge agreed to set him free after the Innocence Project and Dallas public defenders petitioned on his behalf. But the decision to drop charges must be affirmed by an appeals court in the coming months.

After the session, Mr. Chaney said that he had been eligible for parole after 20 years, but was denied it because he refused to admit guilt. He described his torment as his grandparents, his oldest stepson and his oldest grandson (a car crash victim) all died during his incarceration, while he was not allowed to attend the funerals.

But his wife stood by him, Mr. Chaney said, and gave him a home to go back to.

"It's amazing," he said. "I'm a blessed man in that regard."

### **Correction: December 27, 2015**

An article on Dec. 13 about new scrutiny in criminal trials of bite-mark evidence misidentified the Mississippi court that in January will reconsider the sentence against Eddie Lee Howard Jr., who was convicted largely because of the testimony of a forensic dentist. It is a county circuit court, not the Mississippi Supreme Court.

Source: <http://www.nytimes.com/2015/12/13/us/lives-in-balance-texas-leads-scrutiny-of-bite-mark-forensics.html?hp&action=click&pgtype=Homepage&clickSource=story-heading&module=second-column-region&region=top-news&WT.nav=top-news&r=2>

Accessed 02.01.16.