

INNOCENCE PROJECT



DESCRIPTION OF BITE MARK EXONERATIONS

- 1. Keith Allen Harward:** Keith Harward was convicted of the September 1982 murder of a man and the rape of his wife. The assailant, who was dressed as a sailor, bit the rape victim's legs multiple times during the commission of the rape. Because of the assailant's uniform, the investigation focused on the sailors aboard a Navy ship dry-docked near the victims' Newport News, Virginia, home. Dentists aboard the ship ran visual screens of the dental records and teeth of between 1,000 and 3,000 officers aboard the ship; though Harward's dentition was initially highlighted for additional screening, a forensic dentist later excluded Harward as the source of the bites. The crime went unsolved for six months, until detectives were notified that Harward was accused of biting his then-girlfriend in a dispute. The Commonwealth then re-submitted wax impressions and dental molds of Harward's dentition to two ABFO board-certified Diplomates, Drs. Lowell Levine and Alvin Kagey, who both concluded that Harward was the source of bite marks on the rape victim. Although the naval and local dentists who conducted the initial screenings had excluded Harward as the source of the bites, in the wake of the ABFO Diplomates' identifications they both changed their opinions. Harward's defense attorneys also sought opinions from two additional forensic dentists prior to his trials, but those experts also concluded that Harward inflicted the bites; in total, six forensic dentists falsely identified Harward as the biter.

At Harward's second trial, Dr. Levine testified that there was "a very, very, very high degree or probability"—so high that it would be a "[p]ractical impossibility"—that anyone other than Harward inflicted the bites on the victim. Similarly, Dr. Kagey testified that Harward was the biter "with all medical certainty" and "that there is just not anyone else that would have this unique dentition." Post-conviction DNA evidence, however, excluded Harward as the source of all biological evidence collected from the victim and the crime scene and identified the person responsible, a sailor who was stationed on Harward's ship at the time of the crime. That man died in an Ohio prison in 2006 while serving time for abduction. On April 7, 2016, Harward was declared innocent by the Virginia Supreme Court, and he walked out of prison the next day, following 34 years of wrongful imprisonment.¹

- 2. Robert Lee Stinson:** Robert Lee Stinson served over 23 years in a Wisconsin prison for the brutal rape and murder of 63-year-old victim Ione Cychosz. The only physical evidence against Stinson at his 1985 trial was the bite mark testimony of two board-certified ABFO Diplomates, Drs. Lowell Thomas Johnson and Raymond Rawson. Dr. Johnson concluded that the bite marks "had

¹ The Innocence Project, *Keith Allen Harward*, available at <http://www.innocenceproject.org/cases/keith-allen-harward/>.

to have been made by teeth identical" to Stinson's and claimed that there was "no margin for error" in his conclusion. Dr. Rawson, the chairman of the Bite Mark Standards Committee of the ABFO, testified that the bite mark evidence was "high quality" and "overwhelming." Both experts testified "to a reasonable degree of scientific certainty" that the bite marks on the victim had been inflicted at or near the time of death, and that Stinson was the only person who could have inflicted the wounds. After examining Dr. Johnson's workup, Dr. Rawson stated that the methods Dr. Johnson used in gathering the evidence complied with the "standards of the American Board of Forensic Odontology."

The Wisconsin Innocence Project accepted Stinson's case in 2005 and sought DNA testing of saliva and blood-stains on the victim's sweater, which ultimately excluded Stinson. On January 30, 2009, Stinson, then 44, was freed and his conviction was vacated.²

3. **Gerard Richardson:** On December 17, 2013, Gerard Richardson was exonerated after post-conviction DNA testing proved his innocence in a 1994 murder case. He spent nearly 20 years in prison for a crime he did not commit. At Richardson's 1995 trial, ABFO board-certified Diplomate Dr. Ira Titunik testified that a bite mark found on the victim's back "was made by Gerard Richardson . . . there was no question in my mind," and the prosecutor argued that the bite mark was indisputably made by Richardson: "Mr. Richardson, in effect, left a calling card. . . . It's as if he left a note that said, 'I was here,' and signed it because the mark on her back was made by no one else's teeth." There was no other physical evidence tying Richardson to the crime. He was sentenced to 30 years in prison without the possibility of parole. More than 19 years after Monica Reyes was murdered, new evidence demonstrated that Richardson was innocent.³
4. **Willie Jackson:** On May 26, 2006, Willie Jackson was exonerated after post-conviction DNA testing proved his innocence in a 1986 sexual assault case. He had spent 17 years in prison for a crime he did not commit. At Jackson's trial, Dr. Robert Barsley, past president of the American Board of Forensic Odontology (ABFO), told the jury that the bite marks on the victim matched Jackson: "My conclusion is that Mr. Jackson is the person who bit this lady." Ultimately, DNA evidence showed that it was Willie Jackson's brother, Milton Jackson, who attacked and raped the victim.⁴

² The Innocence Project, *Robert Lee Stinson*, available at <http://www.innocenceproject.org/cases/robert-lee-stinson/>; see also *State v. Stinson*, 134 Wis. 2d 224, 397 N.W.2d 136 (Ct. App. 1986).

³ The Innocence Project, *Gerard Richardson*, available at <http://www.innocenceproject.org/cases/gerard-richardson/>; see also http://www.innocenceproject.org/docs/Richardson_Final_Motion_to_Vacate_091713.pdf.

⁴ The Innocence Project, *Willie Jackson*, available at <http://www.innocenceproject.org/cases/willie-jackson/>; see also *Jackson v. Day*, No. Civ. A. 95-1224, 1996 WL 225021, at *1 (E.D. La. May 2, 1996), *rev'd*, 121 F.3d 705 (5th Cir. 1997), and Dr. Barsley's 1989 trial court testimony, available at <http://www.law.virginia.edu/pdf/faculty/garrett/innocence/jackson.pdf>.

5. **Roy Brown:** In January 2007, Roy Brown was exonerated of stabbing and strangling Sabina Kulakowski after spending 15 years in prison. He was convicted of her murder in January 1992 based on bite mark evidence that was the centerpiece of the prosecution's case against Brown. Kulakowski's body had been discovered with multiple bite marks on her back, arm, and thigh, all of which board-certified ABFO Diplomate Dr. Edward Mofson⁵ claimed were a match to Brown's teeth. Mofson testified to a "reasonable degree of dental certainty" that Brown's dentition was "entirely consistent" and "completely consistent" with all of the bite marks, noting that the bite marks depicted the absence of the same two teeth Brown was missing.

Fifteen years after the conviction, however, DNA testing performed on saliva stains left by the perpetrator excluded Brown and matched another suspect, Barry Bench. Nevertheless, citing the prosecution's bite mark evidence at the original trial, which the jury asked to review during deliberations, the judge in the case initially refused to release Brown. Ultimately, in January 2007, the district attorney acknowledged Brown's innocence, and he was exonerated after spending 15 years in prison for a murder he did not commit.⁶

6. **Ray Krone:** On December 31, 1991, Ray Krone was arrested and charged with the murder, kidnapping, and sexual assault of a woman who worked at a bar he frequented. Police had a Styrofoam impression made of Krone's teeth for comparison to bite marks found on the victim's body and, thereafter, he became known in the media as the "Snaggle Tooth Killer" due to his crooked teeth. Dr. Raymond Rawson, a board-certified ABFO Diplomate, testified that the bite marks found on the victim's body matched Krone's teeth. Based on this testimony, Krone was convicted of murder and kidnapping and sentenced to death.

In 1996, Krone won a new trial on appeal, but was convicted again based mainly on the state's supposed expert bite mark testimony. This time, however, the judge sentenced him to life in prison, citing doubts about whether or not Krone was the true killer. It was not until 2002, after Krone had served more than 10 years in

⁵ All representations that the dentists at issue in this appendix were "board-certified ABFO Diplomates" are based on the *American Board of Forensic Odontology Diplomate Information, Updated 8/2017*, available at <http://abfo.org/wp-content/uploads/2017/05/ABFO-Diplomate-Information-revised-August-2017.pdf>.

⁶ Fernando Santos, *In Quest for a Killer, an Inmate Finds Vindication*, N.Y. TIMES, Dec. 21, 2006, available at http://www.nytimes.com/2006/12/21/nyregion/21brown.html?pagewanted=all&_r=1. See also The Innocence Project, *Roy Brown*, available at <http://www.innocenceproject.org/cases/roy-brown/>; Brandon L. Garrett, *Convicting the Innocent: Where Criminal Prosecutions Go Wrong* 108-09 (Harvard University Press 2011); Dr. Mofson's 1992 trial court testimony, available at <http://www.law.virginia.edu/pdf/faculty/garrett/innocence/brown1.pdf>; David Lohr, *Quest for Freedom: The True Story of Roy Brown*, available at http://www.trutv.com/library/crime/criminal_mind/forensics/ff311_roy_brown/5.html.

prison, that DNA testing proved his innocence.⁷

7. Calvin Washington &

- 8. Joe Sidney Williams:** Calvin Washington was convicted of capital murder in 1987 after a woman was found beaten, raped, and murdered in Waco, Texas. It was alleged that Washington and Williams murdered and sexually assaulted the victim in the course of committing a burglary. A forensic dentist and former president of the American Academy of Forensic Sciences, Dr. Homer Campbell, testified that a bite mark found on the victim was "consistent with" Williams' dentition. While Campbell excluded Washington as the source of the bite mark, his bite mark testimony about Williams (which was given at Washington's trial) tied Washington to the crime.

After serving more than 13 years of his sentence, Washington was finally exonerated in 2000 when DNA testing showed that blood on a shirt found in Washington's home did not come from the victim, as previously asserted; testing conducted a year later pointed to another man as the perpetrator.⁸ Prior to Washington's exoneration, the Texas Court of Criminal Appeals had set aside Williams' conviction in 1992, and the charges against Williams were dismissed on June 30, 1993.

- 9. James O'Donnell:** James O'Donnell was convicted in 1998 of attempted sodomy and second-degree assault. Board-certified ABFO Diplomate Dr. Harvey Silverstein opined that a bite mark on the victim's hand was consistent with O'Donnell's dentition. Based on an eyewitness' identification and the bite mark evidence, and despite testimony from O'Donnell's wife and son that he had been at home with them when the crime occurred, the jury convicted O'Donnell. He was sentenced to three-and-a-half to seven years in prison.

In 2000, after DNA samples from a rape kit excluded O'Donnell as the source of the semen found on the victim, his conviction was formally vacated.⁹

- 10. Levon Brooks:** Levon Brooks spent 16 years in prison for the rape and murder of a three-year-old girl that he did not commit. Forensic dentist Dr. Michael West claimed that the marks on the victim's body were human bite marks and he testified at Brooks' trial that, of 13 suspects whose dentitions he had compared to the wounds on the victim's body, Brooks' teeth "matched" the marks on the

⁷ The Innocence Project, *Ray Krone*, available at <http://www.innocenceproject.org/cases/ray-krone/>.

⁸ The Innocence Project, *Calvin Washington*, available at <http://www.innocenceproject.org/cases/calvin-washington/>. See also Michael Hall, *The Exonerated*, TEXAS MONTHLY, Nov. 2008, available at <http://www.texasmonthly.com/articles/the-exonerated/>.

⁹ The Innocence Project, *News: Cases Where DNA Revealed That Bite Mark Analysis Led to Wrongful Arrests and Convictions*, available at <http://www.innocenceproject.org/cases-where-dna-revealed-that-bite-mark-analysis-led-to-wrongful-arrests-and-convictions/>. See also Dr. Silverstein's 1998 trial court testimony, available at <http://www.law.virginia.edu/pdf/faculty/garrett/innocence/odonnell.pdf>.

victim. As he explained, "it could be no one but Levon Brooks that bit this girl's arm." Based on this testimony, Brooks was convicted of capital murder and sentenced to life in prison.

In 2001, DNA testing and a subsequent confession revealed that Justin Albert Johnson committed the murder. Johnson had been one of the 12 other suspects whose dental impressions Dr. West had determined did not match the bite marks on the victim's body. Following Johnson's confession, Brooks was freed on February 15, 2008.¹⁰

11. Kennedy Brewer: In 1992, Kennedy Brewer was arrested in Mississippi and accused of killing his girlfriend's three-year-old daughter. The medical examiner who conducted the autopsy, Dr. Steven Hayne, testified that he had found several marks on the victim's body that he believed to be bite marks. Hayne called in Dr. Michael West to analyze the marks, and Dr. West concluded that 19 marks found on the victim's body were "indeed and without a doubt" inflicted by Brewer. Brewer was convicted of capital murder and sexual battery on March 24, 1995, and sentenced to death. His conviction was based almost entirely on the bite mark evidence.

In 2001, DNA tests proved that Justin Albert Johnson, not Kennedy Brewer, committed the crime; Johnson was the same individual responsible for murdering the child in the Levon Brooks case. As a result of the DNA testing, Brewer's conviction was overturned. He had served seven years on death row and one year in jail awaiting trial.¹¹

12. Bennie Starks: Bennie Starks was convicted of raping and assaulting a 69-year-old woman in 1986, based, in part, on testimony by two forensic dentists, Drs. Russell Schneider and Carl Hagstrom. Both dentists testified that a bite mark on the victim's shoulder matched Starks' dentition. Starks spent 20 years in prison before an appeals court ordered a new trial, after DNA testing of semen recovered from the victim excluded Starks. On January 7, 2013, the state's attorney dismissed all charges against Starks.¹²

¹⁰ The Innocence Project, *Levon Brooks*, available at <http://www.innocenceproject.org/cases/levon-brooks/>.

¹¹ The Innocence Project, *Kennedy Brewer*, available at <http://www.innocenceproject.org/cases/kennedy-brewer/>.

¹² The Innocence Project, *Bennie Starks Exonerated After 25 Year Struggle to Clear His Name*, <http://www.innocenceproject.org/bennie-starks-exonerated-after-25-year-struggle-to-clear-his-name/>. See also Lisa Black, *Exonerated Man's Ordeal Ends: 'I Am Overwhelmed with Joy'*, CHICAGO TRIBUNE, Jan. 7, 2013, available at http://articles.chicagotribune.com/2013-01-07/news/chi-bennie-starks-lake-county-charges-dropped_1_bennie-starks-mike-nerheim-ordeal-ends; Donna Domino, *Dentists Sue Over Bite Mark Testimony*, available at <http://www.drbcuspud.com/index.aspx?sec=nws&sub=rad&pag=dis&ItemID=309572>.

13. Michael Cristini &

14. Jeffrey Moldowan: In 1991, Michael Cristini and Jeffrey Moldowan were convicted of the rape, kidnapping, and attempted murder of Moldowan's ex-girlfriend, Maureen Fournier. At trial, two board-certified ABFO Diplomates, Drs. Allan Warnick and Pamela Hammel, testified that bite marks on the victim's body had to have come from both defendants, to the exclusion of all others. Both men were convicted. Cristini was sentenced to 44 to 60 years, and Moldowan to 60 to 90 years.

After the conviction, an investigator hired by the Moldowan family found a witness who said he had seen four black men standing around a naked woman at the scene of the crime. The witness' story contradicted Fournier's, as Cristini and Moldowan are both white. Dr. Hammel then recanted her testimony, saying that she had been uncertain that either defendant had in fact been responsible for the bite marks. According to Dr. Hammel, she had agreed to testify only when Dr. Warnick had assured her that a third odontologist had also confirmed that the bite marks could be matched to Cristini and Moldowan to the exclusion of all others.

On October 20, 2003, the Macomb County Circuit Court granted Cristini a new trial, citing the new eyewitness evidence, Dr. Hammel's recantation, and stronger alibi evidence. Cristini was acquitted by a jury on April 8, 2004, after having served 13 years in prison. Later, Cristini filed wrongful conviction lawsuits against the City of Warren, Macomb County, and Dr. Warnick. The suit against Dr. Warnick was settled quickly for an undisclosed amount.

In 2002, the Michigan Supreme Court reversed Moldowan's conviction. On retrial, in February 2003, Moldowan was acquitted of all charges and released, having served nearly twelve years in prison. Moldowan's lawsuit was settled for \$2.8 million in 2011.¹³

15. Anthony Keko: Anthony Keko was convicted in 1994 for the 1991 murder of his estranged wife, Louise Keko. Dr. Michael West testified that a bite mark on the victim's shoulder matched Anthony Keko's dentition. Dr. West's testimony was the only direct evidence linking Keko to the crime, and prosecutors conceded that without the bite mark evidence there was no case. Keko was found guilty and

¹³ *People v. Moldowan*, 466 Mich. 862, 643 N.W.2d 570 (2002); *Moldowan v. City of Warren*, 578 F.3d 351 (6th Cir. 2009); Ed White, *Warren Settles Rape Case Lawsuit for \$2.8 Million – Falsely Imprisoned Man Sued for Violation of His Civil Rights*, DETROIT LEGAL NEWS, Oct. 19, 2011, available at <http://www.legalnews.com/detroit/1109085>; Jameson Cook, *Michael Cristini Wants Bigger Settlement than Jeffrey Moldowan*, MACOMB DAILY, Dec. 25, 2012, available at http://www.macombdaily.com/article/20121225/NEWS01/121229769/michael-cristini-wants-bigger-settlement-than-jeffrey-moldowan#full_story; Michael S. Perry, *Exoneration Case Detail: Michael Cristini*, NAT'L REGISTRY OF EXONERATIONS, available at <http://www.law.umich.edu/special/exoneration/Pages/casedetail.aspx?caseid=3133>; Hans Sherrer, *Prosecutor Indicted For Bribery After Two Men Exonerated of Kidnapping and Rape*, JUSTICE: DENIED, 2005, at 10, available at http://www.justicedenied.org/issue/issue_27/Moldowan_cristini_exonerated.html.

sentenced to life in prison. In December 1994, however, the trial judge became aware of previously undisclosed disciplinary proceedings against Dr. West. The judge began to express doubts regarding West's forensic abilities and ultimately reversed Keko's conviction.¹⁴

16. Harold Hill &

17. Dan Young, Jr.: Harold Hill was 16 when he and his codefendant, Dan Young, Jr., were convicted of the rape and murder of 39-year-old Kathy Morgan in 1990. Both men would end up spending 15 years in prison for a crime they did not commit. At trial, board-certified ABFO Diplomate Dr. John Kenney linked a bruise and a bite mark on the victim's body to Hill and Young. Both were found guilty and sentenced to life in prison without parole. It wasn't until 2004 that DNA tests excluded both Hill and Young as the source of DNA evidence found on the victim. In 2005, prosecutors finally dismissed the charges against both men. Dr. Kenney later said that the prosecution pushed him to exaggerate his results.¹⁵

18. Greg Wilhoit: Greg Wilhoit's wife, Kathy, was murdered in Tulsa, Oklahoma, in June 1985. Wilhoit was left to raise his two daughters—a 4-month-old and a 1-year-old. A year later, he was arrested and charged with the murder based on the opinions of two forensic odontologists that his dentition matched a bite mark on his wife's body. Wilhoit was found guilty and sentenced to death.

During his appeal, other forensic odontologists examined the bite mark evidence and independently concluded that the bite mark could not be matched to Wilhoit. He was released on bail for two years, and when a retrial was finally held in 1993, the judge issued a directed innocence verdict. In total, Wilhoit dealt with this tragedy for 8 years, fighting a case built entirely on bite mark analysis. Wilhoit's story was documented by John Grisham in "The Innocent Man."¹⁶

19. Crystal Weimer: A Fayette County, Pennsylvania, jury convicted Crystal Weimer of third-degree murder in 2006 for the beating death of Curtis Haith. Apart from a jailhouse informant, the only evidence placing Weimer at the scene was the testimony of forensic odontologist Dr. Constantine Karazulas, who concluded that a bite mark on the victim's hand was a "match" with Weimar's dentition. After the National Academy of Science's landmark 2009 report,

¹⁴ *A Dentist Takes The Stand*, NEWSWEEK, Aug. 19, 2001, available at <http://www.newsweek.com/dentist-takes-stand-151357>; Mark Hansen, *Out of the Blue*, ABA J., Feb. 1996, available at http://www.abajournal.com/magazine/article/out_of_the_blue/print/.

¹⁵ Ctr. on Wrongful Convictions, *Exoneration Case Detail: Harold Hill*, NAT'L REGISTRY OF EXONERATIONS, available at <http://www.law.umich.edu/special/exoneration/Pages/casedetail.aspx?caseid=3296>.

¹⁶ Journey of Hope, *Greg Wilhoit*, available at <https://www.journeyofhope.org/who-we-are/exonerated-from-death-row/greg-wilhoit/>; Witness to Innocence, *Exonerees: Greg Wilhoit, 1954-2014*, available at <http://www.witnesstoinnocence.org/exonerees/greg-wilhoit.html>.

Strengthening Forensic Science in the United States: A Path Forward, criticized the lack of scientific support for bite mark analysis, Dr. Karazulas undertook an independent review of the “science” of bite mark evidence and his testimony. He concluded that bite marks cannot be used for conclusive matches to an individual. On the basis of Dr. Karazulas’ recantation, as well as a recantation from the informant, Weimer’s conviction was vacated in October 2015, and the underlying indictment was dismissed in June 2016.¹⁷

20. Steven Mark Chaney: Steven Chaney was convicted of the murder of John Sweek, a Dallas-area cocaine dealer, in 1987; Sweek’s wife was also killed. Although nine alibi witnesses accounted for Chaney’s whereabouts on the day the crime occurred, the state’s case relied largely on the testimony of two ABFO board-certified forensic dentists, Drs. Jim Hales and Homer Campbell. At trial, Dr. Hales purported to match a bite mark on the victim’s arm to Chaney and claimed that there was a “one to a million” chance that someone other than Chaney was the biter. Similarly, Dr. Campbell opined to a reasonable degree of dental certainty that Chaney left the bite mark. Decades after Chaney’s conviction, Dr. Hales admitted that his matching testimony exceeded the limits of the science and that, in contrast to his claims at trial, there was no basis for his statistical testimony in the “scientific literature.” In light of the change in the scientific understanding of bite mark evidence since 1987 and Dr. Hales’ recantation, the Dallas County District Attorney’s Office agreed to vacate Mr. Chaney’s conviction pursuant to Texas’ “junk science writ,” which provides an avenue for post-conviction relief where the science used at trial is subsequently discredited. In October 2015, Chaney was released after 28 years of wrongful incarceration; his case is currently pending before the Texas Court of Criminal Appeals, which has final authority in Texas over all habeas determinations.¹⁸

21. William Joseph Richards: In 1997, Bill Richards was convicted of the 1993 murder of his estranged wife. On the night of her murder, Richards returned home from the graveyard shift at his job and discovered his wife bludgeoned to death. The crime scene evidence revealed a violent struggle, and an autopsy of the victim uncovered a crescent-shaped lesion on her hand. To analyze that wound, the prosecution contacted Dr. Norman Sperber, an ABFO Diplomate, who examined a photograph of the lesion and opined that the wound was a human bite mark. At Richards’ fourth trial—the first three attempts to try Richards did not include bite mark evidence and ended in mistrials—Dr. Sperber testified that his

¹⁷ Joe Mandak, *Bite-mark backtrack helps toss verdict*, BOSTON GLOBE, Oct. 2, 2015, available at <https://www.bostonglobe.com/news/nation/2015/10/01/woman-conviction-tossed-junk-science-bite-mark-case/Dgi1n45ib85uqdW1u2yqNO/story.html>; *Judge dismisses charges in bite-mark conviction*, ASSOCIATED PRESS, June 29, 2016, available at <https://www.indianagazette.com/news/police-courts/judge-dismisses-charges-in-bitemark-conviction,24491656/>.

¹⁸ Jennifer Emily, *Dallas County man freed after serving 25 years for murder over faulty science of bite marks*, DALLAS MORNING NEWS, Oct. 12, 2015, available at <http://crimeblog.dallasnews.com/2015/10/dallas-county-man-freed-after-serving-25-years-for-murder-over-faulty-science-of-bite-marks.html/>.

comparison of Richards' dentition to the photograph of the purported bite mark yielded a "pretty good alignment," and that Richards' teeth were consistent with the lesion. Dr. Sperber also testified that one facet of Richards' dentition was relatively rare. Richards presented an alibi defense based on the time of death, and he presented testimony from another ABFO board-certified forensic odontologist, Dr. Gregory Golden, who opined that although he could not eliminate Richards as the source of the bite, five out of fifteen sample dental molds from his clients in private practice also matched the lesion. With the introduction of the bite mark testimony, Richards was convicted and given a 25 year to life sentence.

In 2007, Dr. Sperber recanted his bite mark testimony at a post-conviction evidentiary hearing, but the California Supreme Court ultimately ruled against Richards in 2012, finding that recanted expert testimony does not constitute "false evidence." In response to the Court's decision, the California state legislature amended the habeas corpus statute the following year to explicitly deem expert recantations false evidence, and Richards filed a successive habeas petition shortly thereafter. In May 2016, the California Supreme Court finally granted his habeas petition and vacated his conviction.¹⁹ In June 2016, the district attorney dismissed all charges against Richards.²⁰

22. Alfred Swinton: On January 13, 1991, the body of 28-year-old Carla Terry was found in a snow bank in Hartford, Connecticut. Detectives quickly focused their attention on Alfred Swinton, whom witnesses claimed to see at the bar Terry visited on the night of her death. Swinton, who was 42 years old at the time and had no significant criminal record, maintained his innocence from the outset of the investigation. Nevertheless, he was arrested several months later, after detectives recovered a bra believed to be Terry's from a common area of Swinton's apartment building. At a probable cause hearing, the state presented testimony from forensic odontologist and ABFO Diplomate Dr. Lester Luntz, who linked a bite mark on the victim's breast to Swinton's teeth. However, the court concluded that the evidence underlying Swinton's arrest was insufficient to establish probable cause, and he was released.

The case went cold for the next several years, until officials reinvestigated the murder through a statewide effort to close previously unsolved homicides. That reinvestigation again culminated in Swinton's arrest. At a subsequent probable cause hearing, the victim's sister—who had not identified the bra in 1991—changed her testimony and asserted that she had given the bra found in Swinton's building to Terry on the night of the murder. In addition, forensic dentist Dr. Constantine "Gus" Karazulas testified for the prosecution that, to a reasonable degree of scientific certainty, Swinton was the source of the bite mark. On the

¹⁹ *In re Richards*, 63 Cal. 4th 291, 371 P.3d 195 (2016).

²⁰ Jordan Smith, *After 23 years and four trials, prosecutors finally dismiss charges against Bill Richards*, INTERCEPT, June 28, 2016, available at <https://theintercept.com/2016/06/28/after-23-years-and-four-trials-prosecutors-finally-dismiss-charges-against-bill-richards/>.

basis of this new evidence, the court found that probable cause existed for Swinton's arrest. Though there were only two pieces of physical evidence purportedly linking Swinton to the crime—the bra identified by Terry's sister and the alleged bite mark match—the trial spanned nearly two months, of which five days were devoted to Dr. Karazulas' testimony. Ultimately, a jury found Swinton guilty of murder, and he was sentenced to 60 years imprisonment.

In 2014 and 2015, key pieces of evidence from the murder were subjected to modern DNA testing and excluded Mr. Swinton. In particular, the testing developed a male DNA profile from swabs of the bite mark that did not match Swinton. Additionally, "touch" DNA testing was conducted on the bra; both Swinton and Terry were excluded as the source of skin cells on the bra, suggesting that the bra did not belong to Terry. In 2017, fingernail scrapings from the victim underwent testing, and the results also excluded Swinton. Independently, Dr. Karazulas, who disavowed bite mark evidence as unvalidated and unreliable in the wake of the National Academy of Sciences' landmark 2009 report on forensic science, recanted his testimony in its entirety. On the basis of the new DNA evidence and the new evidence discrediting the bite mark comparison, Swinton filed a petition for a new trial. With the consent of the Hartford State's Attorney, the court granted Swinton's request on June 8, 2017. He was ordered released from prison while the prosecution considers whether to retry him for the murder, after more than 19 years of wrongful incarceration and nearly 26 years after his initial arrest.²¹

23. Sherwood Brown: Sherwood Brown spent 24 years on death row in Mississippi before his capital murder convictions were overturned. Though Brown has consistently maintained his innocence, he was implicated in the January 1993 murder of a thirteen-year-old neighbor, her mother, and her grandmother in their DeSoto County home. From the crime scene, investigators followed a trail of bloody shoeprints toward a dirt road near Brown's home. Four days later, when Brown was arrested, they seized a pair of Brown's sneakers that tested positive for blood. The arresting officers also noticed a wound on Brown's wrist. Two forensic dentists, Drs. Harry Mincer and Michael West, were called to examine the wound, which they deemed a human bite mark. At Brown's 1995 trial, Drs. West and Mincer testified that the pattern injury on Brown matched the child-victim's teeth. Dr. Mincer testified that "the teeth of [the child victim] highly probably had made the bite mark on . . . the left wrist of Sherwood Brown." He also told Brown's jury that he had a zero error rate for bite mark comparisons and "thought [he] was always right." In addition to the odontologists, the prosecution called an FBI agent, Geary Kanaskie, who testified that the sneakers seized from Brown were consistent with the crime scene shoeprints, and an acquaintance of Brown, who alleged that Brown confessed to him that he committed the murders.

²¹ The Innocence Project, *With Consent of State's Attorney, Connecticut Court Vacates 2001 Murder Conviction Based on DNA and Other Evidence; Alfred Swinton Released*, available at <https://www.innocenceproject.org/alfred-swinton-exonerated-and-released-after-19-years-in-prison/>.

In 2012, Brown won the right to subject evidence from the crime scene to DNA testing. The results of the testing uncovered a foreign male's genetic profile in the child-victim's saliva, on the cup of her bra, and in hairs from scrapings of her pubic region, but Brown was excluded as the source of all the DNA, proving that she neither bit Brown nor that he attacked her. Moreover, post-conviction DNA testing revealed that the blood on Brown's sneakers did not match the profiles of any of the murder victims, severing any link between Brown and the crime scene. In October 2017, on the basis of the new DNA evidence and new research discrediting the bite mark evidence generally, the Mississippi Supreme Court vacated Brown's conviction and ordered a new trial. The case has been remanded to the Circuit Court of DeSoto County, where the State is weighing whether to pursue a re-trial.²²

²² *Brown v. State*, 690 So.2d 276 (Miss. 1996). See also *Brown v. State*, No. 2017-DR-00206-SCT (Miss. Oct. 26, 2017) (en banc), https://courts.ms.gov/newsite2/appellatecourts/docket/sendPDF.php?f=700_342377.pdf&c=85895&a=N&s=2.

DESCRIPTIONS OF WRONGFUL INDICTMENTS BASED ON BITE MARK EVIDENCE

1. **Dale Morris, Jr.:** In 1997, Dale Morris, Jr., was arrested based on bite mark analysis matching his dentition to a mark found on a nine-year-old murder victim, Sharra Ferger. Morris was a neighbor to the little girl, who had been found stabbed, sexually assaulted, and bitten in a field near her Florida home. Board-certified ABFO Diplomates Dr. Richard Souviron and Dr. Kenneth Martin agreed that the bite marks on the girl were a probable match to Morris. Morris spent four months in jail until DNA tests proved his innocence. Highlighting the importance of the bite mark evidence to the police's decision to arrest Morris, Detective John Corbin said that Morris "was probably one of our least likely suspects in the neighborhood, but through the forensics that we conducted in the investigation he was linked to the crime."²³

2. **James Earl Gates:** In April 1997, prosecutors from Humphreys County, Mississippi, arrested James Earl Gates for the capital murder of his then-girlfriend. Gates' indictment rested solely on the purported match between a bite mark found on the victim and Gates' teeth. Dr. Steven Hayne claimed to have found bite marks on the victim while conducting an autopsy, and forensic odontologist Dr. Michael West confirmed the marks were bites and concluded that they matched Gates' dentition. Gates spent several months in jail awaiting trial before nascent DNA technology excluded him from a profile obtained from scrapings from the victim's fingernails. Prosecutors subsequently dismissed the case. In 2012, the Mississippi Crime Lab, at the request of Humphreys County law enforcement, engaged in additional DNA testing of the biological material collected at the murder scene. Because of advancements in technology, the subsequent testing yielded an identifiable profile of an individual who had, in the initial stages of investigation, been a prime suspect. That individual had since been convicted of another homicide.²⁴

3. **Edmund Burke:** In 1998, Edmund Burke was arrested for raping and murdering a 75-year-old woman. The victim had bite marks on her breasts, and board-certified ABFO Diplomat Dr. Lowell Levine "formed an initial opinion that Burke could not be excluded as the source of the bite marks" but asked to see enhanced photos before rendering a final opinion. After examining the enhanced

²³ Ian James & Geoff Dougherty, *Suspect in Girl's Murder Freed after Four Months*, ST. PETERSBURG TIMES, Feb. 28, 1998, at 1.A, available at http://www.wearethehope.org/pdf/times_02_28_1998.pdf; The Innocence Project, *Cases Where DNA Revealed That Bite Mark Analysis Led to Wrongful Arrests and Convictions*, *supra* n.9; Flynn McRoberts & Steve Mills, *From the Start, a Faulty Science*, CHICAGO TRIBUNE, Oct. 19, 2004, available at <http://www.chicagotribune.com/news/watchdog/chi-041019forensics,0,7597688.story>.

²⁴ Radley Balko, *Solving Kathy Mabry's Murder: Brutal 15-Year-Old Crime Highlights Decades-Long Mississippi Scandal*, HUFFINGTON POST, Nov. 7, 2013, available at http://www.huffingtonpost.com/2013/01/17/kathy-mabry-murder-steven-hayne-michael-west_n_2456970.html.

photos, Dr. Levine concluded that Burke's teeth matched the bite mark on the victim's left breast to a "reasonable degree of scientific certainty." DNA testing of saliva taken from the bite mark site excluded Burke as the source of the DNA, however, and prosecutors dropped the case against him. The person who actually committed the crime was later identified when DNA from the bite mark was matched to a profile in the national DNA database. Dr. Levine remains one of the few full-time forensic odontologists in the nation, and is regarded as one of the field's top practitioners.²⁵

4. **Anthony Otero:** In 1994, Anthony Otero was charged with larceny and the first-degree murder and rape of a 60-year-old woman, Virginia Airasolo, in Detroit, Michigan. A warrant for Otero's arrest was issued after ABFO Diplomate Dr. Allan Warnick claimed to have matched the bite marks on the victim's body to Otero's dentition. At the preliminary hearing on December 13, 1994, Dr. Warnick testified that Otero was "the only person in the world" who could have caused the bite marks on Airasolo's body.

In January 1995, DNA testing excluded Otero as the source of the DNA found on the victim and he was released in April, after spending five months in jail. Following Otero's release, a second forensic odontologist, ABFO Diplomate Dr. Richard Souviron, concluded that the marks on the victim were consistent with human bite marks but were too indistinct to be used to identify a suspect. Ultimately, the charges against Otero were dismissed.²⁶

5. **Johnny Bourn:** In 1992, Johnny Bourn was arrested for the rape and murder of an elderly Mississippi woman after Dr. Michael West matched a bite mark on the victim to Bourn. Bourn was imprisoned for 18 months, despite hair and fingerprint evidence pointing to another suspect. Ultimately, Bourn was released when he was excluded as a suspect by DNA testing performed on fingernail scrapings from the victim, but not before he had spent about one and a half years in jail awaiting trial.²⁷
6. **Dane Collins:** In 1989, Dane Collins was arrested and charged with the rape and murder of his 22-year-old stepdaughter, based largely on bite mark comparison evidence. The Sante Fe, New Mexico, District Attorney declared his intent to seek the death penalty. Despite evidence that Collins could not produce sperm and therefore could not have been the perpetrator, the D.A. gave several public interviews stating that while there was not enough evidence to try the case, he believed Collins was guilty of the crime. Fifteen years later, a man named Chris

²⁵ *Burke v. Town of Walpole*, 405 F.3d 66, 73 (1st Cir. 2005).

²⁶ The Innocence Project, *Cases Where DNA Revealed That Bite Mark Analysis Led to Wrongful Arrests and Convictions*, *supra* n.9; *Otero v. Warnick*, 614 N.W.2d 177 (Mich. Ct. App. 2000).

²⁷ Hansen, *supra* n.14; *Michael West Responds*, THE AGITATOR, Part 167, March 1, 2009, available at <http://www.theagitator.com/2009/03/01/michael-west-responds/>; Paul C. Giannelli & Kevin C. McMunigal, *Prosecutors, Ethics, and Expert Witnesses*, 76 FORDHAM L. REV. 1493 (2007).

McClendon was matched to DNA found on the victim. He pled "no contest" to the crime in exchange for describing how he had committed the rape and murder. (McClendon was already serving life in prison after he was convicted of kidnapping and raping a 24-year-old woman.)²⁸

7. **Ricky Amolsch:** Ricky Amolsch's girlfriend, Jane Marie Fray, was found dead on August 23, 1994. She had been stabbed 22 times and had an electrical cord wrapped around her neck. The arrest warrant for Amolsch was based on a finding by Dr. Allan Warnick that a bite mark that had been found on the victim's left ear was "highly consistent" with Amolsch's dentition. Charges were not dropped until 10 months later when the eyewitness who had identified Amolsch's van at the crime scene was himself arrested for raping another woman in the same trailer park. Amolsch was jailed for 10 months until his trial. During that time, he lost his home, savings, and children.²⁹

²⁸ Jeremy Pawloski, *Plea in '89 Slaying Eases Parents' Pain*, ALBUQUERQUE J., Aug. 14, 2005, available at <http://abqjournal.com/news/state/380765nm08-14-05.htm>.

²⁹ Jim Fisher, *Forensics Under Fire: Bite Mark Evidence*, available at <http://jimfisher.edinboro.edu/forensics/fire/mark.html>; Katherine Ramsland, *Bite Marks as Evidence to Convict – Whose Bite Mark is it, Anyway?*, CRIME LIBRARY, available at http://www.trutv.com/library/crime/criminal_mind/forensics/bitemarks/5.html.

Statistical Analysis of Forensic Odontologist Involvement In Cases of Wrongful Bite Mark Convictions and Indictments

The misapplication of forensic sciences is a leading contributing factor to wrongful conviction,³⁰ and of the unvalidated techniques that have contributed to wrongful convictions and indictments later overturned through DNA testing, bite mark comparison poses an acute threat to the reliability and fairness of the criminal justice system. Of the 30 known wrongful convictions and indictments secured through the use of bite mark comparison evidence, the forensic dentists who performed the comparisons are known in all but two cases.³¹ Among those 28 cases with available data, a total of 21 dentists offered bite mark comparison opinions or testimony.³² Approximately 86%, or 19, of those dentists were Diplomates of the American Board of Forensic Odontology at the time of their relevant casework.³³ The raw data is presented below in Chart 1; ABFO Diplomates are highlighted in yellow. A brief statistical summary is offered in Chart 2.

³⁰ The Innocence Project, *Unvalidated or Improper Forensic Science*, available at <http://www.innocenceproject.org/causes/unvalidated-or-improper-forensic-science/>.

³¹ That is, there are two cases—the wrongful conviction of Greg Wilhoit in Oklahoma and the wrongful indictment of Dane Collins in New Mexico—in which the forensic odontologists who performed the bite mark comparisons are not named.

³² Nine forensic odontologists participated in multiple cases of wrongful conviction and/or indictment. Conversely, several cases involved multiple dentists.

³³ *American Board of Forensic Odontology Diplomat Information, Updated 8/2017*, available at <http://abfo.org/wp-content/uploads/2017/05/ABFO-Diplomat-Information-revised-August-2017.pdf>.

Chart 1: Wrongful Bite Mark Convictions and Indictments by Odontologist and ABFO Diplomat Status

Forensic Odontologist	Wrongful Convictions and Indictments	ABFO Diplomat Status
1. Lowell Levine	-Keith Harward -Edmund Burke	Diplomate
2. Alvin Kagey	-Keith Harward	Diplomate
3. Lowell Johnson	-Robert Lee Stinson	Diplomate
4. Raymond Rawson	-Robert Lee Stinson -Ray Krone	Diplomate
5. Ira Titunik	-Gerard Richardson -Edmund Burke	Diplomate
6. Robert Barsley	-Willie Jackson	Diplomate
7. Edward Mofson	-Roy Brown	Diplomate
8. Homer Campbell	-Calvin Washington -Joe Sidney Williams -Steven Chaney	Diplomate
9. Jim Hales	-Steven Chaney	Diplomate
10. Harvey Silverstein	-James O'Donnell	Diplomate
11. Michael West	-Levon Brooks -Kennedy Brewer -Anthony Keko -Johnny Bourn -James Earl Gates -Sherwood Brown	Diplomate
12. Allan Warnick	-Michael Cristini -Jeffrey Moldowan	Diplomate
13. Pamela Hammel	-Michael Cristini -Jeffrey Moldowan	Diplomate
14. John Kenney	-Harold Hill -Dan Young, Jr.	Diplomate
15. Norm Sperber	-William Richards	Diplomate
16. Richard Souviron	-Dale Morris, Jr.	Diplomate
17. Kenneth Martin	-Dale Morris, Jr.	Diplomate
18. Lester Luntz	-Alfred Swinton	Diplomate
19. Harry Mincer	-Sherwood Brown	Diplomate
20. Russell Schneider	-Bennie Starks	Not board certified
21. Carl Hagstrom	-Bennie Starks	Not board certified
22. Constantine (Gus) Karazulas	-Crystal Weimer -Alfred Swinton	Not board certified

Chart 2: Statistical Summary of Cases of Wrongful Bite Mark Conviction and Indictment

Total Wrongful Bite Mark Convictions and Indictments:	30
Total Years of Wrongful Incarceration (approx.):	346
Total Wrongful Bite Mark Death Sentences:	4
Wrongful Bite Mark Convictions and Indictments Where Forensic Dentist(s) Are Named:	28
Forensic Dentists Involved in Wrongful Bite Mark Convictions and Indictments:	22
ABFO Diplomates Involved in Wrongful Bite Mark Convictions and Indictments:	19
Non-Board Certified Odontologists Involved in Wrongful Bite Mark Convictions and Indictments Cases:	3
Percentage of Dentists Responsible for Wrongful Bite Mark Conviction and/or Indictments With ABFO Diplomate Status:	86.4% (19 of 22)
Percentage of Wrongful Bite Mark Convictions and Indictments With ABFO Diplomate Involvement:	92.9% (26 of 28)