

# FORENSIC NEWS

## The Intercept reports: Bitten by Experts

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Crime and Justice reporter Jordan Smith has written an informative piece on bitemarks. Centering on the Bill Richards case she describes how Skip Sperber, a highly respected forensic dentist, stepped up, did the right thing, and said that he was wrong in a bitemark case. End result? Nothing. Richards remains in prison, seriously ill and wondering how, after more trials than anyone should have, he is still there. There is no doubt that the bitemark, if indeed it is a bitemark, is of low forensic significance but the testimony that accompanied it – with dubious statistics that relate more to DNA than subjective pattern matching, clinched the conviction – something that hadn't been done in previous trials where the bitemark evidence was not presented. This is certainly a case where this jury friendly evidence prevailed with no apparent consideration of the underlying science. Not something that unusual.

Smith's reporting is detailed and moves from the details of Richards case to the wider context of bitemarks, not least recent bitemark research:

*It was at this same conference in Orlando that the ABFO was subjected to yet another blow to the credibility of bite mark evidence. Seeking to respond to the claims that there is no science to support their professional conclusions, ABFO members constructed an elaborate "decision tree" designed to guide their analysis. The first question on that tree is simple: Is this a bite mark? But in Orlando, two members of the odontology community — ABFO member Dr. Adam Freeman and Dr. Iain Pretty, a professor from the University of Manchester — presented results that were indisputably dismal. At this most basic level, even among the most seasoned diplomates, there was virtually no consistency on whether or not a given imprint was a bite mark at all. Out of 100 case studies reviewed by 39 ABFO-certified bite mark analysts, there was unanimous agreement only four times. (Notably, the study didn't even consider whether the odontologists' decisions were correct.) "If you can't train somebody with appropriate experience and qualifications [how to identify a bite mark] then it's magic," one odontologist said. "And, you know, that's not forensic science."*

Highly recommended reading and a great job in objective reporting of this field – a forensic science that seems to be, on a daily basis, under attack. Read the story here on the Intercept website and be sure to check out their other content – it's well worth a read.

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The article in question is reproduced on the next pages



## Bitten By Experts

### How the Flawed Science of Bite Mark Analysis Imprisoned a Man for Murder

Photo: Kendrick Brinson for The Intercept



Jordan Smith

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THE CALIFORNIA MEDICAL FACILITY — a nearly 2,300-man prison in Vacaville, California — is tucked between dry hills and a tidy neighborhood of modest homes and well-manicured baseball diamonds in the two public parks that abut the property. The cheers of Little League spectators rise over the oleander bushes, past rows of stately palm trees, and through the razor wire fencing around the prison. The sounds are a tantalizing — if not torturous — reminder of how close, and yet inaccessible, the real world is from inside the fortified compound.

When he's working on the roof, six stories up, 65-year-old Bill Richards says he almost feels like he's part of the real world again — he can see into the hills and the baseball fields. He can pretend, at least for a while, that he lives in one of those tidy little houses. Being in prison, he says, is like living on an "alien planet — here's the one we're on, here's the one you're on."

Someday he hopes to rejoin the world outside. But for now, Richards is serving a sentence of 25-to-life for murdering his wife, Pamela, in August 1993 — a crime he insists he did not

commit. He says he was the victim of a shoddy police investigation, an overzealous prosecution, and, most significantly, questionable forensic evidence. The state used this evidence as conclusive proof that only Richards could have strangled and bludgeoned his wife of 22 years, leaving her half-naked body in the dirt outside a shed on their 5-acre property near Hesperia in California's High Desert.

Specifically, it was an increasingly discredited forensic discipline — bite mark analysis — that condemned him to a life behind bars. The critical piece of evidence: a bruise found on the top of Pamela's right hand, which, according to the trial testimony of two prominent dentists, was caused by a human bite, whose injury pattern was consistent with her husband's lower teeth.

But then, the dentists changed their minds.



The alleged bite mark used to implicate Bill Richards.

Photo: Courtesy of the California Innocence Project

Richards had already been incarcerated for 15 years when, during an evidentiary hearing in 2008, the state's star witness, Dr. Norman "Skip" Sperber, a legend within the odontology community, recanted his previous testimony, saying that he had been wrong about the mark on Pamela's hand. He said he had based his findings on bad photographic evidence, and drawn conclusions that he could no longer support.

Sperber was not alone in rethinking the kinds of conclusions one could draw based on such visual analysis. In 2009, the National Academy of Sciences released a [groundbreaking report](#) on the state of forensics, which seriously questioned a range of forensic disciplines used in criminal cases as flawed and unscientific. In particular, the authors wrote, pattern-matching branches like bite mark evidence lack any actual scientific underpinning. Indeed, pattern-matching forensics rely entirely on so-called "experts" analyzing visual evidence based on subjective criteria.

Sperber's recanted testimony — along with new DNA evidence taken from the crime scene that matched an unknown male — led the presiding judge to rule that Richards' conviction

should be overturned. But California's higher courts disagreed, and Richards remains in prison.

Today, Richards' case is pending before the California Supreme Court. In the years since Sperber first recanted his testimony, bite mark evidence has come under even greater scrutiny. Some of the harshest criticism comes from within the field itself — from forensic odontologists who now say the bite mark evidence dentists for years have peddled in courtrooms is pure junk. Tests conducted by members of the nearly 40-year-old American Board of Forensic Odontology — the discipline's certifying body — have repeatedly undermined the expertise claimed by its own members. In July, Jo Handelsman, the associate director for science in the White House Office of Science and Technology Policy, referenced one such study, [telling attendees](#) of the International Symposium on Forensic Science Error Management that bite mark analysis “is not based on science” and should be “eradicated.”

To date, 24 people arrested or convicted on bite mark evidence have been exonerated by DNA, according to the Innocence Project. It is a figure Sperber described to *The Intercept* as “very disturbing” — if not terribly surprising. Sperber said that over his career he's seen lots of mistakes made in bite mark analysis — by colleagues who aren't well-trained, aren't diligent or who just don't care. He said he's tried to work within the odontology community to clean up their act, with little success.

Indeed, as people like Richards challenge their convictions, the growing tension over the future role of bite mark evidence has led to upheaval within the field. In one instance, forensic odontologists have orchestrated an attempt to discredit one of their own: Dr. C. Michael Bowers, a California dentist, who is one of the discipline's most vocal critics and among Richards' staunchest supporters.

Richards has now been incarcerated for 22 years. Nearly all of his family and loved ones have died. He has suffered for more than a decade with poorly treated cancer.

Tall, with a head of silvered hair combed neatly back from his slender face, Richards sat in a courtyard at the California Medical Facility in June, touching a wedding ring that he still wears. He loved Pamela, he says, and he did not kill her — and he believes the district court judge who heard Sperber's recantation understood that. It's been seven years since “the judge ruled me innocent,” Richards says. “I'm still sitting here.”

“IT'S THE WORST THING that could happen,” says Alex Simpson, associate director of the California Innocence Project, which has represented Richards since 2001. “You come home to find that your wife has been brutally murdered — and that's only where it starts for Bill Richards. The day that most people would believe would be the worst day of your life ... that's where Bill's nightmare begins.”

It was August 10, 1993. As Richards tells it, when he got home shortly before midnight from working the swing shift at a manufacturing facility in Corona, the first thing he noticed was how dark it was.

He and Pamela — whom he'd fallen in love with and married back in 1971 — owned a 5-acre property nestled within a small box canyon, a rough piece of the High Desert northeast

of San Bernardino. The property was linked to Interstate 15 via a winding, switchbacked state road. From there — at the bait shop, serving nearby Silverwood Lake — you turned onto a dusty road, traveling deeper into the desert to reach the property.

The critical evidence: a bruise on Pamela’s hand, which, according to the testimony of two prominent dentists, was caused by a human bite.

The couple had owned the land for eight years, but had only moved in less than a year before, after selling their house in Riverside to build a desert compound. So far they had constructed a shed, cluttered with personal effects, including clothes, a couch and a television. Until construction was complete on the rest of the compound, they were living in a small Nissan Sunrader RV, which they powered using heavy-duty marine batteries attached to the camper along with a generator, housed nearby.

As he made the 45-mile drive from Corona, Richards says he was looking forward to getting home. He and Pamela had plans to watch *Married With Children*, which aired at 12:30 a.m. But when he pulled up in his Ford truck, he says, the property was completely dark. That was strange — Pamela was night-blind.

Richards says he took a flashlight and went into the shed to see if she was in there. She wasn’t. When he emerged, he saw her: Pamela was steps away, lying in the dirt. She was face down, nude below the waist, and wasn’t moving. At first he thought she had fallen. He knelt and cradled her, turning her body toward him. That’s when he says his fingers sank into the area where bone should have supported her cheek and left eye socket. Face up, the damage was clear. The left side of Pamela’s head was caved in — her skull was crushed and part of her ear was missing. She was clearly dead.

Richards went to call the police. Inside the camper, the phone rang before he got to it. It was Eugene Price, a helicopter pilot, with whom Pamela had been having a sexual relationship. Richards knew about the affair. He and Pamela had long had an open relationship and their dalliances outside of marriage were just “recreational sex,” Richards says. According to Price, Richards told him that he’d just gotten home and that Pamela was dead; he didn’t know what to do. Call the police, Price said.

Richards first dialed 911 at 11:58 p.m. He called a second time less than 10 minutes later, at 12:06 a.m. By 12:33 a.m. the police still hadn’t arrived and he called 911 again, this time frantic, defense lawyer H. Charles Smith would assert during opening arguments at Richards’ 1997 trial: “Where the fuck are you people, my wife has been murdered.”



Pamela Richards, Bill Richards’ wife.

Photo: Courtesy of the California Innocence Project

Nearly 40 minutes after Richards first called 911, San Bernardino County Sheriff's Deputy Mark Nourse arrived on the scene. Nourse came up the dusty road without his siren activated. He didn't know where he was going; it was Richards who got him to the property, by flashing the headlights of his Ford toward the deputy.

Nourse was almost immediately suspicious of Richards, who offered "unsolicited" details about the crime scene. Outside the camper, the generator's oil tank was open, its cap sitting on top of the machine. You had to check the oil before running the generator, so Richards theorized that Pamela had been back there, aiming to start up the power before she was attacked. On the ground was a spilled bottle of oil. Near a "round rock soaked in blood," Richards recalls, were Pamela's jeans and one of her sneakers. Richards told Nourse that Pamela had probably gone to start the generator but was assaulted, then bludgeoned by the shed, where her body was found near blood-stained stones. Inside the camper, there was blood on a pair of pillows stacked on a couch. Pamela's underwear was discarded on the floor.

Richards alternated between calm and distraught, Nourse later testified, describing Richards' story as sounding "rehearsed, like he was reading from a play." Richards refused to stay away from Pamela's body, despite being repeatedly asked to clear the crime scene so that it could be preserved for investigators.

Whatever the intention, this did not happen. The first of three San Bernardino County sheriff's detectives wouldn't arrive at the property until 3 a.m. In the intervening hours, the couple's dogs, who generally roamed free, ran throughout the crime scene unimpeded and repeatedly disturbed Pamela's body — by morning, the animals had nearly buried her head in dirt.

The rest of the detectives finally arrived, only to decide they would wait until after sunrise to assess the scene. In the meantime, Richards could tell that he was already the prime suspect. "They were all staring at me like I was steak on the menu," he recalls. Sometime before dawn Richards was taken to the sheriff's station for questioning. He denied having anything to do with Pamela's death. The cops interrogated him for hours, until mid-afternoon on August 11, when he was finally allowed to leave.

For the next few weeks, according to the official police report, not much happened. Pamela's autopsy found cuts and bruises on her body, as well as missing fingernails that had been apparently ripped off in a violent struggle. The pathologist concluded that she'd been strangled and then bludgeoned, but found no signs of sexual assault. No time of death was established.

Police interviewed several of Pamela's friends and family, and her co-workers at the Olive Garden, but spoke only briefly to Bill and Pamela's neighbors, even though Richards says he told investigators that he was wary of the "trash" who lived nearby. The neighbors' adult son had trained a telescope on the Richards' property in order to spy on Pamela, and someone in the family had also trespassed and stolen water from the couple, Richards says.

In fact, there is scant evidence in the police report to suggest that investigators ever really considered anyone other than Richards as a suspect — and it appears they never seriously investigated Eugene Price, the man with whom Pamela had an extramarital relationship.

Price told police that he had met Pamela more than a year before her death. They grew close after he'd been seriously injured in a helicopter crash. Their relationship started out platonic, with Pamela supporting him through his rehab, and turned romantic later on. Price told police that Pamela was planning to leave Richards because he was abusive. He would testify in 1997 that he loved Pamela and on the day she was murdered had been away from the area, looking for an apartment for the two of them to share once she left Richards.

Several people (including Price — and at least one of his friends) told the police that Richards had previously been physically violent with Pamela. Yet there was no mention of this by the prosecution during Richards' 1997 trial. Price told police that Richards had once hurt Pamela so badly that an ambulance had to be called to the Richards' property. He also said that Pamela told him not long before her death that Richards had increased a life insurance policy on her. But the police report is otherwise silent on these claims — there is no mention of requests for an ambulance from the property, and no additional indication that there was a life insurance policy.

Two of Pamela's family members told police that they were aware the couple had a difficult relationship and that Pamela had considered leaving Richards. Still, in a statement to the court after Richards was convicted, Pamela's sister, now deceased, said she did not believe that Richards had anything to do with her sister's murder. She said she believed that Price was stalking Pamela and that Pamela was actually afraid of Price. Pamela, she testified, "was deathly afraid of this guy."

*The Intercept* made repeated attempts to contact Price for comment, but he did not respond.



The blood-stained cinderblock found at the crime scene.

Photo: Courtesy of the California Innocence Project

Whatever the truth about Price, his relationship with Pamela was just one area police did not fully investigate. Though police collected the most obvious evidence — blood-stained paving stones and a cinderblock, which were clearly the murder weapons — they did not do much more. They only dusted one item — an overturned oil container — for fingerprints.

Instead, they continued to focus on Richards. On September 3, 1993, police brought him in for a polygraph test. The examiner concluded he had been “deceptive” on relevant questions related to Pamela’s death. Richards was arrested and charged with murder. He has been behind bars ever since.

THE STATE’S CASE against Richards was straightforward. Upset about the state of the couple’s finances (Pamela was bad at handling money and had gotten behind on bills) and angry at her relationship with Price, Richards came home from work just before midnight on August 10 and attacked his wife, ultimately strangling and bludgeoning her to death. Richards then staged the crime scene to make police think someone else was responsible for the violence.

The defense said this was nonsense. Yes, the couple had some money issues, and yes, Pamela had been dating Price. But neither money problems nor affairs were anything new — and certainly not worth killing over — and the couple was committed to staying together.

But even if that weren’t the case, the defense argued, as a practical matter, it was impossible for Richards to have left work in Corona just after 11 p.m., when he clocked out for the night, and then to drive 45 miles back home in time to attack and kill Pamela before 11:58 p.m., when he first dialed 911. In a pretrial hearing, one sheriff’s investigator testified that he made the trip in roughly 41 minutes, driving at 75 miles per hour — well over the posted speed limit of 55 miles per hour. Assuming Richards drove that fast, this time frame would have left him roughly 10 minutes to murder Pamela. The state maintains this was plenty of time to get the job done.



Bill Richards was photographed by investigators hours after he found Pamela’s body.

Photo: Courtesy of the California Innocence Project

But more than anything, prosecutors leaned heavily on forensics to make their case. The state pointed to shoe prints at the scene — or, really, the lack of prints — and to blood spatter to

say that Richards was responsible for the crime. Lead investigator Norm Parent, who said he had experience in “tracking,” testified that there were few shoe or tire prints found on the Richards’ property. This showed that no one other than Richards or Pamela had been there, he said. But Parent did not find any of Richards’ shoe prints at the crime scene either (except for near his pickup truck), and Parent acknowledged that the couple’s dogs had been running around the scene for hours. (He found plenty of paw prints.)

San Bernardino County Sheriff’s Department criminalist Daniel Gregonis explained that through blood-spatter analysis, he could link traces of blood found on Richards’ clothes to the copious amounts of blood found on, near, and around Pamela’s body. This demonstrated that Richards had bludgeoned her, he said. Yet none of Richards’ DNA was found at the scene. Gregonis also said his analysis showed that Richards did not cradle Pamela as he claimed he did upon finding her. (The 2009 NAS report was also highly critical of blood-pattern analysis, concluding that many experts extrapolate conclusions far beyond “what can be supported.”)

In the end, the state’s case was slim – and apparently unconvincing. After two separate full trials, the first ending in August 1994 and the second in January 1995, jurors deadlocked on Richards’ guilt, each time prompting a mistrial.

Richards had been incarcerated for 15 years when the state’s star witness, Dr. Norman “Skip” Sperber, recanted his testimony.

Richards was tried a third time, in May 1997. This time, things were different. Using money given to him by a friend, Richards had retained counsel (he’d previously been represented by a public defender). Richards did not testify on his own behalf, as he had at his previous trials. But most importantly, the state had damning forensic evidence that it had not previously introduced, which implicated Richards as the killer.

Specifically, the state for the first time said that a mark found on Pamela’s right hand – which the medical examiner initially dismissed as having likely come from an animal bite — was actually the result of a human bite.

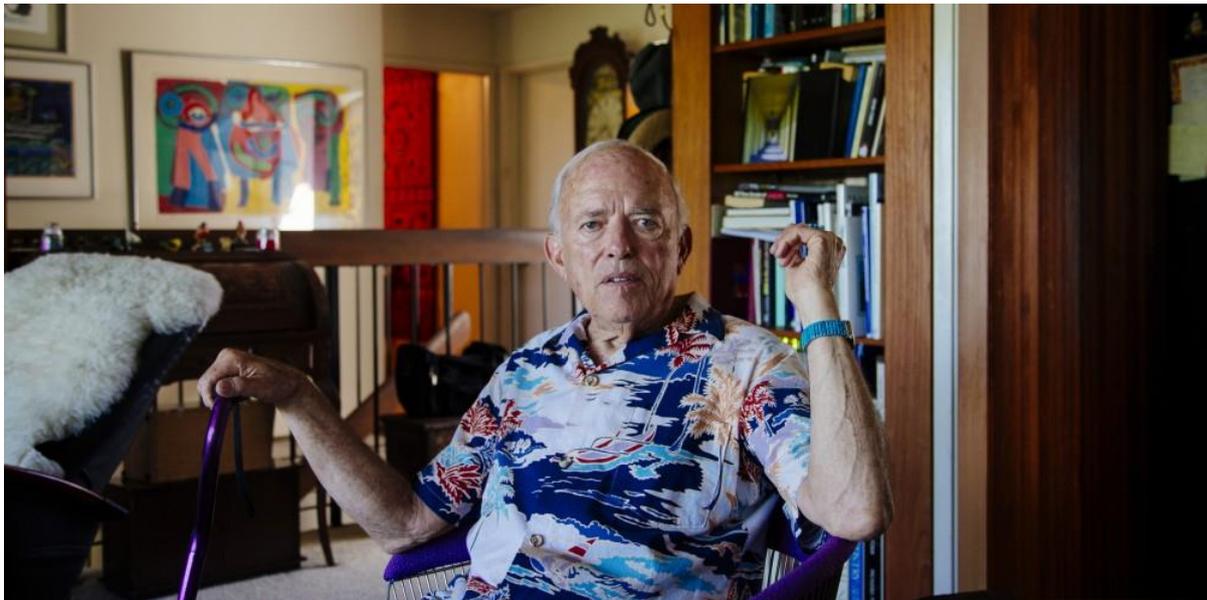
The mark was not swabbed for DNA.

To present this evidence, the state called the celebrated San Diego dentist Dr. Norman “Skip” Sperber, who for decades served as that county’s chief forensic odontologist. Sperber, a founder of the American Board of Forensic Odontology (ABFO), had worked on many high-profile cases involving bite mark evidence. Establishing his credentials for the jury, he testified that he had helped investigate the serial killer Ted Bundy, whose case put bite mark analysis on the map.

Sperber’s job was to determine whether the mark on Pamela’s skin was the result of a human bite and, if so, whether Richards was the one who did the biting. Sperber concluded both were likely true. Although the photograph of the mark was not ideal, he said, he found that it aligned with a model of Richards’ lower dentition. Particularly interesting to Sperber was the absence of a mark where the biter’s lower right canine tooth should be. As it happened, Richards’ lower right canine jutted out toward his lip and was under-erupted — lower than his other teeth. Hence it might not leave an impression, Sperber concluded. Based on his 40-plus years in dentistry, Sperber testified, he could say that out of 100 people, “one or two or less” would have this “kind of unique feature.”

In response, the defense called its own well-known forensic odontologist, Dr. Greg Golden. But his testimony was contradictory, and not particularly helpful to Richards. If anything, it may have helped to convict him. Golden agreed that the mark on Pamela’s hand was a bite mark and that it was consistent with Richards’ dentition. But then he also said that he was able to find other dental models among his personal collection that matched the pattern on Pamela’s hand as well, “if not better,” than did Richards’. Then he pivoted again: “Everybody’s teeth are unique to them as much as the fingerprints and DNA are unique to that person,” he testified. And he echoed Sperber’s claim that Richards’ lower dentition might be found in 2 percent of the population — “if that.”

On July 8, 1997 Richards was found guilty of first-degree murder.



Forensic dentist Dr. Norman “Skip” Sperber.

Photo: Kendrick Brinson for *The Intercept*

BITE MARK ANALYSIS relies on two conceits: first, that human dentition is unique – as unique as DNA. And second, that human skin is a reliable medium on which to record such a unique print. The problem is that neither proposition has ever been proven. In fact, to date, studies have shown exactly the opposite — that human dentition is not at all unique (think of the impact of orthodontics, for example), and that human skin is too malleable a substrate on which to perfectly record and preserve a bite.

One of the most vocal skeptics of bite mark evidence is California dentist Dr. C. Michael Bowers, who also works as a lawyer in Ventura. Bowers got involved in forensic dentistry in the eighties and quickly became a diplomat with the ABFO. By the mid-nineties he’d only testified in court in two bite mark cases — once for the prosecution and once for the defense.

Perhaps it was the confluence of his dental and legal training, but around the same time, Bowers began to think more broadly and critically about the value of bite mark evidence in the criminal justice system.

In particular, it was the rise of DNA evidence that helped Bowers to come to a solid — and within his field, controversial — conclusion: There is simply no science to back up bite mark analysis. There is no proof that odontologists can either reliably identify a wound as a bite mark or reliably match an alleged bite mark to an alleged biter. For all the authority with which experts testify in court about bite marks, as a forensic discipline, it is little more than junk science.

In 1996, Bowers published this opinion — or as he put it to *The Intercept*, “came out of the closet” — [in an article](#) for the American Society of Forensic Odontology newsletter. In it, he contrasted the scientific certainty of DNA tests with the subjective analysis of forensic odontologists, warning that unlike DNA, which “has been scrutinized and approved through rigorous testing,” the “physical matching of bite marks is a non-science which was developed with little testing and no published error rate.” Bowers further warned about such “expertise” wielded by dueling dentists on the witness stand. “The ‘I can see it, you can’t’ school of expertise ... will spell the doom of this particular aspect of crime investigation,” he wrote.

It wasn’t long after his article was published — and shortly after Richards was convicted — that Bowers got a call from Richards’ newly appointed appellate counsel, who asked him to review the bite mark evidence and testimony from Richards’ trial.

In November 1998, Bowers wrote a detailed report on that evidence. He lambasted Sperber’s conclusion that Richards’ dentition was statistically unique. “There are no statistical frequencies developed for use in forensic dentistry,” he wrote. Such a conclusion was contrary to the ABFO’s own guidelines, he added — guidelines that Bowers himself had helped to write. “The effect of these statements allows anecdotal, and scientifically unsupported numerical values to be linked to the expert’s ultimate qualitative opinion,” he wrote.

Based in part on Bowers’ report, Richards’ appellate attorney sought a new trial. The request was denied.

Almost 17 years later, Bowers remains determined to show that Richards was convicted based on unsupportable junk science. “There is no physical evidence ... that points to Bill Richards being guilty of murder,” he wrote in an email to *The Intercept*.



Dr. C. Michael Bowers in his dental office in Ventura, California.

Photo: Kendrick Brinson for *The Intercept*

Others have taken up the case as well. In 2001 the California Innocence Project took the Richards case, filing a writ of habeas corpus in 2007 and winning an evidentiary hearing. The following year, a San Bernardino district court judge began considering evidence on two key points. The first was new evidence — DNA testing on one of the paving stones used to kill Pamela had excluded Richards and instead revealed the profile of an unknown male, and another unknown profile was extracted from a long hair found under one of Pamela's fingernails.

Second, and perhaps even more important, was that both dentists who claimed a connection between Richards' dentition and the alleged bite mark on Pamela's hand had recanted their testimony. Golden now said the mark was "just as likely" made by a dog. But Sperber went further: The photo of Pamela's hand injury was too distorted to use for the dental comparison, he said. Moreover, he never should have said that Richards' lower dentition was unique to a small percentage of the population.

"Can you tell us why?" defense attorney Mario Conte asked Sperber.

"Well, because it's inappropriate to cite percentages or things resembling percentages unless there has been some prior scientific study which concludes that, yes, this feature is unusual," Sperber responded. At the time that he testified in 1997, he admitted, there was nothing to back up his own assertions.

Upon the conclusion of the hearing, Judge Brian McCarville ruled that Richards' conviction should be vacated. The false testimony given by Sperber and Golden had clearly influenced the outcome of the 1997 trial, he concluded, thus the conviction could not stand. Combined with the DNA results, the evidence before him pointed "unerringly" to Richards' innocence.

To date, 24 people arrested or convicted on bite mark evidence have been exonerated by DNA.

But in 2010, Judge McCarville's ruling was reversed on appeal. The reversal was upheld in 2012 by the California Supreme Court in a tortured opinion derided in *California Lawyer* magazine as the worst of the year. Not only did the high court dismiss the DNA evidence (the criminalist, Gregonis, speculated that the unidentified DNA found on the stone could have been deposited by someone "talking over" the rock during Richards' trial), it also arrived at a baffling conclusion with severe implications for anyone challenging his or her conviction based on discredited evidence. When it came to the testimony of a forensic expert, the Court essentially ruled, such an opinion could never be either true or false.

The court's logic was disturbing. Taken to its extreme, it meant that a DNA analyst who inadvertently mixed up test results could not be considered to be wrong when testifying, incorrectly, that a particular piece of evidence matched a particular defendant. Nor would there be any way to correct such a fundamental miscarriage of justice.

California Western School of Law professor Jan Stiglitz, a founder of the California Innocence Project who argued Richards' case before the state Supreme Court, explained the absurdity: "If the kind of opinion we were talking about was an art historian who was claiming that Picasso's Blue Period was his most prolific period, during which he came up with his most important paintings, then, yes, that's an opinion" — debatable, but neither true nor false. "When you have a scientist who says only one or two in 100 would have this

dentition ... it is an expression of perceived scientific fact,” not an “opinion.” In a courtroom, such a statement is “just as subject to being wrong as a witness who said, ‘I believed the light was green as opposed to red.’”

But that’s not what the court concluded. In justifying its 4-3 ruling, the majority opined that to allow experts to recant their trial opinions would cause the criminal justice system to fall apart — allowing untold numbers of defendants to challenge their convictions. In short, it would be an untenable assault to the finality of justice.

Of course, experts *do* get things wrong — for any number of reasons. And their assertions can have dire consequences. Consider the revelation in the spring of 2015 that 14 individuals were executed or died in prison before the FBI admitted that its own microscopic hair examiners had testified falsely in hundreds of cases going back more than 40 years. While this doesn’t mean all of those individuals were innocent, the FBI’s recent revelations underscore how very shaky the ground is under even those forensic disciplines that for decades were accepted as entirely probative and unassailable.

IN JUNE 2015, Dr. Sperber sat down for an interview at his home in San Diego. An airy condo nestled on a hillside near University of San Diego where Sperber has lived for more than 40 years, the walls are adorned with photos, certificates of recognition, awards, and commendations related to Sperber’s decades of forensic work benefiting law enforcement. “You’re talking to somebody who’s done the best to do his best,” he said. But the retired dentist, now 86, said that although he still believes Richards is guilty, he knows his analysis of the alleged bite mark was wrong. It was the first time in his long career that he’d recanted.

Sperber said he had always been very conservative in his conclusions — though it seems that got away from him in the Richards case. When it came time for Richards’ 1997 trial, “I said, well, gee, they tried this guy three times and I’m going to be the hero in this case and show that it is his mouth,” Sperber told me. “And I made a mistake.” Perhaps it was this desire to be a hero that led him to draw unsupportable conclusions based on a bad photo. “Obviously I wasn’t looking at it right.”

One might think that such admissions, particularly coming from one of the profession’s major figures, would prompt more forensic odontologists to seriously reconsider the role they play in securing criminal convictions. But instead, power brokers within the ABFO have reacted to the growing criticism of their field with extreme defensiveness, lashing out in classic shoot-the-messenger style.

Just ask Mary Bush, a professor of dentistry at the State University of New York at Buffalo, who over the last decade led the first empirical scientific research into bite mark analysis in years. In a series of peer-reviewed papers, Bush and her husband, Peter, concluded not only that human dentition is not unique, but also that the skin is a horrible medium for transferring a reliable pattern. Even when using the same set of teeth to make a series of marks on cadaver skin, they discovered, each mark looked different. “We had the same sets of teeth but there was such a wild difference of the bite marks that no two were the same,” Bush told *The Intercept*.

Certain that practicing odontologists needed to know about their findings, Mary Bush published the results as something of a warning. “Our message in most of the papers is just, exercise caution, you know, to ... give the practitioners information so that future mistakes are not made.” At first, the feedback was positive, she said. But then, her research started being used in court to challenge bite mark evidence. That’s when the tone changed, becoming ugly — and personal. During an ABFO dinner in Seattle held in connection with the 2014 conference of the American Academy of Forensic Sciences, invited speaker Melissa Mourges, a Manhattan prosecutor and strident supporter of bite mark evidence, lit into Bush’s work. She even peppered her speech with petty comments about Bush’s physical appearance. “I was mortified,” Bush recalled.

The effect has been to deter Bush from doing additional research into bite marks. “If my research avenue is going to bring this kind of insult to me,” she says, “why would I want to put myself through that?”



Peter and Mary Bush, research scientists at the State University of New York at Buffalo, hold a dental mold at the school, April 17, 2013.

Photo: AP/David Duprey

No one is more familiar with this dynamic than Bowers, who for years has continued to push, publishing papers, chapters and entire books questioning the discipline, while in the crosshairs of the ABFO.

In 2011, Bowers was sued for defamation by two odontologists after he criticized their work in the case of an Illinois man named Bennie Starks who had been convicted of rape and battery in 1986. The lawsuit was settled for a nominal amount and Starks was ultimately exonerated in 2013. That same year, Bowers’ ABFO-member foes stepped up their game, filing a dubious ethics complaint against him with the American Academy of Forensic Sciences (AAFS), in a transparent attempt to get him kicked out of the organization. In fact, the complaint – which essentially accused Bowers of changing his expert opinion in exchange for remuneration — was cooked up by a clique of odontologists during a dinner party at the home of Dr. Greg Golden — the same dentist who testified for the defense in Richards’ case.

Members of the ABFO pursued Bowers for more than a year, but ultimately, their plot failed. The AAFS board voted to dismiss the charges against him — a decision that infuriated some in the ABFO who see Bowers as a threat to their professional survival. This anger was on surreal display at the most recent AAFS conference, held in Orlando, Florida, in February 2015. Multiple attendees described an ABFO member publicly yelling at AAFS President Victor Weedn over the move. “Don’t you have any balls?” Dr. Richard Souviron demanded several times. “Yes,” Weedn replied. “I’m right in front of you; yes, I have balls.” (In an email to *The Intercept*, Weedn wrote that Souviron later apologized.)

Dr. Peter Loomis, who was president of the ABFO when the complaint against Bowers was filed, has previously declined to discuss the matter. Citing confidentiality, he even declined to confirm that there was a complaint filed at all, [noting to the \*Washington Post\*](#) only that Bowers is “not credible.”

It was at this same conference in Orlando that the ABFO was subjected to yet another blow to the credibility of bite mark evidence. Seeking to respond to the claims that there is no science to support their professional conclusions, ABFO members constructed an elaborate “decision tree” designed to guide their analysis. The first question on that tree is simple: Is this a bite mark? But in Orlando, two members of the odontology community — ABFO member Dr. Adam Freeman and Dr. Iain Pretty, a professor from the University of Manchester — presented results that were indisputably dismal. At this most basic level, even among the most seasoned diplomates, there was virtually no consistency on whether or not a given imprint was a bite mark at all. Out of 100 case studies reviewed by 39 ABFO-certified bite mark analysts, there was unanimous agreement only four times. (Notably, the study didn’t even consider whether the odontologists’ decisions were correct.) “If you can’t train somebody with appropriate experience and qualifications [how to identify a bite mark] then it’s magic,” one odontologist said. “And, you know, that’s not forensic science.”

THE INCREASING DISARRAY within forensic odontology comes on the heels of an important victory gained by Richards’ attorneys in 2014. Because the California Supreme Court’s 2012 decision denying Richards relief also worked against any other defendants convicted on junk science, his lawyers pushed for a change to state law — and were successful. Last year, California became only the second state (Texas is the other) to codify a junk science statute, a piece of legislation known in California as the Bill Richards Bill. The new law specifically allows for appeals based on “repudiated” expert opinions or on evidence “undermined by later scientific research or technological advances.” With its passage, Richards has another chance to appeal his conviction to the state’s Supreme Court, where his case is currently pending.

If the court follows the letter of the law, then Richards should, finally, be granted relief, his lawyers say. But the implications go beyond his case. The Innocence Project is unflinching in its assessment of bite mark evidence and in its quest to eradicate its use in criminal cases. “There is no evidence — zero evidence — that bite mark experts can do any of the things they claim to be able to do,” says Chris Fabricant, director of strategic litigation for the Innocence Project. “So its continued use in criminal courts is outrageous.”

Additionally, a group of 38 scientists, statisticians, lawyers, and dentists have filed an amicus brief with the court in an effort to educate jurists regarding bite marks — and the “emerging

recognition that the field stands on a foundation of very thin scientific support — if any at all.”

In the meantime, the state of California continues to insist that Richards is guilty. But today it argues that the bite mark was never very important to its case. San Bernardino County District Attorney Michael Ramos argued in a brief to the court in April that there is an “abundance” of other evidence against Richards. Yet, aside from assertions that Richards was angry and jealous, that the lack of shoe prints on his property demonstrated his guilt, and that blood drops on his jeans mark him a killer, there really is nothing of substance to back Ramos’ position. DNA evidence recovered from one of the murder weapons and from a hair under Pamela’s fingernail has revealed unknown profiles. Because of a difference in the type of DNA testing performed on each item, at present it is unclear whether the profile extracted from the hair matches that found on the stone. The defense has requested additional testing — including on Pamela’s pants and on several bloody rocks — but the state has objected and the courts have agreed.

As Richards waits for word from the California Supreme Court, he says that regardless of what happens, Pamela’s murder will likely remain unsolved — and winning his freedom can’t fix this. “The pieces don’t fit together because the police didn’t do their job,” he says. “It’s like breaking a code: You have to have that piece to crack the whole thing open — and it’s not there.”

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