HOUSE COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY:

Raising the Bar: Progress and Future Needs in Forensic Science
September 10, 2019
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Thank you Chairwoman Johnson, Ranking Member Lucas, and distinguished members of the Committee, for the opportunity to discuss how we can work collectively to improve forensic science. My name is Vicki Behenna and I became the Executive Director of the Oklahoma Innocence Project (OKIP) in October 2015. OKIP is housed at Oklahoma City University School of Law. OKIP is an organization dedicated to identifying and remedying cases of wrongful convictions in Oklahoma. Our legal clinic brings OCU law students and Oklahoma attorneys together to free people who have been wrongfully convicted. OKIP pursues only cases in which there is credible evidence of factual innocence.

In November 2013, I retired as a federal prosecutor in the Western District of Oklahoma after serving in that capacity for 25 years. During my tenure as a federal prosecutor I was appointed by Attorney General Janet Reno to represent the United States in the case against Timothy McVeigh, the person convicted of detonating a 4,000-pound ANFO bomb in front of the Murrah building in Oklahoma City, killing 168 innocent people. That was in 1995, and was my first real experience in the use of forensic evidence to tie a defendant to criminal activity.

In 2009 I had a personal experience with a close family member wherein forensic evidence that could have been used to exonerate the accused was instead hidden in an attempt to secure his conviction. It was that experience that lead to my retirement as a federal prosecutor, and desire to work with OKIP. Since then I have become familiar with the FBI's February 26, 2016 letter to Oklahoma's Governor on the issues with microscopic hair comparison. OKIP is working with the Oklahoma State Bureau of Investigation to review convictions obtained through exaggerated hair analysis testimony.

The weight forensic evidence plays in modern criminal trials cannot be overstated. It is a powerful tool used to connect an accused person to a crime. In criminal trials, prosecutors use forensic experts to analyze crime scenes, to identify perpetrators of crime, and to corroborate lay witness testimony. Prosecutors and Defense lawyers understand that the testimony of a forensic expert tying a person to a crime is highly persuasive evidence for juries. Evidence such as fingerprints, DNA, hair analysis, bite mark, and blood evidence left behind at a crime scene that a

forensic expert says belongs to a particular defendant is incredibly damning and will likely result in the defendant's conviction if not disproved. Because of the highly persuasive value of this evidence when "bad" forensic "science" is used or when a forensic expert overstates a defendant's connection to the evidence it can likely result in the wrongful conviction of an innocent person.

Prosecutors rely upon forensic experts to guide them through investigations. As lawyers, we rely upon the findings given to us by experts because it is impossible for lawyers to know an expert's discipline – their science – as well as the experts know it. Most forensic experts have gone to school for years, received post-college training, and have years of experience in their specific discipline. Not only do trial lawyers rely upon the advice of experts, but an expert once qualified by the court, is relied upon heavily by juries to understand and decipher the evidence presented at trial.

Juries are an essential part of our criminal justice system. Once empaneled, jurors are told that their role is to "judge the facts." That function includes judging the witness' demeanor and their credibility. When factual conflicts arise between witnesses it is the jury's job to resolve the conflict – to determine which witness or witnesses' observations were most accurate, or who had a better memory of the event, or if a particular witness was bias toward one party or another. During deliberations the jury evaluates the evidence and decide the facts. The Judge instructs the jury on the applicable law. The jurors then apply the law to the facts and render a verdict of "guilty" or "not guilty."

Because of the significance forensic science plays in modern criminal trials, its misuse or exaggeration can have a devastating effect on the life of someone accused of a crime that they did not commit. It is incumbent upon all of us involved in the criminal justice system to: 1) set standards and guidelines for the appropriate application of forensic testing; 2) review the various forensic science disciplines to ensure their accuracy and accurate application; and 3) when deficiencies or inaccuracies are discovered to correct these mistakes, especially when such errors have resulted in a wrongful conviction.

In September 2001, Joyce Gilchrist was fired from the Oklahoma City Police Department after it was revealed that she had egregiously misrepresented forensic conclusions for decades. Ms. Gilchrist was a forensic chemist with OCPD crime laboratory and participated in the forensic evaluation of over 3,000 cases. In January 1987, a police chemist from the Kansas City police crime laboratory filed a complaint against Ms. Gilchrist with the Southwestern Association of Forensic Scientist complaining about Ms. Gilchrist's "scientific opinions" wherein she positively identified defendants based on the slightest bit of evidence. In one case, she "positively" identified a hair as belonging to a particular defendant, without conducting any DNA analysis, a conclusion that is scientifically unsound and

forensically impossible. In August 1999 a federal judge in Oklahoma City labeled Ms. Gilchrist's testimony "untrue" when she testified that semen samples in a rape and murder case were inconclusive, when she knew for a fact that the sperm was not from the defendant. Judge Ralph Thompson found that Ms. Gilchrist intentionally withheld exculpatory evidence. In 2001, the FBI conducted an investigation of Ms. Gilchrist. In their final report the FBI questioned the validity of her work and further recommended that the State of Oklahoma reexamine her cases. In the end, state and federal officials reviewed more than 1,200 felony cases that Ms. Gilchrist was involved in – 165 cases were deserving of further review.

Most forensic experts are not blatantly biased like Ms. Gilchrist. While she left an indelible mark in Oklahoma, it is important to emphasize that most forensic experts understand that they are independent forensic scientists whose job it is to analyze and evaluate the evidence using sound scientific principles and guidelines. But in the rare instance when a scientist feels that their loyalty is to the police department or the prosecutor's office or when a scientist has not implemented the best scientific practices, a case can go incredibly off track simply because of the expert's credentials.

Likewise, when "bad" forensic science is used it is devastating for an accused person. Scientific disciplines that we once thought scientifically sound – such as hair analysis, bite mark, shaken baby, and the origination source for arson investigations – have since been debunked. Yet prosecutors continue to use and judges continue to admit this type of forensic evidence without being properly educated on the proper scope and validity of these disciplines – thereby hampering a judge's gatekeeping function.

The Federal Rules of Evidence, and all state evidence codes, provide guidance for judges regarding the admission and use of expert testimony. Courts allow testimony, in the form of an opinion, by a witness who qualifies "as an expert by knowledge, skill, experience, training, or education . . ." if the expert's scientific, technical, or other specialized knowledge will *help the trier of fact to understand the evidence or to determine a fact in issue. . . "* Fed. R. Evid. 702. An expert is given "wide latitude to offer opinions, including those that are not base upon first-hand knowledge or observation,"[1] because it is presumed "that the expert's opinion will have a reliable basis in the knowledge and experience of his discipline." *Daubert v. Merrell Dow Pharmaceuticals*, 509 U.S. 579, (1993). A trial court, in evaluating whether to admit expert testimony will evaluate the proffered testimony using the factors enumerated in Rule 702. If the court is satisfied that the witness is an expert in the area for which the expert has been proffered, and the court evaluates the

[1] Rule 601 of the Fed R. of Evid. allow a witness to testify about "a matter only if . . . the witness has personal knowledge of the matter." This rule does not apply to experts testifying under Rule 703 of the Fed. R. Evid.

"theory or technique" and determines that the testimony is reliable under the *Daubert* factors of Rule 702, the witness will be recognized by the court and the jury as an expert. This "recognition" underscores the problem in our criminal justice system in that juries tend to view forensic evidence as more reliable, and more credible than they view a lay witness because juries believe a forensic expert is more objective and their opinion is scientifically sound.

The National Registry of Exonerations has identified a total of 2,486 exonerations in the United States since 1989. Of those exonerations - 570 or 22.9% were the result of false or misleading forensic evidence.[2] In an analysis of 367 post-conviction DNA exonerations, it was determined that 162 or 44.1% of the convictions were obtained from the misapplication of forensic science. Misapplication is defined as "the use of an unreliable or invalid discipline, insufficiently validated method, misleading testimony, mistakes, and misconduct."[3] Of the 162 cases in which the misapplication of forensic science was a contributing factor in the wrongful conviction, the following forensic disciplines were involved:

Forensic Discipline	Total Number of Cases
DNA	9
Serology	89
Bite Marks	7
Fingerprints	3
Hair Comparison	75
Other	17

The following recommendations, which are supported by other stakeholders, including the Innocence Project, can prevent abuse and improve forensic science disciplines: 1) ensure that the National Institute of Standard and Technology (NIST), a preeminent independent science agency, conduct scientific evaluations of the validity of the forensic science disciplines; 2) increase funding for research at science-based agencies and institutions, in accordance with a well-developed strategic plan, to establish or strengthen the fundamental science underlying forensic science disciplines; 3) develop rigorous national standards, recommendations for documentation of forensic sciences, and guidelines for reports and testimony for those forensic science disciplines that have been shown to be based on robust and reliable

[2] Innocence Project, *Overturning Wrongful Convictions Involving Misapplied Forensics,* Innocence Project, https://www.innocenceproject.org/overturning-wrongful-convictions-involving-flawed-forensics/ (last visited Sep 6, 2019).

[3] We know that these problems occurred because DNA testing demonstrated the wrongfully convicted person's innocence

science; and 4) support judicial training and other efforts to ensure that future decisions in admissibility consider the validity of a forensic test in general, and the validity of the test as applied in the specific case at hand.

Our criminal justice system is designed to seek the truth. It is designed to equally protect victims and the accused. Because of the highly persuasive impact forensic science and a forensic expert can have on the scales of justice, it is imperative that the expert and the science is sound. The above referenced reforms will ensure that the science is validated, that forensic experts are supported with the scientific resources they need, and that judges are educated so they can properly preform their gatekeeping function.