

F29 Examining the Foundational Validity of Firearm and Toolmark Identification and the Continued Admission of Flawed “Science” in Court: A Call for Increased Scrutiny

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Learning Overview: This presentation will offer attendees a defense perspective on the virtually unquestioned admission in courts of firearm and toolmark identification—a subjective pattern-matching discipline that lacks an adequate empirical basis. After attending this presentation, attendees will understand the faulty assumptions that underpin the firearm and toolmark identification field, the danger of wrongful convictions presented by the admission of this flawed evidence in courts, and the reasoning of recent federal and state court decisions limiting the admissibility of testimony regarding firearms identification at trial.

Impact on the Forensic Science Community: This presentation will impact the forensic science community in an effort to promote greater scrutiny of the discipline. The goal of this presentation is to shift thinking about the firearm and toolmark identification field, not only within the defense community, but among prosecutors and law enforcement as well. A willingness by all parties in the criminal justice system to closely examine firearms identification will lead to the scientific research necessary to adequately demonstrate the foundational validity of the field and thereby prevent wrongful convictions stemming from the admission of this evidence.

Hypothesis: For decades, the prosecution has presented the testimony of firearms identification experts as “scientific” proof that the bullets or shell casings recovered from a crime scene were fired from a particular gun to the exclusion of all other guns. With unqualified certainty, experts have explained that the bullets found at the crime scene must have come from the defendant’s gun or that bullets found at different crimes were fired from the same weapon, implicating the same shooter.

Three recent Reports issued in 2008, 2009, and 2016, two by the research arm of the National Academy of Science, and one by the President’s Council of Advisors on Science and Technology (PCAST), reject the claim that firearms and toolmark examination is a valid and reliable science.¹⁻³ The most recent 2016 Report, following a review of more than 2,000 articles and presentations by members of the forensic community, states unequivocally: firearms examination “falls short of the scientific criteria for foundational validity.”⁴ These three interdisciplinary Reports authored by three separate committees of nationally recognized scientists and professionals find that the “fundamental assumptions” underlying firearms examination have not been demonstrated; that the theory is “not a scientific theory;” that the method is “subjective;” and that there is “insufficient empirical evidence” establishing validity and estimating reliability. Despite these flaws, judges routinely admit firearms identification evidence, while prosecutors vigorously fight for its protection and expanded use in courts.

After the first hearing of its kind in New York State, the Bronx County Supreme Court refused to admit testimony from a firearms examiner that bullets found at the scene of a shooting came from a particular firearm.⁵ Troubled by the lack of empirical data, standards, and established error-rates in the field, the Court ruled that firearm and toolmark identification was not generally accepted in the relevant scientific community. This decision, along with other recent federal court decisions, call into question the long-standing acceptance of firearms identification evidence in courts.^{6,7} This presentation will discuss the slow progress the defense bar has made in chipping away at the unquestioned acceptance of this evidence in court, while examining the flawed methodology upon which the firearms identification field is based.

Reference(s):

1. National Research Council, Committee to Assess the Feasibility, Accuracy, and Technical Capability of a National Ballistics Database, *Ballistics Imaging iii* (2008).
2. National Research Council, *Committee on Identifying the Needs of the Forensic Science Community, Strengthening Forensic Science in the United States: A Path Forward*, (2009).
3. President’s Council of Advisors on Science and Technology, *Forensic Science in Criminal Courts: Ensuring Validity of Feature-Comparison Methods*, (Sept. 20, 2016).
4. PCAST Report, p. 11
5. *People v. A.M.*, 68 Misc.3d 899 (Sup. Ct. Bronx Co. 2020).
6. *United States v. Shipp*, 422 F.Supp.3d 762 (E.D.N.Y. 2020).
7. *United States v. Tibbs*, No. 2016-CF1-1943, 2019 WL 4359486 (D.C. Super. Sep. 5 2019).

Toolmarks, Firearms, Identification