

On June 20, 2023, the Maryland Supreme Court published its decision in the case of Kobina Abruquah.

On June 23, 2023, the Association of Firearm and Tool Mark Examiners (AFTE) Board of Directors released an official comment. This is a follow-up statement based on our review of the published decision.

For reasons previously stated and information provided below, we disagree with the majority's opinion in this case. We respectfully note the Court has overlooked foundational aspects of the firearm and toolmark examination, has minimized the role of the jurors (see Gould's Dissenting Opinion at page 50), and has provided vague guidance on what it considers "unqualified testimony." Finally, we are highly concerned that interpretation of the Court's ruling will lead to forensic scientists being limited to "consistent with".

The ruling states that firearms identification, as presented in this case, "demonstrate that the firearms identification methodology employed in this case can support reliable conclusions that patterns and markings on bullets are consistent or inconsistent with those on bullets fired from a particular firearm." (emphasis added) However, the Court also ruled "Those reports, studies, and testimony do not, however, demonstrate that that methodology can reliably support an unqualified conclusion that such bullets were fired from a particular firearm." We interpret this decision to mean that firearm and toolmark examiners' opinions, while admissible, should be "qualified" with language that limits (i.e. "qualifies") conclusions to "consistent with" or "inconsistent with" having been fired in a particular firearm.

In the Appendix of this response, we highlight specific disagreements with the Court's analysis. We limit analysis to firearm and toolmark examination, and (attempt to) stay away from legal arguments. We also do not attempt to offer a comprehensive review of all important literature and studies conducted in the discipline. We note the Court's ruling was not unanimous: 4 in the majority and 3 dissented. We found the dissenting opinion by Justice Gould, including his analysis of the error rate studies germane, appropriate, and persuasive.

In the United States, it has long been common practice for a forensic examiner to provide an opinion that two fired ammunition components (i.e. fired bullets, cartridge cases) share a common source (Identification), or difference sources (exclusion), or the markings on the item do not provide persuasive support of either same source or different source (inconclusive). We are concerned the Court's use of "consistent with" in their ruling will direct lower courts to instruct examiners' to qualify (i.e. limit) their testimony to two items being "consistent with having been fired in the same firearm." This language is vague and lacks specificity; therefore, the ruling potentially places forensic science on an uncertain path for several reasons. First, "consistent with" is vague and could have multiple interpretations as to the weight of the expert's opinion.

To address this point, consider a hypothetical: a firearm and toolmark examiner observes two bullets sharing the same class characteristics, but upon further examination of individual

characteristics observes neither sufficient agreement for an Identification nor sufficient disagreement for elimination (In our experience, this is a very reasonable hypothetical, as Inconclusive conclusions are common in casework and are appropriately used to mitigate meaningful forensic error.). Using the AFTE Range of Conclusions, this would be appropriately categorized as "Inconclusive" (a neutral statement); however, if examiners were to follow this Court's guidance of "consistent with" testimony, it would be correct to state that two items having the same class characteristics is "consistent with" having been fired in the same firearm. Thus, an examiner's original neutral testimony may be incorrectly interpreted as one that is affirmative, because there is no distinction between consistent class characteristics and consistent individual characteristics.

Courts are placed in a complicated situation when there is a need to evaluate a science at a discrete level, as illustrated above. A large portion of this Court's survey of provided testimony focused on the potential influence of subclass and its impact on casework examinations. The record may have been incomplete or deficient in illustrating there are finite methods that produce subclass characteristics, and studies cited in the majority opinion actually demonstrate subclass does not adversely impact an examiner's ability to reach a correct decision. Perhaps, in an attempt to mitigate the influence of subclass on an examiner's decision, it is possible the Court entertained unsound assumptions such as a "cannot be excluded" logic. This assumption (solely class dependent), to all appearances seems to be a conservative response to protect the liberty of a defendant, but actually has the opposite consequence. For example, in a law enforcement shooting involving three officers using the same make, model, and caliber of firearm, an examiner may provide an opinion on which specific firearm was discharged. However, based on the "cannot be excluded" logic, all the officers are harmed since the other two cannot be excluded because they all used the same make of firearms.

Second, the Court's ruling creates a potential scenario where examiners' written reports, supported by current forensic practice and guidance, would need to be re-interpreted or re-phrased for courtroom testimony. An "identification" in a forensic laboratory's written report provides a clear opinion of common origin. An opinion of "consistent with" is far less specific and could leave consumers of the report (including the defendant) unclear of the expert's opinion. In other words: what *exactly* is the analysis consistent with and inconsistent with. An "identification" makes the opinion clear. "Consistent with" is frustratingly opaque. Additionally, because of the vagueness of this decision, the potential for abuse has been introduced. Without definitions or standards of what a qualification is or how it would be included, this decision has potentially unseen ramifications for how practitioners classify and testify to their results in firearm and toolmark identification as well as other forensic disciplines. It also provides no guidance on where inconclusive decisions fall on their newly envisioned consistency scale. Should they be declared "semi-consistent" or "partially inconsistent"? To quote Justice Gould, "[t]he Majority's opinion leaves trial courts rudderless at sea in evaluating this type of evidence henceforth."

Finally, we note the Court took notice of, and cited some examiner error rate studies in their analysis. The "Ames I" and "Ames II" studies in the Court's opinion used the AFTE Range of

Conclusions (i.e. ID, Inc, Elim). If examiners were forced to use “consistent with” conclusion language in order to ‘qualify’ their testimony, the examiners would be using an *untested* conclusion scale with an *unknown error* rate, as we are unaware of an error rate study that tests firearm and toolmark examiners using “consistent with” and “inconsistent with” type language. As discussed in the hypothetical above, “consistent with” may have more (false) inclusions than the current AFTE Range of Conclusions. Furthermore, the court directs a forensic discipline to use conclusions with an unknown/untested error rate. We find this troubling since a known or potential error rate is typically used as admissibility criteria of expert testimony.

By requiring an undefined qualification requirement for testimony, the Court has placed themselves in the position of evaluating the science and the scientist’s opinion. In her dissenting opinion, Justice Hotten states “The majority’s holding blurs the role of the trial judge, allowing judges to ‘exclude... legitimate opinions of experts[] that[] are for a jury to weigh credibility.’ The majority appears to conflate the role of the trial judge as gatekeepers, with the evaluation of the science or the expert opinion that is presented for consideration of its admissibility. That is not what Rochkind required.” (Hotten, Dissenting Opinion at page 14, citation omitted) Justice Gould similarly states “The Majority, ‘misunderstand[ing] Daubert to demand unassailable expert testimony,’ misses the forest for the trees. The trial court’s task is not to ensure that an expert’s conclusion is ‘correct,’ but only ‘that the expert’s conclusion has been arrived at in a scientifically sound and methodologically reliable fashion.’” (Gould Dissenting Opinion at page 49, citation omitted). We agree with this sentiment and believe the majority has created the potential for confusion in the lower courts, miscalculated their role as a gatekeeper, and usurped the jury’s ability to weigh the credibility of the evidence.

In conclusion, AFTE promotes and supports continual research and advancement of the science of firearm and toolmark identification, scientifically supported conclusions, and transparency in reporting. We also take a step back and make note that we do not envy courts and the difficult job before them. We recognize that courts have to rule on numerous issues, many of them highly technical in nature, to include the type of testimony presented in *Abruquah v State of Maryland*. While the *Abruquah* ruling does not cause AFTE to doubt the foundations and soundness of the forensic discipline of firearm and toolmark examination, we do believe it was based on misunderstandings of the field and misrepresented data. Furthermore, the ruling lacks specificity and steers forensic science toward conclusions it has typically tried to avoid: conclusions that are vague and lack specificity. This ruling has the potential to unravel decades of forensic science research performed as it does not accurately reflect the state of the science, nor does it improve transparency and therefore we must join the minority in disagreement with the ruling. As it has done for over 50 years, AFTE will continue to support the continued improvement of firearm and toolmark examination through scientific research, continuing education, and forensic ethics.

For a more detailed analysis, please see Appendix A.