SUPREME COURT, STATE OF COLORADO 2 East 14th Ave., Denver, CO 80203	DATE FILED May 26, 2026 9:18 PM FILING ID: F91243505922C CASE NUMBER: 2025SC467
Colorado Court of Appeals Case Number 22CA224; Division V; Opinion by Judge Freyre City and County of Denver District Court; Honorable Kandace C. Gerdes, Judge; Case Number 19CR8902	
RAMON RODRIGUEZ-ORTIZ, Petitioner, v. **THE PEOPLE OF THE STATE OF COLORADO**, Respondent.	**▲COURT USE ONLY▲**
Attorneys for Amici Curiae Innocence Project, Inc. and the Korey Wise Innocence Project: David H. Herrington (#26PHV8920) Cleary Gottlieb Steen & Hamilton LLP One Liberty Plaza New York, NY 10006 Telephone: (212) 225-2000 Email: dherrington@cgsh.com Jordan Hahn (#26PHV8921) Brooke Purinton (#26PHV8919) Sarah Friedman (#26PHV8922) Ami Ishikawa (#26PHV8918) Cleary Gottlieb Steen & Hamilton LLP 2112 Pennsylvania Avenue Washington, D.C. 20037 Telephone: (202) 974-1500 Email: jhahn@cgsh.com bpurinton@cgsh.com sfriedman@cgsh.com aishikawa@cgsh.com	Case No. 2025SC467

Attorney for Amicus Curiae Innocence Project, Inc.:
V. Marika Meis (#26PHV8913)
Innocence Project
40 Worth St., Suite 701
New York, NY 10013
Phone: (212) 405-6008
E-mail: mmeis@innocenceproject.org

Attorney for Amicus Curiae the Korey Wise Innocence Project:
Jud Lohnes (#33208)
Korey Wise Innocence Project
University of Colorado Law School
Wolf Law Building, 401 UCB
Boulder, Colorado 80309
Phone: (303) 492-8489
E-mail: jud.lohnes@colorado.edu

Attorneys for Amicus Curiae the American Civil Liberties Union of Colorado:
Timothy R. Macdonald (#29180)
Emma Mclean-Riggs (#51307)
American Civil Liberties Union of Colorado
303 E 17th Ave, Suite 350
Denver, CO 80203
Phone: (720) 402-3114
Email: tmacdonald @aclu-co.org
emcleanriggs@aclu-co.org

BRIEF OF AMICI CURIAE INNOCENCE PROJECT, INC., KOREY WISE INNOCENCE PROJECT, AND THE AMERICAN CIVIL LIBERTIES UNION OF COLORADO IN SUPPORT OF PETITIONER RODRIGUEZ-ORTIZ

CERTIFICATE OF COMPLIANCE

The undersigned certifies that this amicus brief complies with C.A.R. 28, 29, and 32, including all formatting requirements set forth in these rules. The undersigned certifies that the amicus brief complies with the applicable word limits set forth in C.A.R. 28(g) and 29(d). It contains 4,605 words.

The amicus brief complies with the content and form requirements set forth in C.A.R. 29(c) and 32.

This amicus brief need not comply with the standard of review requirement set forth in C.A.R. 28(a)(7)(A). *See* C.A.R. 29(c)(3).

The undersigned acknowledges that the brief may be stricken if it fails to comply with any of the requirements of C.A.R. 28, 29, and 32.

TABLE OF CONTENTS

TABLE OF AUTHORITIES

Page(s)

Cases

Other Authorities Cited

IDENTITY AND INTEREST OF AMICI CURIAE

Innocence Project, Inc. and Korey Wise Innocence Project ["IP Amici"] are nonprofit organizations dedicated to exonerating wrongfully convicted individuals and reforming the legal and forensic science systems that contribute to wrongful convictions. IP Amici have a direct institutional interest in the reliability of forensic evidence admitted in Colorado courts, as nearly 52% of individuals exonerated by post-conviction DNA testing were convicted based in part on flawed expert forensic evidence. *See Misapplication of Forensic Science*, Innocence Project, https://innocenceproject.org/misapplication-of-forensic-science (last visited May 24, 2026). IP Amici submit this brief to address the scientific and legal deficiencies of firearm toolmark identification under *People v. Shreck*, 22 P.3d 68 (Colo. 2001), as applied to the opinion offered in this case.

The American Civil Liberties Union (ACLU) is a nationwide, nonprofit, nonpartisan organization dedicated to the principles of liberty and equality embodied in the federal and state constitutions. The ACLU of Colorado is one of the ACLU's state affiliates. The ACLU is dedicated to the constitutional principles of liberty and equality, including the right to fundamental fairness in the criminal legal system. The ACLU of Colorado respectfully submits this brief to protect the integrity of criminal trials in this state.

SUMMARY OF THE ARGUMENT

The certified question is whether firearm toolmark ("FATM") analysis is admissible under CRE 702 and *People v. Shreck*. The answer is no, especially not without limitations that conform to the state of the field. The FATM "individualization" testimony here—in which the prosecution's expert told the jury he "identified" ammunition components found at the crime scenes as having been fired from a specific gun—is unreliable and unfairly prejudicial.[1] The method is premised on two unproven assumptions: that each firearm leaves unique, reproducible markings on ammunition each time it is fired, and that examiners can accurately determine precisely which firearm produced those markings. Four independent scientific reports and a growing body of peer-reviewed research have concluded that neither assumption has been empirically validated. The exclusion of all other potential sources has been categorically rejected by the scientific community. Courts around the country have therefore precluded individualization testimony. The only possible testimony consistent with the science is limiting examiners to testifying about class characteristics (make, model, and caliber) and

[1] FATM individualization is also referred to as "matching," "identification," or "unqualified source attribution" throughout this brief and carries the same definition of an exact match to the exclusion of all other guns, as was the testimony here.

opining that a particular gun "cannot be excluded" as having fired ammunition components.

The trial court failed at its gatekeeping function by ignoring the categorical rejection of individualization testimony by the scientific community and courts around the country, canceling the *Shreck* hearing, and instead relying on two prior Colorado district court orders that predate the most significant scientific critiques of FATM and the recent wave of judicial decisions restricting such testimony. *Shreck* demands barring individualization testimony: cross-examination cannot undermine an expert whose testimony is presented as scientific fact, and jurors are ill-equipped to question conclusions from a court-approved, government-employed forensic scientist.

This Court should reverse and remand, directing exclusion of the unqualified individualization opinion presented at trial here in favor of a full *Shreck* hearing at which the current state of the science can be properly examined, specific reliability findings can be made on a developed record, and appropriate limitations on testimony can be imposed.

ARGUMENT

Mr. Ramon Rodriguez-Ortiz was sentenced to 102 years in prison based on scientifically unreliable expert testimony that his gun was the *only* one that could

have fired two bullet fragments found at two crime scenes. The prosecution's expert used the Association of Firearm and Toolmark Examiners (AFTE)[2] method, a purportedly scientific way of "matching" fired bullet components to a particular firearm.

Recent scientific literature resoundingly rejects the scientific validity of FATM identification. From 2008 to 2017, four reports by three committees of nationally recognized independent scientists detailed uniform, devastating conclusions that the scientific validity of FATM identification has not been established. *See* Nat'l Research Council, *Ballistics Imaging* 3 (The Nat'l Acads. Press 2008) [hereinafter NRC Report]; Committee on Identifying the Needs of the Forensic Sci. Cmty., Nat'l Research Council, *Strengthening Forensic Science in the United States: A Path Forward* 154 (Nat'l Acads. Press 2009) [hereinafter NAS Report]; President's Council of Advisors on Sci. & Tech., *Forensic Science in Criminal Courts: Ensuring the Validity of Feature-Comparison Methods* 47, 60, 104, 111, 113 (2016) [hereinafter PCAST Report]; President's Council of Advisors on Sci. & Tech., *An Addendum to the PCAST Report on Forensic Science in the Criminal Courts* 2 (2017) [hereinafter PCAST Addendum].

[2] *See* Br. of Amici Curiae Innocence Project, Inc., Korey Wise Innocence Project, and the American Civil Liberties Union of Colorado in Supp. of Pet. at 2 n.2, *People v. Alvarado-Vasquez*, No. 2023CA1491 for an explanation of AFTE.

These critical findings continue, and the two studies relied on by AFTE as establishing scientific validity—Ames I and Ames II[3]—have been increasingly discredited. *See, e.g.*, Maria Cuellar et al., *Methodological Problems in Every Black-Box Study of Forensic Firearm Comparisons*, L. Probability & Risk 1, 9–12 (2024) (existing validation studies are "incapable of establishing scientific validity") [hereinafter *Problems in Every Firearm Study*]; David L. Faigman, Nicholas Scurich & Thomas D. Albright, *The Field of Firearms Forensics is Flawed*, Sci. Am. (May 25, 2022), https://www.scientificamerican.com/article/the-field-of-firearms-forensics-is-flawed (last visited May 24, 2026) ("[E]xaminers cannot reliably determine whether bullets or cartridges were fired by a particular gun.").

Courts must exercise their gatekeeping function to preclude or limit unreliable and overstated forensic science testimony that carries a risk of wrongful conviction. Numerous supposedly expert forensic science techniques once widely accepted—including microscopic hair comparisons, fire origin analysis, and bitemark matching—were admitted for decades before scientific scrutiny revealed their

[3] David P. Baldwin et al., *A Study of False-Positive and False-Negative Error Rates in Cartridge Case Comparisons* (Ames Lab'y, U.S. Dep't of Energy, Tech. Rep. No. IS-5207, Apr. 7, 2014), https://www.ojp.gov/pdffiles1/nij/249874.pdf [hereinafter Ames I]; Keith L. Monson, Erich D. Smith & Eugene M. Peters, *Repeatability and Reproducibility of Comparison Decisions by Firearms Examiners*, 68 J. Forensic Sci. 1721 (2023), https://doi.org/10.1111/1556-4029.15318 [hereinafter Ames II].

unreliability, contributing to wrongful convictions later overturned. *See Misapplication of Forensic Science*, Innocence Project, https://innocenceproject.org/misapplication-of-forensic-science (last visited May 24, 2026).

The risk that unreliable FATM individualization testimony will similarly produce wrongful convictions is not hypothetical. Darrell Siggers served thirty-four years for murder before a firearms expert demonstrated that the FATM identification testimony against him was "wholly inaccurate." *Siggers v. Alex*, No. 22-1182, 2023 WL 5986603, at *2 (6th Cir. Sep. 12, 2023). Patrick Pursley spent more than two decades imprisoned after examiners misidentified a firearm as the source of cartridge cases recovered at a murder scene. *See* Patrick Pursley, Nat'l Registry of Exonerations (Feb. 17, 2024), https://exonerationregistry.org/cases/12582. Anthony Ray Hinton spent nearly thirty years on death row based largely on faulty FATM identification evidence matching a gun taken from his mother's home to two murders; three experts later concluded that the gun could *not* be matched to the suspect weapon, and the Supreme Court vacated his conviction. *See Hinton v. Alabama*, 571 U.S. 263, 276 (2014). These miscarriages of justice are the direct result of juries relying on subjective FATM opinions presented as scientific evidence, just as occurred in this case.

I. The *Shreck-Eicher* Factors Weigh Decisively Against Admissibility of FATM Evidence.

Under *People v. Shreck*, CRE 702 and 403 govern the admissibility of expert scientific testimony. 22 P.3d 68, 78 (Colo. 2001). The inquiry "should be broad in nature and consider the totality of the circumstances of each specific case." *Id.* at 70. To admit expert scientific testimony, courts must make specific findings on: (1) the reliability of the scientific principles, (2) the expert's qualifications, (3) the usefulness of the testimony to the jury, and (4) whether probative value is substantially outweighed by unfair prejudice under CRE 403. *Id.* at 77–79. Under *Estate of Ford v. Eicher*, reliability factors include whether the technique has been tested, peer-reviewed, and published; the existence of controlling standards; general acceptance in the relevant scientific community; its relationship to more established modes of analysis; non-judicial uses; and the frequency and type of error generated. 250 P.3d 262, 267–68 (Colo. 2011). While no single factor is decisive, courts cannot selectively jettison those weighing against admissibility, as was done here. *See People v. Jefferson*, 2017 CO 35, ¶¶ 40–41. The *Shreck-Eicher* standard requires courts to determine whether the testimony is reasonably reliable, and the *Shreck-*

Eicher factors that include the *Daubert*[4] factors are key to assessing the validity of a forensic science technique.

Expert opinion "connected to existing data only by a bare assertion resting on the authority of the expert" must be excluded. *People v. Ramirez*, 155 P.3d 371, 379 (Colo. 2007). The trial court erred by allowing a Denver Police Department Crime Lab forensic scientist to identify, based on his mere subjective opinion, the gun that fired two bullets collected from the crime scenes and to claim that three casings were fired from the same gun. This admission of opinion evidence resting only on the "*ipse dixit* of the expert"—or a trade association of experts—does not withstand scrutiny under a proper assessment of reliability. *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997). As shown below, each *Shreck-Eicher* reliability factor weighs against admissibility.

A. The Foundational Premises of FATM Matching Remain Scientifically Unvalidated, the Method's True Error Rate is Unknown, and Supporting Studies Have Not Been Subjected to Peer-Reviewed Publication.

In FATM identification, examiners compare microscopic markings on ammunition components. The FATM theory holds that "the surfaces of a fabricated item, such as a firing pin or a barrel, will . . . have [unique] tiny imperfections and

[4] *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, 593–94 (1993).

irregularities at the microscopic level even when manufactured to rigorous specifications . . . [that] are transferred to different parts of the ammunition." *See What is Firearm and Tool Mark Identification?*, AFTE, https://afte.org/about-afte/what-is-firearm-and-tool-mark-identification (last visited May 24, 2026). But even if markings from a particular firearm were truly unique, the reliability of individualization depends on proving that examiners can reliably identify those unique markings and ascertain, using only their eyes and a microscope, that two items precisely match. Neither proposition has been empirically established.

Scientific validity requires empirical testing establishing accuracy (correct results), repeatability (same examiner reaching the same conclusion at different times), and reproducibility (different examiners reaching the same conclusion). *See* PCAST Report at 47. A scientifically valid method also requires "a reproducible and consistent procedure" for identifying features, comparing them, and determining a match. *See id.* at 47–48.

FATM matching has been tested, and that testing demonstrates unreliability. The courts below found that FATM has been meaningfully tested with low error rates. *See People v. Rodriguez-Ortiz*, 2025 COA 61, ¶ 63. This is false. The existing

black-box[5] studies that claim to calculate a low error rate for FATM analysis are flawed. *See Problems in Every Firearm Study* at 1. These studies share fatal deficiencies including systematically excluding (or even counting as correct) inconclusive responses from the error-rate calculation, thereby artificially deflating reported error rates. *See* Wilson Center Amicus at 15–16. When sounder methodologies are applied, the damning error rates are as high as fifty percent. *See Problems in Every Firearm Study* at 12.

Nor have the existing studies been subject to peer-reviewed publication.[6] Most FATM studies appear in the AFTE Journal, a trade publication whose review process evaluates articles solely for "grammatical and technical correctness." *Peer Review Process – January 2020*, AFTE, https://afte.org/afte-journal/peer-review-process (last visited May 24, 2026). The AFTE process "appears designed primarily

---

[5] *See* Amicus Br. in Supp. of Pet'r Ramon Rodriguez-Ortiz at 11, *Rodriguez-Ortiz v. People*, No. 2025SC467 (Colo. 2026) [hereinafter Wilson Center Amicus] for the definition of a black-box study.

[6] "Verification" of a particular match by a second examiner does not constitute peer review. Here, the testifying examiner admitted that a second examiner received his report *before* conducting his review, TR-10/29/2021(p.m.), pp.109:9–110:9—an unblinded "verification" that invites cognitive bias and is not peer review. *See* Mattijssen et al., *Cognitive Biases in Peer Review of Bullet and Cartridge Case Comparison Casework*, 60 Sci. & Just. 337 (2020). Peer reviewed refers to whether an expert's scientific theory or technique has been subjected to scrutiny by other experts, typically through publication in reputable, professionally reviewed scientific journals. *See Daubert*, 509 U.S. 759 at 593–94.

to review articles and studies to determine their adherence to the AFTE Theory, not to test the methodology." *Abruquah v. State*, 296 A.3d 961, 988 (Md. 2023).

At best, the error rate of FATM analysis is unknown. In that case, any match is "unaccompanied by its statistical significance," and therefore "essentially meaningless." *People v. Wilkerson*, 114 P.3d 874, 877 (Colo. 2005) (quoting *Fishback v. People,* 851 P.2d 884, 893 n.18 (Colo. 1993)); *see also United States v. Tibbs*, No. 2016 CF1 19431, 2019 D.C. Super. LEXIS 9, at *36 (D.C. Super. Ct. Sep. 5, 2019); PCAST Report at 53 (without accuracy and error rates, an opinion that two items are similar—much less identical, as testified to here—"has no probative value"). At worst, the error rate is as high as fifty percent—"as unreliable as flipping a fair coin." *Problems in Every Firearm Study* at 12. Neither option can supply "a scientific basis" for FATM identification.

B. FATM Matching Lacks Objective Standards and Cannot be Independently Reviewed.

The unreliable empirical foundation of FATM is in part the result of the absence of objective, reproducible standards governing how examiners reach conclusions and the absence of any mechanism for independent review.

A scientific method must be defined by uniform, systematic criteria objectively guiding the expert's analysis. The length, depth, width, etc. of toolmarks *can* be measured, but the AFTE Theory instructs examiners to declare a match

without using objective criteria, and instead, when toolmarks exhibit "sufficient agreement"—a threshold subjective to each examiner (regardless of skill or experience), as the testifying examiner here acknowledged, and lacking any meaningful definition or even the available quantification. *See* TR-10/29/2021(p.m.), pp.69:12–13, 70:22–71:9. "Sufficient agreement" requires assessing whether there is a "practical impossibility" that two sets of toolmarks have different origins. As both courts and scientists have noted, this standard is "circular," "tautological," "wholly subjective," and "not scientific." *See, e.g.*, *United States v. Shipp*, 422 F. Supp. 3d 762, 779 (E.D.N.Y. 2019); *Tibbs*, 2019 D.C. Super. LEXIS 9, at *68–69; NAS Report at 153–54.

Because identification comprises only an examiner's idiosyncratic opinion—"unconstrained subjectivity masquerading as objectivity"—it cannot be explained in objective terms, independently replicated, or meaningfully cross-examined. *Tibbs*, 2019 D.C. Super. LEXIS 9, at *69; *see also State v. Adams*, 572 P.3d 291, 296 (Or. Ct. App 2025), *review allowed*, 579 P.3d 223 (Or. 2025); *Shipp*, 422 F. Supp. 3d at 779–80. Examiners cannot even reliably repeat their own analyses, much less others'. *See* Ames II at Abstract, Table 6, Table 8 (even seasoned examiners disagree with each other up to two-thirds of the time; individual examiners disagree with their *own* prior conclusions approximately one third of the time).

C. The Broader Scientific Community Has Rejected FATM Individualization.

The relevant scientific community for the general acceptance inquiry must include scientists with expertise in methodology, statistics, and experimental design—not merely practitioners whose "professional standing and livelihood . . . depends on the validity of AFTE theory." *People v. Ross*, 68 Misc. 3d 899, 913 (Sup. Ct. Bronx Cnty. 2020). The examiner here claimed that FATM source-attribution is generally accepted in the "scientific community," which he defined as like-minded forensic scientists, while dismissing scientists outside the field as charlatans. TR-10/29/2021(p.m.), pp.19:11–13, 95:2–96:18. Following the examiner's lead, the Court of Appeals improperly limited its inquiry to FATM's acceptance by AFTE members. *See Rodriguez-Ortiz*, ¶ 64. This is the wrong reference group. The broader scientific community—comprising neutral observers committed to the scientific method—is unambiguous: FATM matching under the AFTE Theory analysis lacks the scientific foundation for valid source-attribution conclusions. *See* NRC Report at 81–85; PCAST Report at 11–12; *Problems in Every Firearm Study* at 12–14.

FATM matching bears no relationship to "more established modes of scientific analysis," *Shreck*, 22 P.3d at 77; rather, it reflects the systemic problem with "pattern-matching" forensic disciplines that courts and scientists have

increasingly recognized. PCAST Report at 9 (bitemark evidence, which has contributed to at least 30 known wrongful convictions and indictments, has been all but discredited because "bitemark analysis is far from meeting the scientific standards for foundational validity").

Moreover, unlike DNA analysis or toxicology—routinely employed outside the courtroom—FATM is used almost exclusively for litigation. No independent scientific body relies on it, and no mechanism exists by which real-world application outside law enforcement produces accountability for erroneous results. *See* NAS Report at 52; PCAST Report at 5–8; *United States v. Willock*, 696 F. Supp. 2d 536, 572 (D. Md. 2010).

D. *Shreck* Requires a Case-Specific Assessment of Admissibility, but the Trial Court Here Admitted Unlimited FATM Testimony Based on Its History of Admission by Other Courts.

The trial court admitted FATM testimony, without limitation, because it had been accepted by other courts, particularly in *People v. Holmes*, No. 2012CR1522, 2014 WL 8843346 (Colo. Dist. Ct. Sep. 2, 2014) and *People v. Purpera*, No. 2016CR7798 (Colo. Dist. Ct. Aug. 12, 2018). Prior judicial treatment is persuasive but not controlling. *See Eicher*, 250 P.3d at 267–68. Indeed, *Shreck* explicitly

rejected the *Frye*[7] test finding it "ill-suited for determining the admissibility of scientific evidence, which, by its nature, is ever-evolving." *See* 22 P.3d at 76 (criticizing courts for not subjecting evidence previously admitted under *Frye* to new scrutiny "despite improvements or other developments in scientific technologies").

These prior cases—*Purpera* and *Holmes*—do not sanction the unlimited, unqualified source-attribution opinions offered here. Even in 2014, *Holmes* limited the expert to testifying "to a reasonable degree of ballistic certainty." 2014 WL 8843346 at *9. While this was a reasonable limitation at the time, the U.S. Department of Justice has prohibited FATM examiners from using the phrase "ballistic certainty" since 2016. *See* U.S. Dep't. of Just., Off. of Legal Pol'y, *Uniform Language for Testimony and Reports*, https://www.justice.gov/olp/uniform-language-testimony-and-reports (last visited May 24, 2026).

A proper assessment of prior judicial treatment must consider the recent shift among courts that have conducted full evidentiary hearings with the benefit of the PCAST Report and post-PCAST scientific studies. Those courts have nearly universally precluded individualization. *See, e.g.*, *Adams*, 572 P.3d at 668

[7] *Frye v. United States*, 293 F. 1013, 1014 (D.C. Cir. 1923), used in some courts to determine the admissibility of scientific evidence, dictates that expert testimony or scientific techniques are only admissible if they have gained "general acceptance" as being reliable in the relevant scientific community.

(precluding AFTE "identification" because it confers an "'aura of reliability' of science even though it is not actually derived through science"); *Tibbs*, 2019 D.C. Super. LEXIS 9, at *65 (barring unqualified "source-attribution" opinion); *Geter v. United States*, 306 A.3d 126, 132 (D.C. 2023) (plain error to admit unqualified toolmark match testimony); *United States v. Adams*, 444 F. Supp. 3d 1248, 1267 (D. Or. 2020) (excluding AFTE "match" testimony); *Ross*, 68 Misc. 3d at 902–03 (limiting examiner to class characteristics and testimony that a firearm cannot be excluded); *Shipp*, 422 F. Supp. 3d at 782–83 (limiting expert opinion to "cannot be excluded"); *United States v. Briscoe*, 703 F. Supp. 3d 1288, 1307–09 (D.N.M. 2023) (prohibiting any statement that items were fired from the same firearm and barring the word "match").

The inherent subjectivity and lack of standards in FATM matching also led to the ruling that the Court of Appeals below sought to distinguish. The Maryland Supreme Court held that an expert cannot "opine without qualification that the crime scene bullets were fired from [the defendant's] firearm." *Abruquah*, 296 A.3d at 998. The Court of Appeals stated that, unlike in *Abruquah*, the examiner in Rodriguez-

Ortiz's case acknowledged "shortcomings" of the AFTE method and "provided a qualified opinion." *Rodriguez-Ortiz*, ¶¶ 57, 59–60. Not so.[8]

First, the examiner never agreed that flaws in the AFTE method were "shortcomings." He offered no articulable standard for how much similarity is "sufficient," and acknowledged, as he must, that his conclusion "ultimately rested on a subjective determination," was "not quantified," and that he simply "use[d] a microscope" to eyeball similarities. TR-10/29/2021(p.m.), pp.68:12–73:8, 76:10–13. He also stated that "[t]here is not a set number" of individual characteristics required and that he applied a personal threshold that neither the jury nor the defense could evaluate. *Id.* at p.71:14. But in the examiner's telling, these were ordinary features of forensic science.

Second, the examiner did *not* give a qualified opinion. He misleadingly claimed that "[t]he methods are objective" and that "the approach is objective, and it is scientific." TR-10/29/2021(p.m.), pp.69:12–13, 72:14–15. As the examiner did

[8] The Court of Appeals distinguished *Abruquah* on the ground that Maryland applies the *Daubert-Rochkind* admissibility standard, while Colorado applies *Shreck*. This distinction is immaterial for this purpose. *Shreck* abandoned the *Frye* standard because deference to professional consensus was inconsistent with a genuine reliability inquiry. In doing so, *Shreck* adopted a reliability-based standard substantially modeled on *Daubert*. *See* 22 P.3d at 76–77. A reliability framework that requires courts to act as genuine gatekeepers should reach the same conclusion as another reliability framework confronting the same unreliable methodology.

in *Abruquah,* he asserted that there was a match between a firearm and ammunition components. The examiner told the jury he "identified" two bullet fragments as "having been fired in the Jimenez [brand] pistol in this case" and that three cartridge cases "were fired by the same unknown firearm." *Id.* at pp.53:15–21, 57:21–58:7, 60:20–61:18.

The examiner's testimony conveys exactly the categorical certainty that science cannot support and that judicial precedent prohibits. Because the trial court failed to act as a CRE 702 gatekeeper, the examiner testified to conclusions that went far beyond the limits of science.

E. Even if FATM Identification Could Clear CRE 702, Which it Cannot, the Trial Court's CRE 403 Analysis Was Independently Deficient.

In a CRE 403 inquiry—a required component of *Shreck*—"evidence should be excluded when it is unfairly prejudicial, when it has an undue tendency to suggest a decision on an improper basis." *People v. Martinez*, 74 P.3d 316, 325 (2003). The incorrect CRE 403 calculus in this case is particularly stark. Testimony was presented under the cloak of science, by a witness who the court told the jury was indeed an expert in the field, with specialized training and hundreds of prior comparisons, on the single dispositive factual question in the case—carrying an obvious risk of overwhelming the jury's independent judgment. *See* PCAST Report

at 45 ("[J]urors are likely to overestimate the probative value of a 'match,'" and juror estimates of error rates are "orders of magnitude" lower than actual rates); *State v. Adams*, 572 P.3d at 668 ("AFTE identification evidence is . . . presented to jurors cloaked with the 'aura of reliability' of science even though it is not actually derived through science."); *People v. Cooper*, 2021 CO 69, ¶ 122 (Gabriel, J., dissenting) ("[A] witness's status as an expert can augment improper testimony with an aura of trustworthiness and reliability.").

F. A Full *Shreck* Hearing Was Independently Required.

Even if FATM matching was admissible in some form, which it is not, the failure to conduct a full *Shreck* hearing was itself independent error. *Shreck* requires specific findings on the reliability of scientific principles, 22 P.3d at 77–79, and admission of expert testimony without such findings is an abuse of discretion. *See Ruibal v. People*, 2018 CO 93, ¶ 12. While a *Shreck* hearing is not always required, specific findings are. *See Kutzly v. People*, 2019 CO 55, ¶ 11. Where reliability is genuinely disputed, a trial court cannot satisfy *Shreck* by referencing prior case authority without independent factual inquiry. *See People v. Rector*, 248 P.3d 1196, 1201 (Colo. 2011).

That is precisely the error here. Mr. Rodriguez-Ortiz moved to exclude the FATM examiner's testimony on reliability grounds. The trial court initially

scheduled a *Shreck* hearing, but when the prosecution moved to reconsider, citing *Purpera* and *Holmes*, the court cancelled the hearing and issued an order incorporating the prior analyses. The trial court never evaluated or heard expert testimony on the current state of the science or made independent factual findings on any *Shreck-Eicher* factor.

The Court of Appeals affirmed on the ground that the trial court had "ample information" from the *Purpera* and *Holmes* orders. 2025 COA 61, ¶ 65. That reasoning cannot be reconciled with *Ruibal* or *Kutzly*. The *Purpera* and *Holmes* orders did not evaluate the current scientific record because they preceded PCAST and substantial post-PCAST developments, and they cannot substitute for independent factual findings on a developed record. The decision to vacate the scheduled hearing was an abuse of discretion requiring remand.

G. It is Not Sufficient Under *Shreck* to Conclude that FATM "Matching" Goes to "Weight Not Admissibility."

"Before expert testimony may be presented to a jury, it must pass through the gate of admissibility—a gate trial courts have been entrusted with vigilantly guarding." *People v. Cooper*, 2021 CO 69, ¶ 1. *Shreck* adopted CRE 702's reliability standard precisely to prevent unreliable scientific evidence from reaching juries—not to defer scrutiny until cross-examination. The weight-versus-admissibility distinction concerns the *application* of a reliable methodology, not challenges to that

methodology's *fundamental* reliability. *See Shreck*, 22 P.3d at 82 (baseline reliability must be established before a methodology is scrutinized for the weight of the reliability). An expert's availability for cross-examination is a *prerequisite* to admission—it cannot also be the sole means of assessing reliability, as that would mean every expert opinion reaches trial. Moreover, *Shreck* requires a separate CRE 403 balancing determination; reliance on cross-examination as the vehicle for CRE 403 protection is inconsistent with *Shreck*'s express requirement of a discrete prejudice identification and then balancing analysis. 22 P.3d at 77–79.

In *Tibbs*, a multi-day evidentiary hearing on FATM with testimony from numerous experts and an in-depth evaluation of various studies led the court to hold it would be "fanciful to conclude that the normal adversarial process would enable a lay jury to adequately understand these issues" and that "the disputes surrounding it seem far too complex for a series of questions on cross-examination." 2019 D.C. Super. LEXIS 9, at *79–80; *see also Shipp*, 422 F. Supp. 3d at 768 ("[W]hen it comes to expert testimony, cross-examination is inherently handicapped by the jury's own lack of background knowledge."). Given the shocking state of the science, deferring assessment of FATM analysis to cross-examination is to abdicate the gatekeeping role entirely.

CONCLUSION

Shreck committed Colorado to an evidence-based approach to expert scientific testimony that considers the relevant factors required to assess the scientific reliability of a technique prior to admitting it. *Shreck* requires courts to act as genuine gatekeepers rather than deferring to prior decisions or the *ipse dixit* of forensic practitioners. That framework compels the conclusion that the examiner's individualization testimony should not have been admitted without limitations.

Amici urge this Court to reverse and remand, directing either (1) a *Shreck* hearing at which the current state of the science can be properly examined and specific reliability findings made on a developed record, including limitations as to what an expert can say regarding "matching;" or (2) exclusion of individualization in favor of limitations to class characteristics or, at most, that a firearm "cannot be excluded" as having fired ammunition.

Counsel for Amici Curiae Innocence Project, Inc. and the Korey Wise Innocence Project
/s/ *David H. Herrington*
David H. Herrington, #26PHV8920
Cleary Gottlieb Steen & Hamilton LLP
One Liberty Plaza
New York, NY 10006
(212) 225-2000
dherrington@cgsh.com
/s/ *Jordan Hahn*
Jordan Hahn, #26PHV8921
/s/ *Brooke Purinton*
Brooke Purinton, #26PHV8919
/s/ *Sarah Friedman*
Sarah Friedman, #26PHV8922
/s/ *Ami Ishikawa*
Ami Ishikawa, #26PHV8918
Cleary Gottlieb Steen & Hamilton LLP
2112 Pennsylvania Avenue
Washington, DC 20037
(202) 974-1500
jhahn@cgsh.com
bpurinton@cgsh.com
sfriedman@cgsh.com
aishikawa@cgsh.com

Counsel for Amicus Curiae Innocence Project, Inc.
/s/ *Marika Meis*
V. Marika Meis, #26PHV8913
Innocence Project
40 Worth St., Suite 701
New York, NY 10013
(212) 405-6008
mmeis@innocenceproject.org

Counsel for Amicus Curiae the Korey Wise Innocence Project
/s/ *Jud Lohnes*
Jud Lohnes, #33208
Korey Wise Innocence Project
University of Colorado Law School
Wolf Law Building, 401 UCB
Boulder, Colorado 80309
(303) 492-8489
Jud.Lohnes@colorado.edu

Counsel for Amicus Curiae the American Civil Liberties Union of Colorado

/s/ *Emma McLean-Riggs*
Timothy R. Macdonald, #29180
Emma Mclean-Riggs, #51307
American Civil Liberties Union of Colorado
303 E 17th Ave, Suite 350
Denver, CO 80203
(720) 402-3116
tmacdonald@aclu-co.org
emcleanriggs@aclu-co.org

CERTIFICATE OF SERVICE

I certify that on May 26, 2026, a true and correct copy of **BRIEF OF AMICI CURIAE INNOCENCE PROJECT, INC., KOREY WISE INNOCENCE PROJECT, AND THE AMERICAN CIVIL LIBERTIES UNION OF COLORADO IN SUPPORT OF PETITIONER RODRIGUEZ-ORTIZ** was filed with the Court via Colorado Courts E-Filing System, with e-service to the following:

Jeffrey Wermer, #52370
Colorado State Public Defender
1300 Broadway, Suite 300
Denver, CO 80203

Frank R. Lawson, #47042
Assistant Attorney General
1300 Broadway, 9th Floor
Denver, CO 80203

/s/ *Jud Lohnes*
Jud Lohnes, # 33208
Korey Wise Innocence Project
University of Colorado Law School
Wolf Law Building, 401 UCB
Boulder, Colorado 80309
(303) 492-8489
Jud.Lohnes@colorado.edu