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IN THE SUPREME COURT OF THE STATE OF DELAWARE

KASHIEM THOMAS Appellant, v. THE STATE OF DELAWARE Appellee.	: : : : : :	No. 530, 2024 On Appeal from the Superior Court of Delaware in and for New Castle County ID No. 1703001172

BRIEF OF AMICI CURIAE INNOCENCE PROJECT AND INNOCENCE PROJECT DELAWARE IN SUPPORT OF APPELLANT

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INTEREST OF THE AMICI CURIAE

The Innocence Project (IP) is a national litigation and public policy organization that works to free the innocent, prevent wrongful conviction, and create fair, compassionate, and equitable systems of justice for everyone. The IP's work is grounded in anti-racism and guided by science. In addition to representing individuals on post-conviction claims of innocence, the IP engages in strategic litigation and policy advocacy to effect reforms that will help prevent future wrongful convictions and promote the equitable administration of justice. Based on decades of exoneration data, the IP has identified the main risk factors for wrongful conviction and advocates to remediate them through legislation and litigation. Significantly, research demonstrates that misapplied forensic science is a leading cause of wrongful convictions. To preserve the ability of the wrongfully convicted to rectify injustices stemming from unreliable forensic evidence, the Innocence Project urges courts nationwide to afford robust avenues for post-conviction review of "scientific" evidence and trial counsels' obligation to understand such evidence.

Innocence Project Delaware (IPD) is Delaware's only organization focused exclusively on addressing and preventing wrongful convictions. With a mission to secure justice for those individuals wrongfully imprisoned for crimes they did not commit, IPD has a strong interest in ensuring that only forensic evidence deemed reliable is admissible in court proceedings.

STATEMENT PURSUANT TO DELAWARE SUPREME COURT RULE 28

Amici curiae the Innocence Project and Innocence Project Delaware state, pursuant to Rule 28 of the Rules of the Delaware Supreme Court, that: (1) no party's counsel authored this brief in whole or substantial part; (2) no party or party's counsel contributed money intended to fund the preparation or submission of this brief; and (3) no person other than amici curiae, their members, and their counsel, contribute money intended to fund the preparation or submission of this brief.

SUMMARY OF THE ARGUMENT

Flawed, misapplied, and exaggerated forensic science evidence is a leading cause of wrongful convictions. Thousands of exonerations over more than three decades have demonstrated that faulty forensic science can produce grave miscarriages of justice. The risk is especially great when forensic science rests on analysts' subjective decisions and employs methods that have not undergone adequate empirical validation. Analysts making subjective decisions are susceptible to cognitive bias and can be influenced by extraneous, contextual information about the case. And without proper empirical validation, courts cannot assess whether a forensic method produces correct and consistent results, or whether it is capable of the degree of certainty and precision its practitioners claim.

The ShotSpotter evidence in this case exemplifies these risks. Two analysts examining the same acoustic data used subjective methods to evaluate the evidence and reached two divergent conclusions. In the absence of clear criteria or standards to assess their subjective judgments, there is no way to tell whether either of their analyses was more likely to be correct. It is, however, noteworthy that the analyst who testified at trial may have received biasing contextual information from the prosecution. Moreover, the methods he employed have not been empirically validated; no scientific studies have assessed whether or how often ShotSpotter analysts' techniques produce correct results when measured against ground truth.

The empirical literature that does exist does not support an analyst being able to identify the location of a sound source as precisely as the testifying expert did here, where he purported to pinpoint the shots' origin at the sidewalk rather than the street mere feet away.

Amici urge this Court not to disregard these fundamental scientific problems when assessing the reasonableness of trial counsel's decision to withdraw the *Daubert* challenge, the likelihood that the trial court would have precluded the ShotSpotter evidence at a *Daubert* hearing, or the impact of this evidence on the trial outcome.

ARGUMENT

I. Flawed, Misapplied, and Exaggerated Forensic Science Evidence Is a Key Cause of Wrongful Convictions.

A. Data from decades of exonerations shows that flawed forensic science is a leading contributor to wrongful convictions.

While forensic science has provided the legal system with powerful tools, its misuse and misapplication have contributed to the legal system's worst injustices. Of the 3,754 exonerations documented by the National Registry of Exonerations since 1989, false or misleading forensic evidence is listed as a contributing factor to the underlying wrongful conviction in 1,083 cases—over a quarter of known exonerations. Nat'l Registry of Exonerations, *% Exonerations by Contributing Factor* (2025);[1] Nat'l Registry of Exonerations, *Explore Exonerations* (2025).[2] Of the Innocence Project's DNA exonerations since 1989, *more than half* involve misapplied forensic science as a contributing factor. Innocence Project, *Misapplication of Forensic Science* (2025).[3] In Innocence Project cases, faulty forensic science contributed to more wrongful convictions than any other factor

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[1] https://exonerationregistry.org/exonerations-contributing-factor (last accessed Nov. 16, 2025).

[2] https://exonerationregistry.org/cases?f%5B0%5D=n_pre_1989%3A0 (last accessed Nov. 16, 2025).

[3] https://innocenceproject.org/misapplication-of-forensic-science/ (last accessed Nov. 16, 2025).

apart from eyewitness misidentification. Innocence Project, *Explore the Numbers: Innocence Project's Impact* (2025).[4]

Critically, faulty forensic science causes wrongful convictions not only in cases where the entire underlying field lacks scientific foundation; wrongful convictions also often occur when expert witnesses exaggerate or mischaracterize evidence derived from otherwise valid disciplines. Misleading forensic science testimony has "exaggerated the connection between the crime scene evidence and the person of interest, mischaracterized exculpatory results as inconclusive, or downplayed the limitations of the forensic science method . . . used." Innocence Project, *Misapplication of Forensic Science*, *supra*; see also President's Council of Advisors on Sci. & Tech., *Forensic Science in the Criminal Courts: Ensuring Scientific Validity of Feature-Comparison Methods* 29, 54 (2016) (hereinafter "PCAST Report") (noting that "expert witnesses have often overstated the probative value of their evidence, going far beyond what the relevant science can justify," and emphasizing that "[s]tatements claiming or implying greater certainty than demonstrated by empirical evidence are scientifically invalid"). As discussed below, even assuming some baseline reliability to ShotSpotter, the prosecution's expert testimony here went far beyond what ShotSpotter's methods can establish.

[4] https://innocenceproject.org/exonerations-data/ (last accessed Nov. 16, 2025).

Flawed forensic science is so risky in part because jurors tend to accord great weight to "expert testimony" that sounds scientific, even if the methods underlying that testimony have not been scientifically validated. "Expert evidence can be both powerful and quite misleading because of the difficulty in evaluating it." *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, 595 (1993) (citation omitted); *see also* Dawn McQuiston–Surrett & Michael J. Saks, *Communicating Opinion Evidence in the Forensic Identification Sciences: Accuracy and Impact*, 59 Hastings L. J. 1159, 1188 (2008) (recognizing that "most jurors begin with an exaggerated view of the nature and capabilities of forensic identification"). It can be so powerful, in fact, that it "may be assigned talismanic significance in the eyes of lay jurors." *United States v. Frazier*, 387 F.3d 1244, 1263 (11th Cir. 2004). Moreover, jurors often assume that the court's qualification and authorization of a given expert to testify means that the expert will not be subject to the effects of subjectivity or personal bias.

This is true even if jurors are told that the "expert's" method is unvalidated. *See* Dawn McQuiston-Surrett & Michael J. Saks, *The Testimony of Forensic Identification Science: What Expert Witnesses Say and What Factfinders Hear*, 33 L. & Hum. Behav. 436, 443, 451 (2009) (finding jurors accorded significant weight to hair comparison testimony even when expert acknowledged in cross-examination that "assumptions underlying the expert's opinion" had undergone "little scientific testing" and were entirely subjective). In other words, cross-examination alone is

unlikely to cure the prejudicial effects of unreliable forensic evidence. It is therefore critical that courts have the opportunity in pretrial *Daubert* hearings to scrutinize the reliability of forensic methods and the scope of inferences they can support. *See Daubert*, 509 U.S. at 593–94.

B. Flawed forensic science evidence poses the most risk when it rests on subjective decisions and when it is not empirically validated.

Decades of research have shown that forensic science methods are especially likely to produce wrongful convictions when they involve subjective determinations by analysts who, as research amply demonstrates, are be susceptible to the influence of cognitive bias and when these techniques are not empirically validated. As discussed *infra*, the ShotSpotter testimony in this case exemplifies both risk factors.

Cognitive bias—the unconscious effect of preconceived assumptions, extraneous information, or pressure to reach a certain result—is well documented as a driver of erroneous conclusions in forensic science. *See* PCAST Report, *supra*, at 31, 113; Itiel Dror, *Cognitive and Human Factors in Expert Decision Making: Six Fallacies and the Eight Sources of Bias*, 92 Anal. Chem. 7998, 7999–8002 (2020) (documenting sources of bias in forensic analysts' conclusions). It can take several forms. Practitioners fall victim to *confirmation bias* when they "interpret information, or look for new evidence, in a way that conforms to their pre-existing beliefs or assumptions." PCAST Report, *supra*, at 31. They may engage in *circular reasoning*: looking for ways to make the evidence fit the prosecution's theory of the

case, discounting exculpatory evidence, and working "backward . . . from the target/suspect to the evidence" rather than "from the evidence to the suspect (from data to theory)." Dror, *supra*, at 8000. They may even view themselves not as neutral analysts but as sympathetic to, or even part of, the prosecution team, especially when that view is prevalent in the organizations they work for or the training they receive. *Id.* at 8002; *see, e.g.*, Andrea Estes & Scott Allen, *Indicted drug analyst Annie Dookhan's e-mails reveal her close personal ties to prosecutors*, Boston.com (Dec. 20, 2012)[5] (documenting "close relationships" between prosecutors and state chemist Annie Dookhan, who was discovered to have altered drug evidence and test results in numerous cases in pursuit of securing convictions).

One of the most common types of cognitive bias in the forensic context is *contextual bias*, where practitioners are improperly and typically unconsciously influenced by case information irrelevant to the scientific analysis they are supposed to perform. *See* Dror, *supra*, at 8001. Information such as "that the suspect confessed to the crime, that they have been identified by eyewitnesses . . . or that the suspect has a criminal record . . . can all cause expectations" that may impact both the forensic analysis itself and the expert's interpretation of results. *Id.*

[5] https://www.boston.com/news/local-news/2012/12/20/indicted-drug-analyst-annie-dookhans-e-mails-reveal-her-close-personal-ties-to-prosecutors/.

For example, one recent study examined forensic pathologists' manner-of-death decisions in a hypothetical case scenario involving the death of a child while in a caregiver's custody. Itiel Dror et al., *Cognitive bias in forensic pathology decisions*, 66 J. Forensic Sci. 1751, 1752–53 (2021). The pathologists all received identical medical information, but some were told the child was African American and the caregiver was the mother's boyfriend, while others were told the child was white and the caregiver was a grandmother. *Id.* at 1753. Pathologists were substantially more likely to rule the death a homicide rather than an accident in the case of the African American child in the mother's boyfriend's care compared to the white child in the grandmother's care, even though the child's and caregiver's identities were not medically relevant. *Id.* at 1753–54. Contextual information can thus cause evidence to be "overweighted, underweighted, or neglected," and may lead analysts to deviate from standard procedures or fail to consider alternative theories. Dror, *supra*, at 8001.

The other key risk factor that wrongful convictions have exposed in forensic science evidence is lack of empirical validation. Empirical validation, which tests analysts' decisions against known ground truth, is the *only* way to ensure that a method can produce correct results and to determine its error rates. *See Daubert*, 509 U.S. at 593–94 (1993) (listing "whether [a scientific technique] can be (and has been)

tested" and its "known or potential rate of error" as factors for courts to consider in deciding whether evidence based on that technique is admissible).

In 2016, a groundbreaking report by PCAST evaluated several forensic science disciplines, exposed serious flaws in several disciplines, and documented the need for proper validation testing. PCAST Report, *supra*, at 40. The PCAST Report found that nearly all the disciplines it examined had not been adequately tested and were instead routinely admitted in court based on the unverified attestations of practitioners. *See id.* at 68 (finding "few black-box studies appropriately designed to assess scientific validity of subjective methods"). The report emphasized that "neither experience, nor judgment, nor good professional practices (such as certification programs and accreditation programs, standardized protocols, proficiency testing, and codes of ethics) can substitute for actual evidence of foundational validity and reliability." *Id.* at 6.

Proper empirical testing must assess whether and how often analysts get correct results under conditions that mirror their actual casework. PCAST Report, *supra*, at 46. Establishing the foundational validity of a forensic method requires empirical evidence showing that the method is "repeatable, reproducible, and accurate, at levels that have been measured and are appropriate to the intended application." *Id.* at 47. A method is *repeatable* if, "with known probability, an examiner obtains the same result" when analyzing the same evidentiary evidence or

data. *Id.* It is *reproducible* if, "with known probability, different examiners obtain the same result, when analyzing the same samples." *Id.* And it is *accurate* if, "with known probabilities, an examiner obtains correct results." *Id.*

ShotSpotter, as discussed below, exemplifies both lack of empirical validation and the kind of subjectivity prone to cognitive bias—particularly when it comes to the evidence and testimony the prosecution introduced in this case. Here, the fact that Greene provided a conclusion more favorable to the prosecution—locating the source of the gunshots on the sidewalk rather than the street—after communicating with the prosecution raises the possibility that he was exposed to biasing contextual information. And the fact that two analysts considering the same acoustic data reached different conclusions—meaning that the ShotSpotter testimony was by definition not reproducible—casts doubt on ShotSpotter's foundational validity. As such, amici urge this Court to give due consideration to these risk factors when it assesses trial counsel's reasonableness in withdrawing the *Daubert* challenge, the likelihood that a *Daubert* hearing would have resulted in exclusion of the ShotSpotter evidence, and the impact of that evidence on the outcome at trial.

II. ShotSpotter and Greene's Analysis Here Rely on Subjective Methods Vulnerable to Cognitive Bias and Are Empirically Unvalidated.

A. ShotSpotter's post-processing methods are subjective and vulnerable to cognitive bias, especially contextual bias.

ShotSpotter's post-processing methods involve several subjective decisions that can substantially influence the results. Different analysts, for instance, may disagree on whether a particular sound is a gunshot or an echo, or may base their calculations on small differences in timing that translate to substantial differences in the calculated location. A brief overview of the process analysts use to perform location estimates is useful in order to understand the subjective determinations and potential sources of error at each step.

ShotSpotter's microphone sensors are designed to detect impulsive sounds—loud, sharp bangs or pops that may be consistent with gunfire, but that can also come from construction, fireworks, or other non-gunfire sources. Robert B. Calhoun et al., *Precision and accuracy of acoustic gunshot location in an urban environment*, 2 (2020);[6] *see, e.g.*, Joey Scott, *Data Shows ShotSpotter Leads to Dead Ends and Wasted Resources in Pasadena* (Aug. 24, 2023)[7] (documenting that police officers in Pasadena commonly noted that nail guns, vehicles, and fireworks frequently

[6] Available at https://arxiv.org/pdf/2108.07377.pdf. This white paper by SoundThinking employees outlines certain design features of the technology; it was not peer-reviewed or published in a peer-reviewed research or academic journal.

[7] https://knock-la.com/data-shows-shotspotter-leads-to-dead-ends-and-wasted-resources-in-pasadena/.

caused erroneous ShotSpotter alerts). If multiple sensors activate close enough together in time that they could plausibly all be detecting the same sound, ShotSpotter's computer algorithm performs a calculation known as "multilateration," estimating a location for the sound source based on the differences among the sensors' activation times. Calhoun et al., *supra*, at 2–3. When ShotSpotter evidence may be offered in court, an analyst from the company reviews the acoustic data, sometimes altering the computer's multilateration calculation, to produce a forensic report. *See* SoundThinking, *ShotSpotter: ShotSpotter Forensic Services* (2025).[8]

This analysis requires multiple subjective decisions. First, an analyst must assess whether a given sound recording is likely to be a gunshot or some other, similar noise. There are no objective criteria to do so. It is simply a judgment call. Not only can gunfire be easily confused with similar-sounding non-gunfire, but in built environments, "multipath distortion" is common. *See* Juan R. Aguilar, *Gunshot Detection Systems in Civilian Law Enforcement*, 63 J. Audio Eng'g Soc'y 280, 281 (2015). Multipath distortion refers to the same sound traveling via multiple routes to the same sensor, for instance by echoing or diffracting off the ground, buildings, or other obstructions. *Id.*; *see also* Calhoun et al., *supra*, at 10. In other words, a sensor

[8] https://www.soundthinking.com/law-enforcement/leading-gunshot-detection-system/ (last accessed Nov. 20, 2025).

may pick up both a given sound and its echoes. To calculate the location of a sound source, the analyst must decide which acoustic pulses correspond to actual gunshots as opposed to echoes or other non-gunfire noises. Classifying a pulse as an echo rather than a gunshot can dramatically change the location calculation: in one recent case, reclassifying the acoustic data to exclude suspected echoes resulted in a location two hundred to three hundred yards away from what the was originally calculated. *Commonwealth v. Rios*, 258 N.E.3d 303, 312 (Mass. 2025).

However, humans often perform poorly at identifying, recognizing, and distinguishing sounds. There is little if any scientific literature specifically testing humans' ability to identify gunshots, but one recent study tested human listeners' ability to determine whether a pair of voice recordings were from the same speaker or different speakers. Nabanita Basu et al., *Speaker identification in courtroom contexts – Part I: Individual listeners compared to forensic voice comparison based on automatic-speaker-recognition technology*, 341 Forensic Sci. Int'l 111499, 4-5 (2022). It found that *all* the human subjects performed worse than an automated forensic voice comparison system, and only a minority did better than chance; more than half of the human subjects performed "worse than a system that that provided no useful information." *Id.* at 11. There is no evidence that humans are any better at distinguishing gunshots from other similar sounds than they are at distinguishing voices. And there is no consensus on the most reliable or appropriate way to evaluate

sound waveform features to try to differential gunshots from echoes or other impulsive noises. Aguilar, *supra*, at 285 (describing competing methods for identifying gunshots and the different acoustic features each method considers relevant). It is exactly the kind of subjective decision vulnerable to bias.

Additionally, when multiple sensors detect pulses—especially if there are multiple suspected shots that may each have echoes—analysts also make subjective choices about which sensors and which pulses to include or exclude in the location calculation. ShotSpotter's own developers admit that "[t]he construction of sets of pulses that are appropriate for multilateration becomes more difficult as the number of shots and number of shooters increases." Calhoun et al., *supra*, at 3. "Associating pulses from one shot with pulses from a different shot will also result in large multilateration error." *Id.* But when faced with complex audio data from multiple sensors, analysts often have no easy way to tell which pulse corresponds to which shot. Under such circumstances, when analysts have other contextual information about the case, they may consciously or unconsciously interpret acoustic pulses so as to conform to police's theory of where a suspected shooter was positioned.

The fact that Greene reached different conclusions from Ellison after being contacted by the prosecution raises the possibility that contextual information biased his analysis in this case. In previous cases, ShotSpotter analysts have been known to reinterpret acoustic data and alter their conclusions based on police and prosecutors'

input. *See, e.g.,* Todd Feathers, *Police Are Telling ShotSpotter to Alter Evidence from Gunshot-Detecting AI*, VICE (July 26, 2021).[9]

The case of Silvon Simmons in Rochester, New York, is especially instructive. There, police responded to a report of three shots fired. Decision and Order, *People v. Simmons*, Ind. No. 2016-0404, 2 (Monroe County Ct., State of N.Y., Feb. 13, 2018). Two officers followed a car they believed to have been involved, and when the car stopped and Mr. Simmons exited from the passenger side, one officer claimed he saw Mr. Simmons point a gun at him. *Id.* at 2–3. The officer fired four times at Mr. Simmons, striking him three times and gravely injuring him. *Id.* at 3. Mr. Simmons was charged with Attempted Aggravated Murder and Attempted Aggravated Assault on a Police Officer along with weapon possession charges. *Id.*

Contested ShotSpotter evidence was presented at trial after Mr. Simmons sought, and was denied, a *Frye* hearing. It purportedly documented the four shots from the officer and one prior shot that the prosecution argued Mr. Simmons had fired. *Id.* at 5. However, ShotSpotter initially failed to issue an alert for the four shots from the officer, detecting three of them but classifying them as helicopter noise; an analyst later updated the number of sounds to four and reclassified them as gunshots *at the request* of the police. *Id.* It had initially also failed to detect an earlier shot; the

[9] https://www.vice.com/en/article/police-are-telling-shotspotter-to-alter-evidence-from-gunshot-detecting-ai/.

purported recording of the shot Mr. Simmons was accused of firing "was found during a search of the audio spool," separately from the other four, also at the request of police. *Id.* The jury acquitted Mr. Simmons of all charges except for the last count of weapon possession, and the presiding judge at trial, who had not been the judge to rule on the request for a *Frye* hearing, then vacated the conviction on the final charge. *Id.* at 9–10. The judge found that ShotSpotter "got it wrong," and that failure to disclose crucial discovery related to the reclassifications of the audio data should have resulted in that evidence being precluded. *Id.* at 8–9.

Greene's ShotSpotter testimony here exhibits similar hallmarks of unreliability, subjectivity, and potential bias from contextual information. These factors could best have been assessed in a *Daubert* hearing, since as noted above, cross-examination alone is rarely enough to overcome the weight juries accord to scientific-sounding evidence.

B. ShotSpotter's methods are empirically unvalidated.

Empirical literature casts doubt on ShotSpotter's ability both to reliably distinguish gunfire from other sounds and to reliably find the location of a sound source. This applies both to the automated, software-based components of the system and to post-processing by human analysts. Even if this Court assumes that a ShotSpotter analyst could find the *approximate* location of suspected gunfire, the limited existing empirical literature does not support pinpointing a sound source as

precisely as Greene claimed to here—a matter of feet between the sidewalk and the middle of the street. The very fact that he reached a different conclusion from the other ShotSpotter analyst, Ellison, lays bare the uncertainty, potential for error, and limitations of his analysis.

It is well recognized that environmental factors affect the reliability of multilateration techniques. Location calculations based on a sound signal's differing arrival times to different sensors may be "viable *when line-of-sight exists*" between a sound source and sensor locations—that is, when the sound signal propagates from the source to the sensor in more or less a straight line. Aguilar, *supra*, at 286 (emphasis added). But a non-line-of-sight pathway "introduces diffraction and reduces the performance of [time difference of arrival] estimators." *Id*. In built-up urban environments, non-line-of-sight conditions are the norm, not the exception.

Non-line-of-sight conditions introduce error and uncertainty in multiple ways. First, sound propagation in heavily built environments "usually involves ground reflections," which can cause a sound wave to attenuate depending on how much energy the ground surface absorbs. *Id.* at 281. Second, "[t]he presence of surrounding buildings . . . introduces multipath distortion, acoustic diffraction, and non-line-of-sight (NLOS) conditions." *Id.* Time estimates can be distorted when a sound pulse diffracts, reflects, or refracts on its way to a sensor, and research has found that without line-of-sight, "the percentage of correct estimation of gunshot

direction of arrival can be drastically reduced to less than 40%." *Id.* at 287 (first citing Brian G. Ferguson and Kam W. Lo, *Passive ranging errors due to multipath distortion of deterministic transient signals with application to the localization of small arms fire*, 111 J. Acoustic Soc. Am. 117 (2002), then citing P. Naz et al., *Acoustic detection and localization of small arms, influence or urban conditions*, Proc. SPIE 6963, Unattended Ground, Sea, and Air Sensor Technologies and Applications X, 69630E (16 April 2008)).

Weather, especially wind speed, can reduce reliability as well. Wind can dramatically increase error margins in location estimates, with faster windspeeds "doubl[ing] the localization error." *Id.* at 287 (citing Kam W. Lo and Brian Ferguson, *Localization of Small Arms Fire Using Acoustic Measurements of Muzzle Blast and/or Ballistic Shock Wave Arrivals*, 132 J. Acoustical Soc'y Am. 2997 (2012)). Researchers recognize that "environmental issues affecting muzzle blast propagation in the outdoors imposes severe shortcomings on the accuracy of shooter location estimates." *Id.* at 286–87.

ShotSpotter, largely deployed in urban areas, has not been tested or validated to account for urban environmental conditions or non-line-of-sight conditions. To the contrary, its developers acknowledge that "[a] model that incorporates the combined effect of structures, terrain, foliage, wind, and ground reflection would be

of value" in determining where to place sensors, but they explicitly admit that they do not currently have such a model. Calhoun et al., *supra*, at 16.

As a result, a court cannot presume that ShotSpotter analysts can locate sounds with the level of precision claimed in this case. Its parent company advertises a considerably larger error margin of 82 feet (or 25 meters). SoundThinking, *ShotSpotter* (2025).[10] SoundThinking employees and law enforcement customers have repeatedly testified to the same error margin in courts, in some cases acknowledging that environmental conditions can introduce even greater error—and conceding that even the 82-foot error margin is a policy or marketing claim, not a scientifically verified one. *See Funderburk v. United States*, 260 A.3d 652, 655 n.2 & 662 (D.C. App. 2021) (summarizing testimony that location given by ShotSpotter was "an estimate" and that evidence in the record was that "ShotSpotter can only identify the location of a shot to within a 25-meter radius") ; *Rios*, 258 N.E.3d at 317 (summarizing testimony from ShotSpotter analyst that ShotSpotter's parent company "guarantee[s] that ShotSpotter captures eight percent of all detectable events within twenty-five meters of an actual shooting," but that this was "merely a 'ShotSpotter policy' statement," not necessarily an empirically verified claim); *People v. Cardoza*, 194 N.Y.S.3d 376, 378 (N.Y. App. Div. 2023) (noting testimony

[10] https://www.soundthinking.com/law-enforcement/leading-gunshot-detection-system/ (last accessed Nov. 18, 2025), permanent link at https://perma.cc/TMA7-4JPR.

from "senior technical support engineer for ShotSpotter" that "system's margin of error was 25 meters," but that "additional factors" could result in mis-locations by more than that).

Despite the well-established need for empirical testing of forensic methods, ShotSpotter's parent company has released no empirical evidence, let alone from any appropriately designed studies, that its analysts can reliably calculate location estimates when faced with noisy and often ambiguous recordings. It is not clear that its analysts have even undergone such testing in cases where ground truth is known. In court, it actively resists releasing any information about its employees' accuracy and proficiency rates. *See, e.g. People v. Jones*, 220 N.E.3d 475, 482-83 (Ill. App. Ct. 2023) (documenting ShotSpotter's refusal to comply with court order, following defense subpoena, for it to produce "records reflecting the qualifications, experience, and training of the [employee] who analyzed the acoustic pulse" in that case).

A *Daubert* hearing could have probed this absence of empirical validation. The trial court would then have had the chance to assess whether Greene's claims rested on adequate scientific foundations, and may well have either excluded the ShotSpotter evidence or substantially limited it. As this Court reviews trial counsel's withdrawal of the *Daubert* challenge, amici urge this Court to give due consideration to the dearth of studies validating ShotSpotter—and the ample evidence from the

independent research that *does* exist casting doubt on the validity of Greene's testimony here.

CONCLUSION

The ShotSpotter testimony in this case exhibits the precise features that have led to wrongful convictions resting on faulty forensic science in the past: subjective methods vulnerable to cognitive bias and a lack of empirical testing to support the expert witness's claims. In evaluating trial counsel's conduct and the import of this evidence to the outcome at trial, amici respectfully urge this Court not to disregard these problems.

Respectfully Submitted,

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IN THE SUPREME COURT OF THE STATE OF DELAWARE

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