

IN THE  
**SUPREME COURT OF THE STATE OF ARIZONA**

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STATE OF ARIZONA,  
*Petitioner,*

*v.*

**THE HONORABLE JERRY BERNSTEIN, JUDGE PRO  
TEMPORE OF THE SUPERIOR COURT OF THE STATE OF ARIZONA, IN AND FOR  
THE COUNTY OF MARICOPA,**  
*Respondent Judge*

**DOREEN LYNN HERMAN; RAMSEY TOHANNIE; ARMEN ASLAYAN; KEITH  
PORTER; MARA HALL; SHYLA ROTMIL; ROBERT R. FARINAS; KYMBERLY  
CROWLEY; JASON QUAN; MICHAEL DINOLA; KELLY LEWIS DAY,**  
*Real Parties in Interest.*

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No. CV-14-0057-PR  
Filed April 23, 2015

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Special Action from the Superior Court in Maricopa County  
The Honorable Jerry Bernstein, Judge Pro Tempore  
No. CR2010-126778

**VACATED AND REMANDED**

Opinion of the Court of Appeals, Division One  
234 Ariz. 89, 317 P.3d 630 (App. 2014)

**VACATED IN PART**

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COUNSEL:

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CHIEF JUSTICE BALES authored the opinion of the Court, in which VICE CHIEF JUSTICE PELANDER, and JUSTICES BERCH, BRUTINEL, and TIMMER joined.

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CHIEF JUSTICE BALES, opinion of the Court:

¶1 Arizona Rule of Evidence 702 requires a trial court to act as a gatekeeper to ensure that only reliable expert witness testimony is admitted for the jury's consideration. This case concerns the trial court's role under Rule 702(d) when a party contends that an expert has not properly applied generally reliable principles or methods. We hold that courts, as gatekeepers, should consider whether a methodology has been correctly applied. But we conclude that errors in application should result in the exclusion of evidence only if they render the expert's conclusions unreliable; otherwise, the jury should be allowed to consider whether the expert properly applied the methodology in determining the weight or credibility of the expert testimony.

I.

¶2 Real parties in interest are eleven defendants charged with aggravated driving under the influence. The Scottsdale Crime Laboratory ("SCL") tested each defendant's blood for blood alcohol concentration ("BAC"). As described by the court of appeals:

To test the blood, the SCL used a Clarus 500 gas chromatograph serial number 650N9042003 manufactured by PerkinElmer (the 2003 Instrument), an autosampler, a personal computer and a printer. Stated simply, after calibration, several dozen vials are placed in the carousel of the 2003 Instrument. The vials contain blood samples (each individual has two samples tested at a time, with the second sample called a replicate) along with control samples. The vials are sampled, one by one, and analyzed by the 2003 Instrument, a process that takes several hours. The data are then processed (creating graphs showing the chemical properties of the compounds tested for called chromatograms) and results are calculated and printed. The output is checked for consistency with expected results, control samples and quality controls, and replicates are

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checked to make sure that results are within plus or minus five percent of each other according to SCL protocol. A second analyst then performs a technical review, which is followed by an administrative review.

*State v. Bernstein*, 234 Ariz. 89, 92 ¶ 2, 317 P.3d 630, 633 (App. 2014).

¶3 Defendants moved to exclude evidence of their BAC results under Rule 702, arguing that the instrument had unresolved flaws that undermined its reliability. They pointed primarily to “data drops,” a term they use to describe the instrument’s occasional failure to produce any results for a sample, mislabeling of vials, and emails among SCL staff expressing concerns about the instrument.

¶4 After a seventeen-day evidentiary hearing held pursuant to *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), the court found that “[n]o testimony has shown that any of the consolidated defendants’ tests were inaccurate. The State, in fact, presented evidence to the contrary.” Only one defendant’s test had been performed improperly, and that sample was later rerun. The court also observed that “because [the instrument] is non-conforming doesn’t necessarily mean the results are inaccurate.”

¶5 The trial court then discussed the data drops, the mislabeling, and the staff emails. The court found it significant that the instrument was still being used even though the lab’s accreditation standards required non-conforming instruments to be removed from service to evaluate a malfunction. In the emails, SCL staff expressed concern that the cause of the malfunctions had not been determined or the problem resolved, raising potential legal issues. The court concluded that “[i]nherent in the concept of reliability is confidence,” and that, in light of the emails, “confidence in the reliability of [the instrument] is clearly undermined.”

¶6 Although the court found that the State met its burden under Rule 702(a) through (c) for establishing the admissibility of the BAC results, the court ruled that the State failed to show that the testing methodology had been reliably applied as required by subsection (d). The court thus excluded evidence of the results as to all defendants.

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¶7 The State petitioned for special action relief in the court of appeals, which granted relief. *Bernstein*, 234 Ariz. at 100 ¶ 29, 317 P.3d at 641. The court of appeals focused on the data drops but concluded that “[t]here was no showing . . . that such failures to provide test results meant that usable BAC test results [that were] produced by the 2003 Instrument were not reliable.” *Id.* at 98 ¶ 22, 317 P.3d at 639. The court thus held that the State met its burden as to Rule 702(d) and vacated the trial court’s order excluding the evidence. *Id.* at 100 ¶ 27, 317 P.3d at 641.

¶8 We granted review because the application of Rule 702(d) is a recurring issue of statewide importance. We have jurisdiction pursuant to Article 6, Section 5(3) of the Arizona Constitution and A.R.S. § 12-120.24.

II.

¶9 We review the interpretation of court rules de novo, *State v. Salazar-Mercado*, 234 Ariz. 590, 592 ¶ 4, 325 P.3d 996, 998 (2014), but we review a trial court’s exclusion of evidence for an abuse of discretion, *State v. Davolt*, 207 Ariz. 191, 209 ¶ 66, 84 P.3d 456, 474 (2004). An error of law constitutes an abuse of discretion. *Twin City Fire Ins. Co. v. Burke*, 204 Ariz. 251, 254 ¶ 10, 63 P.3d 282, 285 (2003). Because Rule 702 mirrors its federal counterpart, we may look to the federal rule and its interpretation for guidance. *Salazar-Mercado*, 234 Ariz. at 592 ¶ 7, 325 P.3d at 998. As the proponent of the expert testimony, the State bears the burden of establishing its admissibility by a preponderance of the evidence. *Id.* at 593 - 94 ¶ 13, 325 P.3d at 999 - 1000.

III.

¶10 Rule 702, which governs expert witnesses testimony, provides that:

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:

(a) 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;

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(b) the testimony is based on sufficient facts or data;

(c) the testimony is the product of reliable principles and methods; and

(d) the expert has reliably applied the principles and methods to the facts of the case.

¶11 The rule “recognizes that trial courts should serve as gatekeepers in assuring that proposed expert testimony is reliable and thus helpful to the jury’s determination of facts at issue.” Ariz. R. Evid. 702 cmt. (2012). But the comment also observes that “[t]he trial court’s gatekeeping function is not intended to replace the adversary system.” *Id.* Rather, “[c]ross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.” *Id.*; cf. *Daubert*, 509 U.S. at 596.

¶12 *Daubert* left unclear whether the particular application of a generally reliable methodology should be assessed by the trial court as part of its gatekeeper role or instead by the jury in determining the weight to give expert testimony. Courts and commentators have continued to suggest different approaches to the issue. See, e.g., *United States v. McCluskey*, 954 F. Supp. 2d 1224, 1243 - 55 (D.N.M. 2013) (discussing cases); 29 Charles Alan Wright & Victor James Gold, *Federal Practice & Procedure* § 6266 (1st ed. 2014) (distinguishing between “broad” and “narrow” views regarding the scope of the gatekeeping inquiry).

¶13 Rule 702(d), however, recognizes that a trial court must consider whether an expert reliably applied the pertinent methodology when expert testimony concerns the facts of a particular case. Cf. *Salazar-Mercado*, 234 Ariz. at 593 ¶¶ 10-11, 325 P.3d at 999 (holding that “cold” expert testimony not based on the facts of a case may be admissible if it satisfies Rule 702(a) - (c)). Thus, the rule by its terms forecloses the approach of leaving challenges to an expert’s application of a methodology exclusively to the jury. Such challenges are instead a proper subject of the trial court’s gatekeeping inquiry. *But cf. United States v. Bonds*, 12 F.3d 540, 563 (6th Cir. 1993) (holding, under earlier version of Federal Rule 702, that “in general, criticisms touching on whether the lab made mistakes in arriving at its results are for the jury”).

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¶14 But not all errors in the application of reliable principles or methods will warrant exclusion. Rule 702 contemplates that expert testimony can be “shaky” yet admissible. Ariz. R. Evid. 702 cmt. (2012). “The overall purpose of Rule 702 . . . is simply to ensure that a fact-finder is presented with reliable and relevant evidence, not flawless evidence.” *State v. Langill*, 945 A.2d 1, 10 (N.H. 2008). Rule 702(d) “must be interpreted and applied with some flexibility to encompass the multitude of scenarios that may be presented and to maintain the division in function between the fact-finder and gatekeeper.” *Id.*

¶15 Errors in the application of a generally reliable methodology, therefore, should not serve to exclude evidence unless they are so serious as to render the results themselves unreliable. *See id.* (“[I]t would be unreasonable to interpret [Rule 702(d)] as requiring that a single flaw or even multiple flaws in an expert’s application of a particular methodology in all instances renders inadmissible the expert’s entire testimony.”). With respect to test results, for example, the omission of a step necessary to obtain valid results or a procedural misstep that plausibly could skew the outcome might justify excluding the results and any opinion based on them.

¶16 Several courts have attempted to describe the point at which errors in application warrant the exclusion of expert testimony. The Third Circuit held that a trial judge “should only exclude evidence if the flaw is large enough that the expert lacks ‘good grounds’ for his or her conclusions.” *In re Paoli R.R. Yard PCB Litig. (Paoli)*, 35 F.3d 717, 746 (3d Cir. 1994). In the Eighth Circuit, “[a]n alleged error in the application of a reliable methodology should provide the basis for exclusion of the opinion only if that error negates the basis for the reliability of the principle itself.” *United States v. Martinez*, 3 F.3d 1191, 1198 (8th Cir. 1993); *see also United States v. Gipson*, 383 F.3d 689, 697 (8th Cir. 2004) (“[O]utright exclusion of the evidence in question is warranted only if the methodology was so altered by a deficient application as to skew the methodology itself.”). Although worded somewhat differently, the Eighth Circuit’s test is essentially the same as the Third Circuit’s. *See McCluskey*, 954 F. Supp. 2d at 1249.

¶17 We agree with this approach and that stated by the New Hampshire Supreme Court: alleged flaws in the application of a reliable methodology should not result in exclusion of evidence unless they “so infect[ ] the procedure as to make the results unreliable.” *Langill*, 945 A.2d

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at 10 (quoting *Martinez*, 3 F.3d at 1198); cf. Fed. R. Evid. 702 Advisory Comm. Notes (2000) (noting that changing or misapplying a reliable methodology so that analysis is unreliable will render expert testimony inadmissible (citing *Paoli*, 35 F.3d at 745)).

¶18 Whether errors in application render evidence unreliable will not always be clear. In close cases, the trial court should allow the jury to exercise its fact-finding function, for it is the jury's exclusive province to assess the weight and credibility of evidence. *State v. Clemons*, 110 Ariz. 555, 556 - 57, 521 P.2d 987, 988 - 89 (1974). "[A]s long as an expert's scientific testimony rests upon good grounds, . . . it should be tested by the adversary process—competing expert testimony and active cross-examination—rather than excluded from jurors' scrutiny for fear that they will not grasp its complexities or satisfactorily weigh its inadequacies." *Langill*, 945 A.2d at 11 (quoting *United States v. Vargas*, 471 F.3d 255, 265 (1st Cir. 2006)).

III.

¶19 The parties do not dispute that gas chromatography is a reliable methodology for determining BAC and that expert testimony on that topic is relevant and helpful, so the State has met its burden as to Rule 702(a) through (c). Relying on Rule 702(d), defendants argue that their BAC results must be excluded because the instrument's faults establish that the methodology was not reliably applied. The trial court properly considered defendants' challenges as part of its gatekeeping inquiry. But the court applied the wrong legal standard under Rule 702(d) and thereby abused its discretion in excluding the evidence. See *Twin City Fire Ins. Co.*, 204 Ariz. at 254 ¶ 10, 63 P.3d at 285.

¶20 The trial court observed that "[i]nherent in the concept of reliability is confidence," and that the emails among SCL staff expressing concern about the instrument undermined confidence in its reliability. The emails did not express doubt about the reliability of the results for particular samples, but instead related concerns that the data drops remained unresolved and might become subject to legal challenge. The trial court misapplied Rule 702(d) by concluding that the staff's general concerns established that the instrument's methodology had not been reliably applied with respect to the particular BAC results at issue.

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¶21 The trial court also explained its ruling by noting the data drops, the mislabeling, and the laboratory's failure to remove the instrument from service. But the fact that the instrument here sometimes failed to produce a reading does not itself imply that the results it did generate were inaccurate. (A different conclusion would result if an instrument did not accurately measure a known standard or failed to produce consistent results for replicate samples within a required range.) And the State presented evidence that incidents of mislabeling could readily be corrected based on the printing sequence, and no evidence suggests that the defendants' samples were misidentified. The record does not show that the identified errors rendered the results of the defendants' tests unreliable; instead, as the trial court acknowledged, the State presented evidence supporting the accuracy of those results. As to the defendants' results, the State met its burden under Rule 702(d) of showing that gas chromatography had been reliably applied to analyze BAC.

¶22 This is not to say that the malfunctions or the lab's failure to resolve them are irrelevant. The jury may consider the instrument's malfunctioning and the laboratory staff's related concerns when assessing the weight or credibility of the test results. This conclusion recognizes that "[c]ross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence." Ariz. R. Evid. 702 cmt. (2012).

IV.

¶23 We vacate the trial court's order excluding evidence of the BAC results, vacate ¶¶ 19 - 28 of the court of appeals' opinion, and remand the case to the trial court for further proceedings.