

[J-92A-2019, J-92B-2019, J-92C-2019, J-92D-2019 and J-92E-2019]
[MO: Donohue, J.]

**IN THE SUPREME COURT OF PENNSYLVANIA
WESTERN DISTRICT**

RICHARD THOMAS WALSH, EXECUTOR : No. 14 WAP 2019
OF THE ESTATE OF THOMAS J. WALSH, :
DECEASED : Appeal from the Order of the
 : Superior Court entered June 20,
 : 2018 at No. 1661 WDA 2016
v. : vacating the Order of the Court of
 : Common Pleas of Allegheny County
 : entered October 14, 2016 at No. GD
BASF CORPORATION; BAYER : 10-018588, and remanding.

V.

BASF CORPORATION;
CORPORATION D/B/A
CROPSCIENCE, L.P., AND BAYER : 10-018588, and remanding.
BAYER :
BAYER : ARGUED: October 16, 2019

BASF CORPORATION; BAYER :
CORPORATION D/B/A BAYER :
CROPSCIENCE, L.P., AND BAYER :
CROPSCIENCE HOLDING, INC., AND/OR :
BAYER CROPSCIENCE, L.P. AND BAYER :
CROPSCIENCE HOLDING, INC., IN THEIR :
OWN RIGHT; BIOSAFE SYSTEMS, L.L.C.; :
CHEMTURA CORPORATION; CLEARY :
CHEMICAL CORP.; DOW :
AGROSCIENCES, L.L.C.; E.H. GRIFFITH, :
INC.; E.I. DU PONT DE NEMOURS AND :
CO., INC.; G.B. BIOSCIENCES :
CORPORATION; JOHN DEERE :
LANDSCAPING, INC., SUCCESSOR TO :
LESCO, INC.; MONSANTO COMPANY; :
NUFARM AMERICAS, INC.; REGAL :
CHEMICAL CO.; SCOTTS-SIERRA CROP :
PROTECTION CO.; AND SYNGENTA :
CROP PROTECTION, INC.

APPEAL OF: DOW AGROSCIENCES, :
L.L.C., BAYER CROPSCIENCE, L.P., :
BAYER CORPORATION, AND BAYER :
CROPSCIENCE HOLDING. INC. :

RICHARD THOMAS WALSH, EXECUTOR : No. 15 WAP 2019
OF THE ESTATE OF THOMAS J. WALSH, :
DECEASED : Appeal from the Order of the
: Superior Court entered June 20,
: 2018 at No. 1661 WDA 2016.

<p>v.</p> <p>BASF CORPORATION; BAYER CORPORATION D/B/A BAYER CROPSCIENCE, L.P., AND BAYER CROPSCIENCE HOLDING, INC., AND/OR BAYER CROPSCIENCE, L.P. AND BAYER CROPSCIENCE HOLDING, INC., IN THEIR OWN RIGHT; BIOSAFE SYSTEMS, L.L.C.; CHEMTURA CORPORATION; CLEARY CHEMICAL CORP.; DOW AGROSCIENCES, L.L.C.; E.H. GRIFFITH, INC.; E.I. DU PONT DE NEMOURS AND CO., INC.; G.B. BIOSCIENCES CORPORATION; JOHN DEERE LANDSCAPING, INC., SUCCESSOR TO LESCO, INC.; MONSANTO COMPANY; NUFARM AMERICAS, INC.; REGAL CHEMICAL CO.; SCOTTS-SIERRA CROP PROTECTION CO.; AND SYNGENTA CROP PROTECTION, INC.</p>	<p>: vacating the Order of the Court of Common Pleas of Allegheny County entered October 14, 2016 at No. GD 10-018588, and remanding.</p> <p>: ARGUED: October 16, 2019</p>
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APPEAL OF: DEERE & COMPANY

<p>RICHARD THOMAS WALSH, EXECUTOR OF THE ESTATE OF THOMAS J. WALSH, DECEASED</p>	<p>: No. 16 WAP 2019</p> <p>: Appeal from the Order of the Superior Court entered June 20, 2018 at No. 1661 WDA 2016,</p>
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<p>v.</p> <p>BASF CORPORATION; BAYER CORPORATION D/B/A BAYER CROPSCIENCE, L.P., AND BAYER CROPSCIENCE HOLDING, INC., AND/OR BAYER CROPSCIENCE, L.P. AND BAYER CROPSCIENCE HOLDING, INC., IN THEIR OWN RIGHT; BIOSAFE SYSTEMS, L.L.C.; CHEMTURA CORPORATION; CLEARY CHEMICAL CORP.; DOW AGROSCIENCES, L.L.C.; E.H. GRIFFITH, INC.; E.I. DU PONT DE NEMOURS AND CO., INC.; G.B. BIOSCIENCES</p>	<p>: vacating the Order of the Court of Common Pleas of Allegheny County entered October 14, 2016 at No. GD 10-018588, and remanding.</p> <p>: ARGUED: October 16, 2019</p>
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CORPORATION; JOHN DEERE :
LANDSCAPING, INC., SUCCESSOR TO :
LESCO, INC.; MONSANTO COMPANY; :
NUFARM AMERICAS, INC.; REGAL :
CHEMICAL CO.; SCOTTS-SIERRA CROP :
PROTECTION CO.; AND SYNGENTA :
CROP PROTECTION, INC. :

APPEAL OF: SYNGENTA CROP :
PROTECTION, INC. :

RICHARD THOMAS WALSH, EXECUTOR :
OF THE ESTATE OF THOMAS J. WALSH, :
DECEASED :

v. :

BASF CORPORATION; BAYER :
CORPORATION D/B/A BAYER :
CROPSCIENCE, L.P., AND BAYER :
CROPSCIENCE HOLDING, INC., AND/OR :
BAYER CROPSCIENCE, L.P. AND BAYER :
CROPSCIENCE HOLDING, INC., IN THEIR :
OWN RIGHT; BIOSAFE SYSTEMS, L.L.C.; :
CHEMTURA CORPORATION; CLEARY :
CHEMICAL CORP.; DOW :
AGROSCIENCES, L.L.C.; E.H. GRIFFITH, :
INC.; E.I. DU PONT DE NEMOURS AND :
CO., INC.; G.B. BIOSCIENCES :
CORPORATION; JOHN DEERE :
LANDSCAPING, INC., SUCCESSOR TO :
LESCO, INC.; MONSANTO COMPANY; :
NUFARM AMERICAS, INC.; REGAL :
CHEMICAL CO.; SCOTTS-SIERRA CROP :
PROTECTION CO.; AND SYNGENTA :
CROP PROTECTION, INC. :

APPEAL OF: MONSANTO COMPANY :

RICHARD THOMAS WALSH, EXECUTOR :
OF THE ESTATE OF THOMAS J. WALSH, :
DECEASED :

No. 17 WAP 2019

Appeal from the Order of the
Superior Court entered June 20,
2018 at No. 1661 WDA 2016,
vacating the Order of the Court of
Common Pleas of Allegheny County
entered October 14, 2016 at No. GD
10-018588, and remanding.

ARGUED: October 16, 2019

No. 18 WAP 2019

	:	Appeal from the Order of the
	:	Superior Court entered June 20,
	:	2018 at No. 1661 WDA 2016,
	:	vacating the Order of the Court of
	:	Common Pleas of Allegheny County
	:	entered October 14, 2016 at No. GD
	:	10-018588, and remanding.
	:	
	:	ARGUED: October 16, 2019
	:	
v.	:	
BASF CORPORATION;	:	BAYER
CORPORATION D/B/A	:	BAYER
CROPSCIENCE, L.P., AND	:	BAYER
CROPSCIENCE HOLDING, INC., AND/OR	:	
BAYER CROPSCIENCE, L.P. AND BAYER	:	
CROPSCIENCE HOLDING, INC., IN THEIR	:	
OWN RIGHT; BIOSAFE SYSTEMS, L.L.C.;	:	
CHEMTURA CORPORATION; CLEARY	:	
CHEMICAL CORP.;	:	DOW
AGROSCIENCES, L.L.C.; E.H. GRIFFITH,	:	
INC.; E.I. DU PONT DE NEMOURS AND	:	
CO., INC.;	:	G.B. BIOSCIENCES
CORPORATION; JOHN DEERE	:	
LANDSCAPING, INC., SUCCESSOR TO	:	
LESCO, INC.; MONSANTO COMPANY;	:	
NUFARM AMERICAS, INC.; REGAL	:	
CHEMICAL CO.; SCOTTS-SIERRA CROP	:	
PROTECTION CO.; AND SYNGENTA	:	
CROP PROTECTION, INC.	:	
	:	
	:	
	:	
APPEAL OF: BASF CORPORATION	:	

CONCURRING OPINION

JUSTICE WECHT

DECIDED: JULY 21, 2020

The Majority's opinion, which I join, explains well the mischief that arises when trial judges overestimate their role as keepers of the gate through which expert evidence must pass. Pursuant to Pennsylvania's application of the *Frye* standard,¹ a trial court determining whether to admit expert testimony may consider only whether the expert

¹ See *Frye v. United States*, 293 F. 1013 (D.C. 1923).

arrived at his opinion by employing principles and methods “generally accepted” in the relevant community of experts. Conversely, under the *Daubert* standard,² the prevailing rubric in federal courts and in a majority of state courts, the trial court also may consider whether the expert “reliably applied” the methodology in question and whether the opinions and the conclusions that he or she reached are supported by “sufficient facts or data.” See F.R.E. 702(d), (b) (respectively). For nearly thirty years, Pennsylvania has rejected *Daubert*’s broader grant of authority—despite repeated invitations to adopt it.³ In my view, *Frye* continues to present the superior approach. I write separately because I am concerned that this Court’s decision in *Betz v. Pneumo Abex L.L.C.*, 44 A.3d 27 (Pa. 2012), in its reliance upon potentially misleading terminology, so muddled the waters that this Court should stabilize its characterization of the *Frye* standard as distinct from *Daubert*, leaving no unnecessary doubt regarding the limitations upon a trial court’s discretion in assessing the admissibility of expert evidence. Because the lower court and Appellants alike relied upon *Betz*’ problematic terminology, I would take this opportunity to set matters straight.

² See *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579 (1993). *Daubert* is the first in a “trilogy” of cases on the subject, consisting of *Daubert* and the United States Supreme Court’s subsequent decisions in *General Electric Co. v. Joiner*, 522 U.S. 136 (1997), and *Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137 (1999). See generally David E. Bernstein & Jeffrey D. Jackson, *The Daubert Trilogy in the States*, 44 JURIMETRICS. J. 351 (2004).

³ As noted in his Dissenting Opinion, Chief Justice Saylor has in the past suggested some affinity for *Daubert*. See Diss. Op. at 5-6 (citing *Commonwealth v. Smith*, 995 A.2d 1143, 1177 (Pa. 2010) (Saylor, J., concurring and dissenting)). In keeping with that, excepting Pennsylvania cases, virtually every case Chief Justice Saylor cites to support his substantive view in this case comes from a jurisdiction that adheres directly or in practice to the *Daubert* standard.

This Court's preference for the *Frye* test is embodied in Pennsylvania Rule of Evidence 702, which provides:

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 is beyond that possessed by the average lay person; (b) 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; and (c) the expert's methodology is generally accepted in the relevant field.

Pa.R.E. 702. Thus, when a party seeks to introduce an expert's testimony, the trial court must determine whether the principles and methodology employed by the expert in developing his or her opinion are generally accepted in the relevant field.⁴ By doing so, the court "ensures that the proffered evidence results from scientific research which has been conducted in a fashion that is generally recognized as being sound, and is not the fanciful creation[] of a renegade researcher." *Blum ex rel. Blum v. Merrell Dow Pharm., Inc.*, 764 A.2d 1, 9-10 (Pa. 2000) (Cappy, J., dissenting).

Critically, this restriction "applies to an expert's methods, not his conclusions." *Grady v. Frito Lay, Inc.*, 839 A.2d 1038, 1047 (Pa. 2003); *accord* Maj. Op. at 17 ("While the methodologies employed by the expert must be generally accepted, the conclusions reached from those applications need not also be generally accepted."). The *Frye* court itself explained:

Just when a scientific principle or discovery crosses the line between the experimental and demonstrable stages is difficult to define. Somewhere in this twilight zone the evidential force of the principle must be recognized, and while courts will go a long way in admitting expert testimony deduced from a well-recognized scientific principle or discovery, *the thing from which*

⁴ As the Majority observes, the proponent bears the burden of establishing that the proffered testimony satisfies all three prongs of Rule 702. See Maj. Op. at 17 (citing *Grady v. Frito Lay, Inc.*, 839 A.2d 1038, 1045 (Pa. 2003)).

the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs.

Frye, 293 F. at 1014 (emphasis added).

While we can agree with the United States Supreme Court that, in assessing the admissibility of an expert's testimony, a court should not turn a blind eye when an expert connects his method to his conclusion only by the because-I-said-so of his "*ipse dixit*," *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997), the *Frye* standard provides the complementary restriction that the court may not rely upon its own *ex cathedra* appraisal of the expert's methods to exclude such evidence. The balance is struck by requiring the court to rule based solely upon its assessment of the evidence and argument submitted by the parties to establish or contradict such acceptance. See *Grady*, 839 A.2d at 1045 ("[R]equiring judges to pay deference to the conclusions of those who are in the best position to evaluate the merits of scientific theory and technique when ruling on the admissibility of scientific proof, as the *Frye* test requires, is the better way of [e]nsuring that only reliable expert scientific evidence is admitted at trial."). How effectively and convincingly an expert employs a given methodology is a matter for the jury to assess.

Our belief in the importance of the methods/conclusions distinction animates this Court's continued adherence to *Frye*. In a passage often cited by this Court, the United States Court of Appeals for the District of Columbia Circuit explained:

The requirement of general acceptance in the scientific community assures that those most qualified to assess the general validity of a scientific method will have the determinative voice. Additionally, the *Frye* test protects [both parties] by assuring that a minimal reserve of experts exists who can critically examine the validity of a scientific determination in a particular case. Since scientific proof may in some instances assume a posture of mystic infallibility in the eyes of a jury of laymen, the ability to produce rebuttal experts, equally conversant with the mechanics and methods of a particular technique, may prove to be essential.

United States v. Addison, 498 F.2d 741, 744-45 (D.C. Cir. 1974); see *Commonwealth v. Dengler*, 890 A.2d 372, 381 (Pa. 2005) (quoting *Addison*); *Commonwealth v. Topa*, 369 A.2d 1277, 1282 (Pa. 1977) (same).

Simply put, the trial court should ensure that a “renegade researcher” does not appear before the jury robed in the implicit authority of an expertise that his or her methodology calls into question. But once the court determines, with the assistance of the proponent’s proofs and the accounts of fellow experts in the discipline, that the analysis proceeds from generally accepted principles and methods, the court may proceed no further. Questions concerning the quality and persuasiveness of the applications and conclusions must be resolved by the collective judgment of the jury. Aided by the crucible of the parties’ adversarial presentations, the jury is just as capable as the average judge of weighing the parties’ competing accounts, identifying and rejecting particular applications of generally accepted principles and methods that either depart from standard practice in the field or lack a sufficient evidentiary foundation.

Daubert jurisdictions generally grant trial courts substantially broader discretion to stop expert testimony at the courtroom door.⁵ Federal Rule of Evidence 702 provides:

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:

⁵ In the interim between the enactment of Rule 702 in 1975 and the *Daubert* decision in 1993, the advent of toxic tort litigation engendered concerns about the overly permissive admission of what some have called “junk science.” During that spell, courts applied increasingly disparate principles to determine the admissibility of expert evidence. According to one commentator, “[b]y 1993, the year of *Daubert*, ‘the Supreme Court got the message: [s]omething needed to be done.’” Jim Hilbert, *The Disappointing History of Science in the Courtroom: Frye, Daubert, and the Ongoing Crisis of “Junk Science” in Criminal Trials*, 71 OKLA. L. REV. 759, 779 (2019) (quoting Barbara Pfeffer Billauer, *Daubert Debunked: A History of Legal Retrogression and the Need to Reassess “Scientific Admissibility,”* 21 SUFFOLK J. TRIAL & APP. ADVOC. 1, 27 (2015-16)).

- (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;
- (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.

F.R.E. 702. Subparagraphs (b) and (d) have no counterpart in Pennsylvania's corresponding rule, and it is there that the "gatekeeping" mandate in its strongest sense lives.⁶

Interestingly, the *Daubert* Court evidently deemed it necessary, or at least beneficial, to address concerns that its interpretation of Rule 702 would *loosen* the standard for admissibility relative to the *Frye* test, rather than empowering judges to guard the courtroom more stringently than *Frye* allowed. Thus, while it underscored the Federal Rules' of Evidence "approach of relaxing the traditional barriers to 'opinion' testimony," and emphatically disagreed that Rule 702 implicitly preserved *Frye*'s "austere" general acceptance requirement, the Court commented that *Frye*'s displacement "[did] not mean . . . that the Rules themselves place no limits on the admissibility of purportedly scientific evidence." *Daubert*, 509 U.S. at 588-89.

In keeping with this expectation, in a passage I embrace even though I reject the rule it was formulated to support, the *Daubert* Court persuasively explained why courts should apply a more permissive rather than unduly strict standard. In rejecting concerns that abandoning the "general acceptance" criterion as such would leave "befuddled

⁶ The Court observed that Rule 702 "displaced" the *Frye* test. *Daubert*, 509 U.S. at 589; *accord Joiner*, 522 U.S. at 142.

juries . . . confounded by absurd and irrational pseudoscientific assertions,” the *Daubert* Court deemed the argument “overly pessimistic about the capabilities of the jury and of the adversary system generally. Vigorous cross-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.” *Daubert*, 509 U.S. at 595-96.

Even several years later, the *Joiner* Court professed to believe that the *Daubert* standard was more permissive in favor of the admission of expert evidence than the *Frye* standard. See *Joiner*, 522 U.S. at 142 (“[W]hile the Federal Rules of Evidence allow district courts to admit a somewhat broader range of scientific testimony than would have been admissible under *Frye*, they leave in place the ‘gatekeeper’ role of the trial judge in screening such evidence.”⁷). But in dismissing the *Frye*-based argument that the court may consider only the general acceptance of methods while avoiding the reasoning overlain upon that methodological foundation, the Court ensured otherwise, explaining:

[C]onclusions and methodology are not entirely distinct from one another. Trained experts commonly extrapolate from existing data. But nothing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert. A court may conclude that there is simply too great an analytical gap between the data and the opinion proffered.

⁷ The Majority and Chief Justice Saylor disagree over the pertinence of the “gatekeeping” terminology endemic to the law concerning the admissibility of evidence in both *Frye* and *Daubert* jurisdictions. Compare Maj. Op. at 20 (“Whether we refer to the role of the trial court in a *Frye* contest as that of a “gatekeeper” is not consequential.”), with Diss. Op. at 5 (noting that gatekeeping “is the clear purport of most of this Court’s decisions on the subject”). As the quotation from *Joiner* makes clear, the gatekeeper terminology is a commonplace in both *Frye* and *Daubert* case law. Moreover, it is not inapt to say that the trial court acts as a gatekeeper in determining the admissibility of evidence generally. Nonetheless, I generally avoid the gatekeeper terminology, because at least colloquially it suggests a more jealously guarded portal than the *Frye* test calls for.

Id. at 146.

Daubert's and *Joiner's* protestations soon proved unwarranted. As Professor Bernstein observed less than a decade after the decision issued, “*Daubert*, particularly as extended by *Joiner* and *Kumho Tire*,^[8] ha[d] become a far broader and stricter test than *Frye* ever was.” David E. Bernstein, *Frye, Frye, Again: The Past, Present, and Future of the General Acceptance Test*, 41 JURIMETRICS. J. 385, 404 (2001) (hereinafter “*Frye, Frye, Again*”); *cf.* Hilbert, *supra* n.5, at 791-92 (noting continuing dispute about whether *Daubert* in fact increased the frequency with which expert evidence was excluded in federal courts).

To some extent, the tension between the Court’s stated impression that *Frye* was more stringent than *Daubert* and the fact that *Daubert* emerged as the stricter test of the two may be explained by differences in the forms each takes in various jurisdictions. Merely citing *Frye* or *Daubert* as the governing standard furnishes no assurance of consistency of application. See generally *Frye, Frye, Again*, 41 JURIMETRICS. J. at 397-98 (observing that *Frye* jurisdictions were ruling inconsistently on the question of whether a court may only examine methodology for general acceptance or also consider the relative acceptance of the expert’s conclusions). More recently, one commentator counted twenty-five states that have a rule of evidence that mirrors Federal Rule 702 and purport to follow *Daubert*, fifteen states that apply *Frye* in more or less its original form, another half-dozen states that do not reject *Frye* outright but apply *Daubert* factors in

⁸ See *Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137 (1999). The Court in *Kumho Tire* extended application of the *Daubert* test to all expert testimony, not just “scientific” testimony. See *id.* at 141.

practice, and four states that follow a test somewhat of their own devising. See Samuel D. Hatch, *Where Are the Gatekeepers? Challenging Utah's Threshold Standard for Admissibility of Expert Witness Testimony*, 2018 UTAH L. REV. 1123, 1140 (2018). And as far back as 2001, Professor Bernstein observed what he identified as a convergence in practice of the *Frye* and *Daubert* tests. See Frye, Frye, *Again*, 41 JURIMETRICS J. at 385.

Regardless, in my view what the *Daubert* Court characterized as *Frye*'s "austerity" manifests in Pennsylvania practice not in an overly exclusionary effect, but rather in its assurance that the trial court does not adopt too expansive a view of its important but limited role in ensuring that only qualified expert evidence reaches a jury. And it should surprise no one that a test that asks only whether a given "expert's methodology is generally accepted in the relevant field," Pa.R.E. 702(c), will result in the admission of more evidence than one that requires the court to assess whether the expert's "principles and methods" are "reliable" (a criterion I read as similar in practice to general acceptance), *and* determine for itself whether the "testimony is based on sufficient facts or data," *and* assess whether "the expert has reliably *applied* the principles and methods to the facts." F.R.E. 702 (emphasis added).

As though that were not enough, the *Daubert* Court cited four additional considerations as relevant: (1) whether the theory or technique at issue "can be (and has been) tested"; (2) "whether the theory or technique has been subjected to peer review and publication"; (3) "in the case of a particular scientific technique, . . . the known or potential rate of error . . . and the existence and maintenance of standards controlling the technique's operation"; and (4) "general acceptance," because "[w]idespread acceptance can be an important factor in ruling particular evidence admissible, and a known

technique which has been able to attract only minimal support within the community may properly be viewed with skepticism.” *Daubert*, 509 U.S. at 593-94 (cleaned up). In theory, each factor presents a distinct basis for exclusion, and thus each factor, too, exponentially increases the likelihood of inconsistent application.⁹

With thirty or more states applying *Daubert*, Pennsylvania remains a *Frye* stalwart.

In *Grady*, we expressed clearly why we prefer *Frye*:

One of the primary reasons we embraced the *Frye* test in *Topa* was its assurance that judges would be guided by scientists when assessing the reliability of a scientific method. Given the ever-increasing complexity of scientific advances, this assurance is at least as compelling today as it was in 1977, when we decided that case. We believe now, as we did then, that requiring judges to pay deference to the conclusions of those who are in the best position to evaluate the merits of scientific theory and technique when ruling on the admissibility of scientific proof, as the *Frye* rule requires, is the better way of [e]nsuring that only reliable expert scientific evidence is admitted at trial.

We also believe that the *Frye* test, which is premised on a rule—that of “general acceptance”—is more likely to yield uniform, objective, and predictable results among the courts, than is the application of the *Daubert* standard, which calls for a balancing of several factors. Moreover, the decisions of individual judges, whose backgrounds in science may vary widely, will be similarly guided by the consensus that exists in the scientific community on such matters.

⁹ Later, the Court observed:

[W]e can neither rule out, nor rule in, for all cases and for all time the applicability of the factors mentioned in *Daubert*, nor can we now do so for subsets of cases categorized by category of expert or by kind of evidence. Too much depends upon the particular circumstances of the particular case at issue.

Kumho Tire, 526 U.S. at 150; see *id.* at 151 (“[*Daubert*] made clear that its list of factors was meant to be helpful, not definitive.”). Highlighting just one potential concern, Professor Hilbert notes “profound disparities in how *Daubert* has been applied, both between civil and criminal contexts, and between parties in each context,” including “a double standard” favoring respectively civil defendants and prosecutors. See Hilbert, *supra* n.5, at 796.

Grady, 839 A.2d at 1044-45.

In *Betz*, however, our fidelity to these principles was undermined in a subtle but potentially important manner. Specifically, *Betz* introduced into Pennsylvania law a “conventionality” requirement, suggesting that expert testimony in a scientific discipline is admissible only when the expert has “applied accepted scientific methodology *in a conventional fashion* in reaching his or her conclusions.” *Betz*, 44 A.3d at 53 (emphasis added). This conventional application requirement, however, cannot be found in *Topa*, *Grady*, or the Pennsylvania *Frye* cases that followed, and it sounds very much like Federal Rule 702’s direction that the court assess whether “the expert has *reliably applied* the principles and methods to the facts of the case.” F.R.E. 702(d) (emphasis added). This at least gestures toward the more probing, credibility-inflected *Daubert* inquiry, which we squarely rejected in *Grady*. I fear that *Betz*’ conventional application overlay purports or operates to require a court to assess something beyond the general acceptance of a given expert’s methods.

I can find in Pennsylvania law no pre-*Betz* source for the conventional application formulation. But this Court has recycled *Betz*’ language on numerous occasions since then. See *Mitchell v. Shikora*, 209 A.3d 307, 319 n.12 (Pa. 2019); *Commonwealth v. Jacoby*, 170 A.3d 1065, 1090-91 (Pa. 2017)¹⁰; *Commonwealth v. Walker*, 92 A.3d 766, 790 (Pa. 2014); see also *Commonwealth v. Treiber*, 121 A.3d 435, 488 (Pa. 2015)

¹⁰ As my authorship in *Jacoby* attests, I am not blameless in uncritically repeating *Betz*’ formulation.

(Saylor, C.J., dissenting).¹¹ I believe that repeating *Betz*’ *Daubert*-esque language can only erode this Court’s commitment to *Frye*’s narrow focus upon the expert’s underlying principles and methodology.¹²

¹¹ The Superior Court has followed our lead in precedential opinions, including in this case, see *Walsh v. BASF Corp.*, 191 A.3d 838, 844 (Pa. Super. 2018); *Commonwealth v. Nevels*, 203 A.3d 229, 237-38 (Pa. Super. 2019); *Commonwealth v. Freeman*, 128 A.3d 1231, 1246 (Pa. Super. 2015), and in several non-precedential memoranda.

¹² Chief Justice Saylor is correct that in *Betz*, as in this Court’s cases that have quoted its formulation since, the conventional application terminology was used narrowly as a basis to identify novel science for purposes of determining whether to conduct a *Frye* inquiry in the first instance. But I disagree that *Daubert*-esque terminology presents no risk of “confusi[on], at all.” Diss. Op. at 15. To confirm that the Chief Justice’s optimism is misplaced, one need look no further than the sentence that introduces Appellants’ brief in this case: “Recognizing that any causation opinion must be premised on a generally accepted methodology *applied in a conventional fashion*, [the trial court] excluded Plaintiff’s experts for failing to meet Pennsylvania’s *Frye* standard.” Appellants’ Brief at 1. Appellants later add that “[a]ny methodology, *even if generally accepted*, must be applied ‘in a conventional fashion’ to satisfy *Frye*.” Appellants’ Reply Brief at 12 (quoting *Betz*, 44 A.3d at 53) (emphasis added). These “conventionality” usages do not recognize or embody the Dissent’s proffered limitation, especially given the pervasiveness of their recurrences with and without citation to *Betz*. See, e.g., Appellant’s Brief at 21 (citing *Betz*, incorrectly by the Majority’s lights), 34 (same), 35 (ascribing the conventional application requirement to *Blum*, *supra*); see also Appellants’ Reply Brief at 5, 8 (ascribing the conventional application requirement to *Mitchell*, *supra*). In its published decision, the court below manifested precisely the same confusion. See *Walsh*, 191 A.3d at 844 (“*Frye* requires that a proponent of novel scientific testimony demonstrate that the expert relied upon and conventionally applied a scientific method generally accepted in the relevant scientific community.”).

The notion of bright lines in the *Frye* approach has always been somewhat fanciful. The *Frye* court observed that, “while courts will go a long way in admitting expert testimony deduced from a well-recognized scientific principle or discovery, the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs.” *Frye*, 293 F. at 1014. But reading *Frye* and *Betz* in tandem, to find this enterprise as straightforward as the Dissent suggests it is or should be, we would need to clearly distinguish the “application” of a given principle (relevant to whether to conduct a *Frye* inquiry in the first instance) from the expert’s “deduction” from that principle (relevant to whether the deduction passes *Frye* test), which strikes me as a quixotic aspiration. Courts seeking tidiness and clarity will search the *Frye*/*Daubert* morass in vain; all we can hope to do is avoid excess confusion where possible.

The conventional application requirement encourages litigation tactics familiar to *Daubert* jurisdictions and rewarded by the trial court in this case. In denying the admission of all causation testimony, the trial court all but erased the defining distinction between *Frye* and *Daubert*. Although the trial court did not cite *Betz*' formulation of the *Frye* standard, the court's detailed review of the many studies and sources cited by Nachman Brautbar, M.D., was replete with the court's own disagreements regarding the application of the methods and data delineated in the studies themselves. Nowhere in the court's two supporting opinions did it rely substantially upon the expert evidence that Defendants adduced to challenge the general acceptance of Plaintiff's experts' methods. Thus, we have no reason to believe that the trial court was persuaded by Defendants' *Frye* evidence rather than by its own unbounded frolic through the literature.¹³

¹³ In this regard, the Chief Justice seeks both to validate this aspect of the trial court's approach and to buttress it with a handful of references to Defendants' countervailing *Frye* evidence. See Diss. Op. at 6-14. But the trial court never cited anything but its own independent survey of Plaintiff's expert evidence as a basis for excluding that evidence. This calls into question the degree to which the trial court concerned itself with the competing evidentiary showings on general acceptance, and it is not an appellate court's function to fill that critical void in the trial court's account of its own reasoning. Furthermore, I disagree with the Dissent's suggestion that constraining the court to consider only the parties' competing presentations regarding general acceptance "imposes an unreasonable constraint on the trial courts' ability to perform the essential review for reliability." *Id.* at 11. The very invocation of a trial court assessment of "reliability" hearkens back to the Federal Rule and *Daubert* considerations, and what concerns me is precisely the risk of that sort of *Daubert*-ization of our *Frye* standard. Nothing about our law to date precludes a trial court from looking to the documentation submitted in support of a given scientific method. But the court's review must be channeled by the adversarial presentations of the parties' *Frye* experts, not limited only by the scope of the trial court's intellectual ambition and willingness to pursue the matter independently.

To the extent that the trial court acknowledged the methods/application argument at all, it did so only by dispatching a strawman. The court unfairly reduced Plaintiff's position to the proposition that the mere introduction of any literature, no matter how inapt, takes the admissibility determination from the court's hands. According to the trial court's account of Plaintiff's argument, "Dr. Brautbar may cite a study regarding traffic patterns in New York City for the proposition that Chemical A causes [disease] in humans." Tr. Ct. Supp. Memo., 12/27/2016, at 6. But the specter of a court powerless to exclude evidence once any literature is introduced, however irrelevant, is absurd on its face; one need not plumb the depths of that literature to discern patent irrelevance. Indeed, if such irrelevance were at issue here, the trial court's opinion would not be so voluminous in characterizing and parsing and finding wanting or inapplicable Dr. Brautbar's supporting materials.¹⁴

Some of our Commonwealth's fine trial judges may well have the wisdom of Solomon; certainly we aspire. But even Solomon did not have a medical degree or a

¹⁴ The Chief Justice pummels the same strawman when he presents the false choice between "permitting trial courts to consider whether experts actually adhere to the methodology that they only facially espouse" or "accept[ing] the sort of expert self-validation which is of great concern to most courts." Diss. Op. at 18. By no means do I believe, nor would I hold, that a court cannot identify and discard inferences and conclusions wholly divorced from their purported basis. Rather, I merely underscore the proposition, long-embraced by this Court, that trial courts should exercise considerable restraint in doing so. They do so foremost by focusing upon the *Frye* evidence adduced by the parties rather than deputizing themselves—as the trial court did in this case—to do the sort of *sua sponte* deep dive into the literature that the trial court performed in this case. Cf. Maj. Op. at 20-21 ("The trial court may consider only whether the expert applied methodologies generally accepted in the relevant field, and may not go further to attempt to determine whether it agrees with the expert's application of those methodologies or whether the expert's conclusions have sufficient factual support. Those are questions for the jury to decide." (footnote omitted)). Trial courts further advance this principle in close cases by erring in favor of admitting the contested evidence.

doctorate, and wisdom is no substitute for subject matter expertise. A trial court should not deny a litigant the benefit of a chosen expert because, after the court's unilateral and "intensely granular" screening, see Maj. Op. at 24 n.9, something about the sources upon which the expert relies triggers the court's doubt. Our judges are appointed or elected from the ranks of lawyers whose knowledge and experience span the gamut of legal specialties, but seldom involve ever-increasingly esoteric areas of technical and scientific inquiry. In our adversarial system, judges are generalists, whom we ask to manage, but not to drive, jury trials. In France's inquisitorial system, jurists are selected to undergo a rigorous, multi-year training program, culminating for some in the completion of a thirty-one-month course of study in legal topics as well as sociology, psychology, psychiatry, forensic science, pathology, and accounting, which is in keeping with the greater degree to which French judges actively participate in the truth-determining process.¹⁵ But this is not France.

Our necessary reliance upon judges who lack the expertise to determine what evidence should reach a jury creates certain risks that are exacerbated by the *Daubert* standard. Thus, commentators have expressed reservations about jurists' ability to apply *Daubert* consistently, noting, for example, that "*Daubert* places a greater epistemic burden [than *Frye*] on judges tasked with determining the reliability of proposed expert testimony." James R. Dillon, *Expertise on Trial*, 19 COLUM. SCI. & TECH. L. REV. 247, 262

¹⁵ See Kelly Buchanan, *The French National School for the Judiciary*, IN CUSTODIA LEGIS: LAW LIBRARIANS OF CONGRESS (Jan. 26, 2011), <https://blogs.loc.gov/law/2011/01/the-french-national-school-for-the-judiciary/>.

(2018). Indeed, Prof. Steiner-Dillon¹⁶ submits “that judges generally cannot apply the *Daubert* test with a level of competence necessary to satisfy intellectual due process.” *Id.* at 272. By contrast, “[t]he *Frye* test delegates the question of reliability to a community of recognized experts. The court’s task consists only in identifying the relevant community and determining whether it generally accepts the methodology at issue.” *Id.* at 260.¹⁷ Anticipating this concern, Chief Justice Rehnquist commented in *Daubert*: “I do

¹⁶ A doctoral candidate when he published the cited article, Prof. Steiner-Dillon, née Dillon, joined the faculty of the University of Dayton School of Law in 2018, the same year the article appeared.

¹⁷ Professor Steiner-Dillon notes that *Frye* is not without its own difficulties:

[T]he knottiest problem posed by *Frye* is the definition of the relevant community: if the reliability inquiry is a matter of nose counting, whose noses are to be counted? This is a problem of great practical import because domains or sub-disciplines often have disciplinary axioms and epistemic norms that lead them to view the reliability of a particular methodology quite differently. Closely related to the problem of identifying the relevant community is the problem of identifying its boundaries. Should the community be defined broadly or narrowly? As Cole and Edmond observe, “[c]ontestation over whether the [reference community] should be construed narrowly or broadly is endemic to a *Frye* analysis. . . . [N]arrow interpretations tend to favor proponents of contested evidence whereas broad interpretations tend to favor opponents and exclusion.”

Dillon, 19 COLUM. SCI. & TECH. L. REV. at 262 (footnotes omitted) (quoting Simon A. Cole & Gary Edmond, *Science without Precedent: The Impact of the National Research Council Report on the Admissibility and Use of Forensic Science Evidence in the United States*, 4 BRIT. J. AM. LEGAL STUD. 586, 606 (2015)).

The Chief Justice observes that Prof. Steiner-Dillon expresses similar concerns regarding the ability of jurors to digest scientific evidence. Diss. Op. at 21. He further notes that Prof. Steiner-Dillon proposes that courts appoint a sort of scientific ombudsman to take on the expert evidence screening function and conduct independent research, measures more consistent with the inquisitorial system noted above than with our adversarial system, flawed though it may be. *Id.* at 22; cf. Gerald Walpin, *America’s Adversarial & Jury Systems: More Likely to Do Justice*, 26 HARV. J. LAW & PUB. POLICY 175, 175-76 (2003) (observing, pace Winston Churchill, that “the adversarial system may be the worst form of judicial procedure except for all others than have been tried from time to time”). But that he identifies similar infirmities in both judges and juries attempting to

not doubt that Rule 702 confides to the judge some gatekeeping responsibility in deciding questions of the admissibility of proffered expert testimony. But I do not think it imposes on them either the obligation or the authority to become amateur scientists in order to perform that role.” *Daubert*, 509 U.S. at 600-01 (Rehnquist, C.J., concurring in part and dissenting in part). In keeping with *Frye*, I would relieve trial courts of the burden of trying.

Betz and this Court’s subsequent, related decision in *Rost v. Ford Motor Co.*, 151 A.3d 1032 (Pa. 2016), are most notable for their contribution to the law governing the use and effect of “any exposure” causation testimony in toxic torts, and with respect to asbestos specifically.¹⁸ In *Betz*, applying the above-reproduced standard, the Court appeared to hold, and unquestionably implied, that when an expert testifies that any exposure to a toxic substance enhances the risk that the exposed party will suffer injury as a consequence of that particular exposure, the expert inadmissibly suggests that the exposure in question, even when *de minimis*, is a substantial cause of the injury. In *Rost*, this Court carefully limited that holding, observing that it applied only where the expert in question rested its opinion regarding substantial causation *entirely* on that *de minimis* exposure in reliance upon the any-exposure theory. Conversely, where an expert testifies to that theory, which is not controversial as a general principle, but also testifies that the plaintiff’s exposure to a given toxic substance was greater than *de minimis* and substantially causative based upon an individualized application of the frequency,

assess the credibility and merit of expert presentations does not detract from my view that, when in doubt, we must trust juries to glean the more convincing expert account through our time-honored adversarial process.

¹⁸ See Diss. Op. at 7-8 n.2 (noting that *Rost* has yet to be applied outside the asbestos context).

regularity, and proximity test,¹⁹ the testimony suffices to create a jury question regarding substantial causation. Thus, *Rost* served as a bulwark against the potential for overbroad application of *Betz*' very narrow ruling. In effect, *Rost* solidified what was best from *Betz* and distanced the Court from an unduly broad understanding of what remained.²⁰

The only distinctive, indeed singular, aspect of *Betz* that remains—the only thing in *Betz* that cannot be conveyed more effectively by citing *Rost*—is the “conventional application” language, which threatens to smuggle *Daubert*'s more expansive ideas about judges' role in determining the admissibility of expert evidence into Pennsylvania law. Among the most worrisome potential effects of *Betz*' conventional application requirement is that it casts into doubt the proponent's ability to bring rigorous scientific innovation to the matter, leaving the law—and more importantly jurors—behind as science passes it by. Thus, our law has retained *Frye*'s focus upon the general acceptance of the theory or technique underlying expert testimony, rather than how or what an expert extrapolates from it, keeping the door open to innovative applications of accepted principles and methodologies.

While the point may seem finely drawn, when we hold the line at conventional application, we suggest that there is no more room for novelty than an expert venturing a

¹⁹ See generally *Gregg v. V-J Auto Parts, Co.*, 943 A.2d 216 (Pa. 2007).

²⁰ I fail to see how anything in this discussion indicates that I view *Rost* as overruling *Betz*, or even deviates much from the Chief Justice's previously-stated view. See Diss. Op. at 18 n.11; cf. *Rost*, 151 A.3d at 1057 (Saylor, C.J., dissenting) (characterizing the Majority as “cabin[ing]” *Betz*). I simply believe that *Betz*' utility is substantially diminished in the wake of *Rost*, which Chief Justice Saylor accurately observes “work[ed] a distinct retrenchment relative to *Betz*.” Diss. Op. at 18, n.11. I further believe that *Betz*' jurisprudential value is substantially undermined by its introduction of the “conventional application” formulation.

novel final opinion or conclusion, and even that only if the expert arrived there using entirely “conventional” means—all as assessed by a judge who, more likely than not, is not conversant enough in the relevant discipline to confidently opine on conventionality at all.²¹ Because I do not agree that it is jurisprudentially sound or consistent with Pennsylvania law to risk usurping the role of the jury by overzealous application of *Betz*’ “conventional application” criterion, I believe that this terminology unnecessarily complicates Pennsylvania’s *Frye* jurisprudence and should be avoided in this and future *Frye* cases.

As the Majority explains, the trial court wandered far afield of interrogating Dr. Brautbar’s methods, clearly rendering its own *sua sponte* judgment with regard to the worth of the studies Dr. Brautbar cited in support of his methods and conclusions, as well as its apparently independent judgments as to abstruse questions concerning the postulates, inferences, and conclusions Dr. Brautbar gleaned from these numerous sources and the record in this case. In doing so, the court did far more than rely solely upon the competing accounts provided by the parties’ experts, and so it exceeded the bounds of its discretion. Accordingly, I join the Majority’s analysis.

²¹ Even the *Kumho Tire* Court recognized a species of this concern, noting that “[i]t might not be surprising in a particular case, for example, that a claim made by a scientific witness has never been the subject of peer review, for the particular application at issue may never previously have interested any scientist.” *Kumho Tire*, 526 U.S. at 151.