

471 Md. 1
Court of Appeals of Maryland.



Stanley ROCHKIND
v.
Starlena STEVENSON



No. 47, Sept. Term, 2019

|
August 28, 2020

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Reconsideration Denied September 25, 2020

Synopsis

Background: Former occupant of residence brought action against landlord for negligence and violations of the Consumer Protection Act arising out of her exposure to lead-based paint when she was child. After jury returned verdict in favor of former occupant, the Circuit Court, Baltimore City, No. 24-C-11-008722, Steven Sfekas, J., granted landlord's motion for new trial in part, and subsequent jury trial on damages, Pamela White, J., resulted in a \$1,103,000 judgment for former occupant. Landlord appealed and former occupant cross-appealed. The Court of Special Appeals,  229 Md.App. 422, 145 A.3d 570, affirmed. Landlord petitioned for certiorari, which was granted. The Court of Appeals,  454 Md. 277, reversed and remanded. On remand, the Circuit Court, Barry G. Williams, J., denied landlord's motion for new trial and judgment notwithstanding the verdict but reduced damages pursuant to statutory cap after jury awarded former occupant \$1 million in economic damages and \$2 million in non-economic damages. Former occupant filed petition for writ of certiorari and landlord filed cross-petition, which were granted.

[Holding:] The Court of Appeals, Getty, J., held that pretrial hearing under principles set forth under  *Daubert* was required for court to consider whether expert used reliable methodology in forming her causation opinion; overruling  *Reed v. State*, 283 Md. 374, 382, 391 A.2d 364.

Reversed and remanded.

Watts, J., filed dissenting opinion, in which Hotten, J., and Greene, J., joined.

Procedural Posture(s): Petition for Writ of Certiorari; Motion for New Trial; Motion for Judgment Notwithstanding the Verdict (JNOV).


West Headnotes (11)

[1] **Appeal and Error**  Admission or exclusion of evidence

Evidence  Discretion of court in general

The admissibility of expert testimony is a matter largely within the discretion of the trial court, and its action in admitting or excluding such testimony will seldom constitute ground for reversal. *Md. Rule 5-702*.

4 Cases that cite this headnote


[2] **Appeal and Error**  Expert Evidence and Witnesses

Appeal and Error  Admission or exclusion of evidence

When the basis of an expert's opinion is challenged, the review is for abuse of discretion; however, such a ruling may be reversed on appeal if it is founded on an error of law or some serious mistake, or if the trial court clearly abused its discretion. *Md. Rule 5-702*.

1 Cases that cite this headnote

[3] **Appeal and Error**  Abuse of discretion



Appeal and Error  Construction, Interpretation, or Application of Law

A decision within the discretion of the trial court will not be affirmed if the judge acts in an arbitrary or capricious manner or beyond the letter or reason of the law.


[4] **Evidence**  Presumptions, Burden, and Degree of Proof

A trial court considering the admissibility of expert testimony may take judicial notice when a scientific method is broadly and generally accepted. *Md. Rule 5-702*.


5 Cases that cite this headnote

- [5] **Evidence** 🔑 Products liability in general
Evidence 🔑 Medical and Health-Related Experiments, Tests, and Studies
 Pretrial hearing under principles set forth under  *Daubert* was required for court to consider whether expert used reliable methodology in forming her causation opinion, in action that had been brought by former occupant of residence against landlord alleging negligence and violations of Consumer Protection Act arising out of her exposure to lead-based paint when she was child; overruling  *Reed v. State*, 283 Md. 374, 382, 391 A.2d 364. Md. Rule 5-702.

1 Cases that cite this headnote

- [6] **Courts** 🔑 Previous Decisions as Controlling or as Precedents
 The stare decisis doctrine, which means standing by things that are decided, ordinarily requires that a court follow earlier judicial decisions when the same points arise again in litigation.
- [7] **Evidence** 🔑 General acceptance
 General acceptance is an important consideration in the reliability analysis, but it is not the sole consideration when analyzing the admissibility of expert testimony. Md. Rule 5-702.
- [8] **Evidence** 🔑 Methodology and reasoning; scientific validity
 Under  *Daubert*, trial judges are not required to make a determination of the ultimate scientific validity of any scientific propositions; instead, they need only make a much more limited inquiry of whether sufficient indicia of legitimacy exist to support the conclusion that evidence derived from the principle may be profitably considered by a fact finder at trial. Md. Rule 5-702.

- [9] **Evidence** 🔑 Daubert and Frye tests as to reliability in general

All of the  *Daubert* factors are relevant to determining the reliability of expert testimony, yet no single factor is dispositive in the analysis; a trial court may apply some, all, or none of the factors depending on the particular expert testimony at issue. Md. Rule 5-702.

7 Cases that cite this headnote

- [10] **Appeal and Error** 🔑 Expert Evidence and Witnesses

Admission of expert testimony is reviewed under the abuse of discretion standard. Md. Rule 5-702.

3 Cases that cite this headnote

- [11] **Evidence** 🔑 Means of attacking expert

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. Md. Rule 5-702.

1 Cases that cite this headnote

**632 Circuit Court for Baltimore City, Case No. 24-C-11-008722, [Barry G. Williams](#), Judge.

Attorneys and Law Firms

Argued by [Thomas J. Cullen, Jr.](#) (Constantine J. Themelis and [Derek M. Stikeleather](#), Goodell, Devries, Leech & Dann, LLP, Baltimore, Md; [Ronald D. Getchey](#) and [Charles Danaher](#), Sheppard Mullin Richter & Hampton, LLP, San Diego, CA) on brief, for Appellant.

Argued by [Scott E. Nevin](#) (The Law Offices of Peter T. Nicholl, Baltimore, MD) and [Suzanne C. Shapiro](#) (Suzanne C. Shapiro Law, LLC, Baltimore, MD) on brief, for Appellee.

Amici Curiae Medical Mutual Liability Society of Maryland, and Medchi, the Maryland State Medical Society in Support of Appellant, [Stanley Rochkind](#): [Mitchell Mirviss](#), Esquire,

Venable LLP, 750 East Pratt Street, Suite 900, Baltimore, MD 21202.

Amicus Curiae Maryland Association for Justice in Support of Appellee: [Michael J. Winkelman](#), Esquire, McCarthy, Winkelman & Mester, L.L.P., 4300 Forbes Boulevard, Suite 205, Lanham, MD 20706 and [Ned Miltenberg](#), Esquire, Managing Partner, National Legal Scholars Law Firm, P.C., 5410 Mohican Road, Suite 200, Bethesda, MD 20816.

Argued before: McDonald, Watts, Hotten, Getty, Booth, Biran, Clayton Greene, Jr. (Senior Judge, Specially Assigned), JJ.

Opinion

Getty, J.

*4 Nearly a century ago, the United States Court of Appeals for the District of Columbia announced a new evidentiary standard by which the admissibility of expert testimony rooted in a novel scientific principle or discovery turned on the “general acceptance” of such evidence “in the particular field in which it belongs.” [Frye v. United States](#), 293 F. 1013, 1014 (D.C. Cir. 1923). In the ensuing fifty years, “almost all of the courts in the country” that considered “the admissibility of scientific evidence” adopted the rationale set out in [Frye](#), including this Court in 1978. [Reed v. State](#), 283 Md. 374, 382, 391 A.2d 364 (1978). Hence, after noting the majority of courts were in agreement that “‘general acceptance’ in the [relevant] scientific community ha[d] come to be the standard,” [Frye-Reed](#) was born in Maryland; as we put it, “before a scientific opinion will be received as evidence at trial, the basis of that opinion must be shown to be generally accepted as reliable within the expert’s” relevant scientific community. [Id.](#) at 381, 391 A.2d 364.

*5 In [Daubert v. Merrell Dow Pharmaceuticals, Inc.](#), 509 U.S. 579, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993), the Supreme Court of the United States upset the applecart of the admissibility of expert scientific testimony. There, the Supreme Court **633 held that [Federal Rule of Evidence \(“FRE”\) 702](#) superseded [Frye](#)’s general acceptance test. In place of [Frye](#), the Supreme Court provided a list of flexible factors to help courts determine the reliability of expert testimony. A supermajority of states followed the

Supreme Court’s lead and replaced their respective [Frye](#) standards with [Daubert](#). Maryland, however, did not.

In the forty years that followed [Reed](#), Maryland experienced a jurisprudential drift: the [Frye-Reed](#) standard announced in 1978 slowly morphed into a “[Frye-Reed Plus](#)” standard, implicitly and explicitly relying on and adopting several [Daubert](#) principles. For this reason, Appellant/Cross-Petitioner Stanley Rochkind now squarely poses this question: Should the Court adopt the standard for admitting expert testimony under [Daubert v. Merrell Dow Pharmaceuticals, Inc.](#)? This time, for reasons more fully explained below, we answer this question in the affirmative and choose to adopt [Daubert](#) as the governing standard by which trial courts admit or exclude expert testimony.

BACKGROUND

*A. Ms. Stevenson’s Lead Paint Exposure and Medical History.*¹


In 1991, a 10-month-old Starlena Stevenson and her mother, Charlena Montgomery, moved to 3823 Fairview Avenue (“Fairview”), where they lived for 15 months. At the time, Fairview was owned in part by Mr. Rochkind. According to Ms. Montgomery, Fairview contained chipping and flaking paint on the windowsills, floors, and front porch. Blood lead *6 level tests taken while Ms. Stevenson was a resident of Fairview revealed that she had a blood lead level of 13 to 14 micrograms per deciliter—a number that dropped to 11 micrograms per deciliter just two months later when she was no longer a resident of that property.


Ms. Stevenson, now 29 years old, has a family history of learning disabilities and has faced numerous medical, psychological, and socioeconomic obstacles. She was born to a single teenage mother and has no relationship with her father. As a child, she was diagnosed with [Attention Deficit Hyperactivity Disorder](#), commonly referred to as ADHD, and several major psychological disorders including oppositional defiance disorder, [major depressive disorder](#), anxiety disorder, and parent-child relationship disorder. Her psychological problems were so severe that in 2004 she engaged in self-mutilation and attempted suicide.

Since graduating from high school in 2008, Ms. Stevenson has been sporadically employed, working as a patient transporter for the University of Maryland Medical System, a cashier for Royal Farms, and a babysitter. In each case, Ms. Stevenson struggled to stay employed due to her attentional deficits, hyperactivity, and impulsivity—symptoms which she claims resulted from her exposure to lead paint.

B. The First and Second Trials.


In December 2011, Ms. Stevenson filed suit against Mr. Rochkind in the Circuit Court for Baltimore City for negligence and violations of the Maryland Consumer Protection Act. In July 2012, lead testing conducted at Fairview detected lead-based paint on twenty-two interior surfaces and nine exterior surfaces. In preparation for the litigation, Cecilia Hall-Carrington, M.D., a pediatrician, filed a report concluding to “a reasonable degree of medical probability” that Ms. Stevenson was poisoned by lead at Fairview, and that “her ****634 lead poisoning** is a significant contributing factor” to her neuropsychological problems, including her ADHD.


***7** Before trial, Mr. Rochkind filed four motions in limine seeking to exclude Dr. Hall-Carrington's testimony. He argued that she should not be permitted to testify that Fairview was a source of Ms. Stevenson's lead exposure or that such exposure caused Ms. Stevenson's “cognitive deficits,” including, specifically, ADHD. Mr. Rochkind requested a  *Frye-Reed* hearing on each motion. The court denied his requests. After hearing arguments on the motions in limine, the court denied them as well. The jury returned a verdict in favor of Ms. Stevenson, awarding her \$829,000 in economic damages and \$534,000 in noneconomic damages. Mr. Rochkind filed a motion for a new trial, or, in the alternative, remittitur. The court granted his motion in part and ordered a new trial on the issue of damages alone.

The partial new trial began in October 2014. Before trial, Mr. Rochkind renewed his motions in limine to exclude Dr. Hall-Carrington's ADHD testimony, which were again denied. The court declined to hold a  *Frye-Reed* hearing, explaining that Dr. Hall-Carrington's opinions are “not new science” or “new conclusions.” It admitted her testimony under [Maryland Rule 5-702](#) because it found that she drew from “reliable sources.”

At trial, Dr. Hall-Carrington testified as to both general and specific ADHD causation. She explained that studies show that lead exposure can cause “attention problems[] or ADHD” generally. She also opined “within a reasonable degree of medical probability” that lead exposure caused Ms. Stevenson's ADHD specifically. To support her testimony, Dr. Hall-Carrington relied on a publication from the Environmental Protection Agency reviewing the most recent studies on the effects of lead exposure in children, titled “Integrated Science Assessment for Lead” (the “EPA-ISA”).² She testified that the EPA-ISA concluded that there is a causal relationship between ***8** lead exposure and the symptoms of ADHD, such as attention decrements, impulsivity, and hyperactivity. Dr. Hall-Carrington also testified that “some years ago there was a concern with suicide in kids [taking] Adderall.” In closing argument, Ms. Stevenson's counsel implied that Ms. Stevenson's depression and hallucinations were side effects of her ADHD medications, including Adderall.



The jury awarded Ms. Stevenson \$753,000 in economic damages and \$700,000 in noneconomic damages. Due to the statutory cap on noneconomic damages, the court reduced the total judgment to \$1,103,000. Mr. Rochkind filed a motion for a new trial, which the court denied.

On appeal, the Court of Special Appeals held, among other things, that the circuit court did not err in failing to hold a  *Frye-Reed* hearing on Dr. Hall-Carrington's general causation testimony because the studies she relied upon did not reach novel conclusions and “used methodologies that are generally accepted” in the scientific community.

 *Rochkind v. Stevenson*, 229 Md. App. 422, 464, 145 A.3d 570 (2016). The intermediate appellate court also held that the circuit court properly admitted Dr. Hall-Carrington's specific causation testimony under [Rule 5-702](#) because her opinion “was supported by an adequate factual basis and was sufficient to allow the jury to decide the causal connection, if any, between lead exposure and Ms. Stevenson's ADHD.”

 *Id.* at 465, 145 A.3d 570. Mr. Rochkind appealed.

****635 C. Stevenson I.**

In his first appeal to this Court, Mr. Rochkind argued that Dr. Hall-Carrington's testimony should have been excluded because it failed to meet the requirements of both [Rule 5-702](#) and  *Frye-Reed*.  *Rochkind v. Stevenson*, 454

Md. 277, 285, 164 A.3d 254 (2017) (“[Stevenson I](#)”). The Court agreed. Applying a [Rule 5-702](#) analysis, the Court held that “Dr. Hall-Carrington did not provide a sufficient factual foundation for why she thought the EPA-ISA supported her conclusion that lead exposure can cause ADHD.” [Id.](#) at 290, 164 A.3d 254. The *9 Court concluded that because “Dr. Hall-Carrington did not cite to any other studies to support her opinion that lead exposure can cause ADHD,” she “cannot be permitted to testify that such a causal connection exists generally, or that lead exposure caused [Ms.] Stevenson's ADHD specifically.” [Id.](#) at 293–94, 164 A.3d 254 (footnote omitted). In light of its [Rule 5-702](#) conclusion, the Court declined to address Mr. Rochkind's argument that the circuit court should have held a [Frye-Reed](#) hearing on Dr. Hall-Carrington's general causation testimony. [Id.](#) at 295, 164 A.3d 254. Because the Court found that the circuit court abused its discretion in permitting Dr. Hall-Carrington to opine on the effects of lead exposure based on the EPA-ISA, the Court remanded the case to the circuit court for a new trial on the issue of damages. [Id.](#) at 295–96, 164 A.3d 254.

D. The Third and Fourth Trials.

Before the third trial, Mr. Rochkind filed a motion, once again attempting to exclude Dr. Hall-Carrington's specific causation opinions. The circuit court denied the motion and request for a pre-trial [Rule 5-702](#) and/or [Frye-Reed](#) hearing based on its reading of the opinion in [Stevenson I](#). According to the circuit court, so long as Dr. Hall-Carrington did not actually use the word “ADHD,” she could opine that Ms. Stevenson's attentional deficits, hyperactivity, and impulsivity problems were caused by lead exposure.³ Despite the ruling, Dr. Hall-Carrington testified that lead exposure can cause “ADHD,” causing the circuit court to declare a mistrial.

Not to be deterred, in trial number four, Dr. Hall-Carrington testified that lead exposure caused Ms. Stevenson's attentional deficits, hyperactivity, and impulsivity problems, once again relying solely on the epidemiological studies cited in the EPA-ISA. This time, however, Dr. Hall-Carrington did not mention “ADHD,” specifically. The jury awarded Ms. Stevenson *10 \$1 million in economic damages and \$2 million in non-economic damages.

E. Post-Trial Motions and Appeal.

Mr. Rochkind filed a Motion for New Trial, Judgment Notwithstanding the Verdict (“JNOV”), and Remittitur. The circuit court denied Mr. Rochkind's motion for a new trial and JNOV but reduced damages pursuant to the statutory cap. Mr. Rochkind appealed to the Court of Special Appeals. While that appeal was pending, Ms. Stevenson filed a Petition for Writ of Certiorari and Mr. Rochkind filed a Cross-Petition. We granted both petitions to answer the following questions:

- (1) Should the Court adopt the standard for admitting expert testimony under [Daubert v. Merrell Dow Pharmaceuticals, Inc.](#), 509 U.S. 579, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993)?
- (2) Was [Ms. Stevenson's] medical causation expert's specific causation opinion admissible in this case under [Rule 5-702](#), **636 applying the standard set forth in [Daubert](#)?
- (3) Was it error for the trial court to allow [Ms. Stevenson's] medical causation expert to testify that [Ms. Stevenson] has attentional and behavioral injuries without providing a reliable method for attributing those injuries to lead exposure when [Ms. Stevenson] had already been diagnosed with ADHD?
- (4) Was it error for the trial court to allow [Ms. Stevenson's] medical expert to render specific causation opinions based on general epidemiological studies?

STANDARD OF REVIEW

[1] [2] [3] “[T]he admissibility of expert testimony is a matter largely within the discretion of the trial court, and its action in admitting or excluding such testimony will seldom constitute ground for reversal.” [Roy v. Dackman](#), 445 Md. 23, 38–39, 124 A.3d 169 (2015). When the basis of an expert's opinion is challenged pursuant to [Maryland Rule 5-702](#), the review is abuse of discretion. [*11 Blackwell v. Wyeth](#), 408 Md. 575, 618, 971 A.2d 235 (2009). “Such a ruling, however, may be reversed on appeal if it is founded on an error of law or some serious mistake, or if the trial court clearly abused its discretion.” [Sippio v. State](#), 350 Md. 633, 648, 714 A.2d 864 (1998) (citation and internal quotation marks omitted). Additionally, we will not affirm a decision within

the discretion of the trial court if the judge acts in an “arbitrary or capricious manner” or “beyond the letter or reason of the law.” [Garg v. Garg](#), 393 Md. 225, 238, 900 A.2d 739 (2006) (citation omitted).

DISCUSSION

A. Parties’ Contentions.

In [Stevenson I](#), we held that it was error to allow Dr. Hall-Carrington to testify that lead exposure generally causes ADHD and therefore error to testify that lead exposure specifically caused Ms. [Stevenson’s ADHD](#). 454 Md. at 293–96, 164 A.3d 254. On remand, the circuit court ruled that Dr. Hall-Carrington was allowed to testify that Ms. Stevenson’s attentional deficits, hyperactivity, and impulsivity—some of the symptoms of ADHD—were specifically caused by lead exposure as long as she did not use the term “ADHD.” The circuit court did not base its ruling on [Rule 5-702](#) or [Frye-Reed](#). It based its ruling solely on its reading of this Court’s opinion in [Stevenson I](#).

As Appellant/Cross-Petitioner, Mr. Rochkind initially argues that the Court should adopt the [Daubert](#) standard, apply it to this case, and find that Dr. Hall-Carrington’s specific causation opinion is inadmissible under [Rule 5-702](#). Ms. Stevenson responds that the Court should not adopt [Daubert](#) but that even under [Daubert](#), Dr. Hall-Carrington’s specific causation opinion would be admissible. Understandably, Mr. Rochkind, in support of [Daubert](#), and Ms. Stevenson, in opposition, each list a host of pros and cons to adopting [Daubert](#).

As Appellee/Petitioner, Ms. Stevenson argues that under current expert admissibility jurisprudence, it was not error for the circuit court to allow Dr. Hall-Carrington to testify that Ms. Stevenson has a physical [brain injury](#) attributable to lead [*12](#) exposure that manifested in symptoms of attentional deficits, hyperactivity and impulsivity. To support this position, Ms. Stevenson maintains that Dr. Hall-Carrington provided a reliable methodology consistent with Maryland tort law’s “substantial factor” causation standard. Ms. Stevenson lastly argues that the circuit court did not err in allowing specific causation opinions based on general epidemiological studies.

Mr. Rochkind responds that even under [Frye-Reed](#), it was error for the circuit [**637](#) court to allow Dr. Hall-Carrington to testify that Ms. Stevenson’s attentional and behavioral problems were caused by lead exposure because (1) Ms. Stevenson had been clinically diagnosed with ADHD and (2) Dr. Hall-Carrington did not have a reliable methodology for attributing those problems to lead exposure as opposed to ADHD. Mr. Rochkind further asserts that it was error for Dr. Hall-Carrington to opine that lead exposure caused Ms. Stevenson’s attentional deficits, hyperactivity, and impulsivity problems based on a document that states it cannot be applied to individuals. In essence, these are the same arguments that Mr. Rochkind brought in [Stevenson I](#), this time in the context of attentional deficits, hyperactivity, and impulsivity as opposed to “ADHD,” specifically.

In the lead up to the [Daubert](#) debate, we begin with the legal background.

B. Legal Background: Frye-Reed and Maryland Rule 5-702.

Maryland courts admit expert testimony through two channels—the [Frye-Reed](#) standard and [Maryland Rule 5-702](#). Nominally, the relationship between the channels is simple: to be admissible, expert testimony discussing novel scientific theories must meet both the minimum threshold [Frye-Reed](#) standard and the [Rule 5-702](#) requirements, but expert testimony addressing non-novel scientific evidence must only meet the requirements of [Rule 5-702](#). Often, however, the relationship between the tests is not so simple. For example, what test (or tests) applies when “the underlying data and methods for [*13](#) gathering this data are generally accepted in the scientific community but applied to support a novel theory[?]” [Blackwell](#), 408 Md. at 596, 971 A.2d 235.

Despite decades of jurisprudence on the topic, the [Frye-Reed](#) standard—and its relationship to [Maryland Rule 5-702](#)—holds a confusing grip on Maryland bench and bar. What was originally set out in 1978 as a simple test for admissibility has become increasingly complex with the development of [Daubert](#) case law. We begin by chronicling the [Frye-Reed](#) “greatest hits.”

1. From Frye to Daubert.

In [Reed v. State](#), 283 Md. 374, 391 A.2d 364 (1978), this Court, like most state appellate courts to consider the issue,⁴ adopted the “general acceptance” test first espoused in [Frye v. United States](#), 293 F. 1013 (D.C. Cir. 1923): for expert testimony predicated on a novel scientific principle or discovery to be admissible, the scientific principles or discoveries must be generally accepted in the relevant scientific community. For decades thereafter, Maryland appellate courts applied [Frye-Reed](#) only in novel scientific evidence cases. See, e.g., [Kelley v. State](#), 288 Md. 298, 302, 418 A.2d 217 (1980) (polygraph); [State v. Collins](#), 296 Md. 670, 678–79, 464 A.2d 1028 (1983) (hypnosis); [U.S. Gypsum Co. v. Mayor & City Council of Balt.](#), 336 Md. 145, 182–83, 647 A.2d 405 (1994) (surface dust sampling in asbestos cases); [Schultz v. State](#), 106 Md. App. 145, 150–57, 664 A.2d 60 (1995) (horizontal gaze nystagmus field sobriety tests); [Keene Corp., Inc. v. Hall](#), 96 Md. App. 644, 652–60, 626 A.2d 997 (1993) (polarized light microscopy in asbestos cases).

Meanwhile, seventy years after [Frye](#), the Supreme Court of the United States adopted a new standard for admissibility of expert testimony in federal courts. In [Daubert v. Merrell Dow Pharmaceuticals, Inc.](#), the Supreme Court held that FRE 702 superseded [Frye](#). *14 509 U.S. 579, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993). At the time, FRE 702 provided that “a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify **638 ... in the form of an opinion or otherwise” about “scientific, technical, or other specialized knowledge [that] will assist the trier of fact to understand the evidence or to determine a fact in issue.” The Supreme Court read FRE 702 to mandate a threshold determination as to whether the “scientific testimony” at issue is “not only relevant, but reliable.” [Id.](#) at 589, 113 S.Ct. 2786. On reliability, the Supreme Court provided a non-exclusive list of factors that may be pertinent: (1) “whether a theory or technique ... can be (and has been) tested”; (2) “whether [it] has been subjected to peer review and publication”; (3) “the known or potential rate of error”; (4) “the existence and maintenance of standards controlling the technique’s operation”; and—harkening back to [Frye](#)—(5) whether it is “general[ly] accepted” within

the relevant scientific community. [Id.](#) at 593–94, 113 S.Ct. 2786. The [Daubert](#) analysis, according to the Supreme Court, was more flexible than the “uncompromising [[Frye](#)] ‘general acceptance’ test” and gave trial courts greater discretion to admit scientific expert testimony that is relevant and founded on sound principles, even though novel or controversial. [Id.](#) at 596, 113 S.Ct. 2786.

Four years later, in [General Electric Co. v. Joiner](#), the Supreme Court scrutinized epidemiological studies regarding a cause of lung cancer. 522 U.S. 136, 145–46, 118 S.Ct. 512, 139 L.Ed.2d 508 (1997). The [Joiner](#) Court held that because none of the studies provided a causal link between the chlorine compound and lung cancer, “there is simply too great an analytical gap between the data and the opinion proffered.” [Id.](#) at 146, 118 S.Ct. 512. The studies therefore did not support the expert testimony in that case. [Joiner](#) and the “analytical gap” analysis, as discussed below, is now a critical piece of Maryland’s [Frye-Reed](#) analysis. To complete the “[Daubert](#) trilogy,”⁵ the Supreme Court held in [Kumho Tire Co. v. Carmichael](#), that “[Daubert](#)’s general holding ... applies not only to testimony based on ‘scientific’ knowledge, but also to testimony based on ‘technical’ and ‘other specialized’ knowledge.” 526 U.S. 137, 141, 119 S.Ct. 1167, 143 L.Ed.2d 238 (1999).⁶

A supermajority of jurisdictions have departed from [Frye](#) in favor of the flexible [Daubert](#) approach.⁷ Maryland stands strong amongst the minority jurisdictions that adhere to [Frye](#) or a modified [Frye](#) test.⁸ Maryland’s [Frye-Reed](#) standard, as it **639 currently stands, is broader than it used to be. Some Maryland courts have suggested that [Frye-Reed](#) has “drift[ed]” toward [Daubert](#) in two ways: *first*, that courts have used [Frye-Reed](#) “not only to evaluate scientific methods, but also to assess scientific conclusions”; and *second*, that courts have applied [Frye-Reed](#) to established, as well as novel, scientific methods. [Savage v. State](#), 455 Md. 138, 180–81, 166 A.3d 183 (2017) (Adkins, J., concurring); see *16 [Burks v. Allen](#), 238 Md. App. 418, 454–59, 192 A.3d 847 (2018);

[Sissoko v. State](#), 236 Md. App. 676, 708–09, 182 A.3d 874 (2018).

2. The First “Drift”: Scientific Conclusions.

This Court has modified the reach of [Frye-Reed](#) to include not only scientific *methods*, but also scientific *conclusions*. First indicated in [Wilson v. State](#), 370 Md. 191, 803 A.2d 1034 (2002) (holding that an expert's conclusion that SIDS deaths in a single family are genetically related was inadmissible even when based on a reliable statistical method—the “product rule”—because there was not general agreement in the medical community for such a conclusion), the Court expanded [Frye-Reed](#) in a trio of cases. [Montgomery Mut. Ins. Co. v. Chesson](#), 399 Md. 314, 923 A.2d 939 (2007) (“[Chesson I](#)”); [Blackwell](#), 408 Md. at 575, 971 A.2d 235; [Chesson v. Montgomery Mut. Ins. Co.](#), 434 Md. 346, 75 A.3d 932 (2013) (“[Chesson II](#)”).

In [Chesson I](#), the Court analyzed the admissibility of an expert medical opinion that exposure to mold causes “sick building syndrome.” [399 Md. at 317, 923 A.2d 939](#). Petitioners argued that the circuit court erred when it refused to hold a [Frye-Reed](#) hearing on the admissibility of the expert testimony. Respondents countered that expert opinions concerning the cause or origin of a person's condition are not subject to [Frye-Reed](#). In essence, because the methods of the expert were not novel, respondents believed that a [Frye-Reed](#) analysis was unnecessary. We disagreed, noting


that in cases in which the proper choice of [scientific] techniques was dependent on an underlying scientific phenomenon or principle, a court must engage in [Frye-Reed](#) analysis to determine whether that phenomenon or principle is generally accepted in the scientific community and whether




the proper scientific tests were used to reach the expert's conclusions.


[Id.](#) at 329–30 (citing [Wilson](#), 370 Md. at 203, 803 A.2d 1034). We held that the expert, offering a novel medical conclusion *17 based on underlying generally accepted medical principles, was therefore subject to a [Frye-Reed](#) hearing.



To reach that conclusion, we distinguished [CSX Transportation, Inc. v. Miller](#), 159 Md. App. 123, 858 A.2d 1025 (2004) and [Myers v. Celotex Corp.](#), 88 Md. App. 442, 594 A.2d 1248 (1991). In those cases, the Court of Special Appeals held that a [Frye-Reed](#) hearing was unnecessary to admit a medical expert opinion regarding the origin of a patient's illness. See [CSX](#), 159 Md. App. at 187, 858 A.2d 1025 (etiology of arthritis); [Myers](#), 88 Md. App. at 458–59, 594 A.2d 1248 (asbestos causing cancer). The difference between those cases and [Chesson I](#), we noted, was that [CSX](#) and [Myers](#) involved generally accepted medical conclusions based on generally accepted medical principles. [Chesson I](#), 399 Md. at 331–32, 923 A.2d 939.

The “drift” continued in [Blackwell](#), 408 Md. at 575, 971 A.2d 235, when we adopted the “analytical gap” concept discussed by the Supreme Court in [Joiner](#), 522 U.S. at 146, 118 S.Ct. 512. There, we conducted a [Frye-Reed](#) analysis of the supposed causal relationship between childhood vaccines and autism. The “essence” of the issue before us was whether the [Frye-Reed](#) test applied “to the analysis undertaken by an **640 expert where the underlying data and methods for gathering this data are generally accepted in the scientific community but applied to support a novel theory” of medical causation. [Blackwell](#), 408 Md. at 596, 971 A.2d 235. We drew from federal [Daubert](#) decisions because we never “had occasion to scrutinize the analytical phase of a scientific process underlying a novel scientific opinion, where the underlying data may otherwise be generally accepted in the scientific community.” [Id.](#) at 604–05, 971 A.2d 235. Because generally accepted methodology “must be coupled

with generally accepted analysis in order to avoid the pitfalls of an ‘analytical gap,’ ” we concluded that the medical expert opinion was not generally accepted in the scientific community notwithstanding a basis in generally accepted methods.  *Id.* at 608–09, 971 A.2d 235.

We reaffirmed the “analytical gap” concept in  *Chesson II*, noting that although “[g]eneral acceptance does not equate to *18 unanimity of opinion within a scientific community ... [a] trial judge [] cannot admit expert testimony based on scientific methodology without consideration of whether the analysis itself is flawed and posits an ‘analytical gap.’ ”  434 Md. at 356–57, 75 A.3d 932 (quoting  *Blackwell*, 408 Md. at 608, 971 A.2d 235).

On appeal from the remand in  *Chesson I*, we held that the “differential diagnosis”⁹ process—a generally accepted diagnostic method—the expert used to reach his causation conclusion, was a distortion of that methodology.

The “analytical gap” concept was on display recently in *Savage*, 455 Md. at 138, 166 A.3d 183. In that murder case, the defendant sought to bolster his theory of self-defense by expert testimony. The expert would have testified that prior traumatic brain injuries could have caused the defendant to perceive non-threatening actions as threatening. After a  *Frye*- *Reed* hearing, the circuit court excluded the testimony. On appeal, we affirmed, holding that the expert’s “analysis did not bridge the ‘analytical gap’ between the data available to him and his ultimate conclusions.” *Id.* at 158, 166 A.3d 183.

We concluded that the expert’s


ultimate opinions, that “under such conditions of chaos and stress” [the defendant] “would be more likely to perceive himself to be facing an imminent threat and have greater difficulty controlling his reactions[,]” and that “[defendant] views the world through an untrusting and suspicious perspective, and often is hyper-vigilant to possible threats[,]” are conclusory.

* * *






[W]e are unable to conclude that [the expert] adequately “connected the dots” between the empirical foundation from *19 his study of [defendant] and the [expert’s] ultimate opinions. We emphasize that, in passing on













whether there exists an “analytical gap” between the data and the expert’s conclusions, we may take as given the general acceptance of the expert’s methods.

Id. at 164, 170, 166 A.3d 183.

Judge Sally D. Adkins, concurring in *Savage*, argued that the Court should adopt the  *Daubert* standard because the “check for an ‘analytical gap’ has muddied our approach to expert testimony.” *Id.* at 186, 166 A.3d 183 (Adkins, J., concurring). **641 In her view, Maryland Rule 5-702 “serves as a sufficient bulwark for preventing shoddy scientific testimony.” We discuss Rule 5-702 in greater detail below.

3. The Second “Drift”: New and Old Methods.

In  *Reed*, we adopted the  *Frye* standard, stating that “if a *new* scientific technique’s validity is in controversy in the relevant scientific community, or if it is generally regarded as an experimental technique, then expert testimony based upon its validity cannot be admitted into evidence.”  283 Md. at 381, 391 A.2d 364 (emphasis added). In practice, however, Maryland courts have liberalized the standard, applying  *Frye*- *Reed* “to testimony based on any scientific principle—new or old.” *Savage*, 455 Md. at 180, 166 A.3d 183 (Adkins, J., concurring).

For example, in  *Clemons v. State*, we defined a  *Frye*- *Reed* standard that “makes evidence emanating from a *novel scientific process* inadmissible absent a finding that the process is generally accepted by the relevant scientific community.”  392 Md. 339, 344, 365, 896 A.2d 1059 (2006) (emphasis added). Despite purportedly limiting the standard to “novel scientific process[es],” we applied  *Frye*- *Reed* to comparative bullet lead analysis¹⁰—a forty-year-old and widely used scientific process. We concluded that the timeworn process did not satisfy  *Frye*- *20  *Reed* “because several fundamental assumptions underlying the process are not generally accepted by the scientific community.”  *Id.* at 372, 896 A.2d 1059. Similarly, in  *State v. Baby*, we held that expert testimony regarding rape trauma syndrome was subject to  *Frye*- *Reed* despite acknowledging that the syndrome

was first recognized in 1974. [404 Md. 220, 271, 946 A.2d 463 \(2008\)](#). “Thus, like [Daubert](#), we have implicitly recognized that a trial judge's gatekeeping function should not be limited to new scientific theories—old ‘junk science’ should be kept out of our courts as well.” [Savage, 455 Md. at 180, 166 A.3d 183](#) (Adkins, J., concurring).

Still, “[d]espite our repeated assertions that [Frye-Reed](#) applies only to new scientific methods, we have never defined what constitutes a new or novel scientific method. We have never held that a scientific method is not subject to [Frye-Reed](#) because it is not new.” *Id.* at 181 n.5, 166 A.3d 183 (citations omitted) (citing [Chesson I, 399 Md. at 327, 923 A.2d 939](#) (explaining that [Frye-Reed](#) requires a party to “establish first that any novel scientific method is reliable and accepted generally in the scientific community before the court will admit expert testimony based upon [it]” (citation omitted)); [Clemons, 392 Md. at 363, 896 A.2d 1059](#) (explaining that [Reed](#) adopted a standard for the admission of “novel scientific techniques”); [Wilson, 370 Md. at 201, 803 A.2d 1034](#) (“[P]rior to the admission of expert testimony based on the application of new scientific techniques, it must be first established that the particular scientific method is itself reliable.” (citation omitted))).

[4] It is also well established that trial courts may take judicial notice when a scientific method is broadly and generally accepted. [Chesson I, 399 Md. at 327, 923 A.2d 939](#); [Wilson, 370 Md. at 201, 803 A.2d 1034](#) (“Where the validity and reliability of a scientific technique is so broadly and generally accepted within the scientific community, as is the case of ballistic tests, blood tests, and the like, a trial court may take judicial notice of its reliability.” (citation **642 omitted)). Given that “general acceptance” is the hallmark of [Frye-Reed](#), our suggestion *21 that trial courts take judicial notice of generally accepted methods implies that *all* scientific testimony is, in some sense, subject to [Frye-Reed](#). In [Dixon v. Ford Motor Co.](#), for example, we stated that a [Frye-Reed](#) analysis is required “only when the proposed expert testimony involves a ‘novel scientific method,’ ” yet we took judicial notice of the scientific method's general acceptance:

We may take judicial notice from our own decisions that the scientific community accepts the proposition that exposure to asbestos may cause [mesothelioma](#). That is not a novel scientific principle. More than 20 years ago ... we flatly rejected the assertion that [mesothelioma](#) cannot be caused by exposure to chrysotile asbestos. Thus, [the expert's] opinion that exposure to chrysotile asbestos in Ford brakes may cause [mesothelioma](#) also is not a novel scientific principle.

[433 Md. 137, 149–50, 70 A.3d 328 \(2013\)](#) (footnote omitted).

We acknowledge, as we have done on several occasions, that the modern [Frye-Reed](#) standard is not what it was when we adopted the test in 1978.

4. *Maryland Rule 5-702.*

Upon recommendation of the Rules Committee, this Court adopted [Rule 5-702](#) in 1994, a year after the Supreme Court issued the opinion in [Daubert](#):

Expert testimony may be admitted, in the form of an opinion or otherwise, if the court determines that the testimony will assist the trier of fact to understand the evidence or to determine a fact in issue. In making that determination, the court shall determine (1) whether the witness is qualified as an expert by knowledge, skill, experience, training, or education, (2) the appropriateness of the expert testimony on the particular subject, and (3) whether a sufficient factual basis exists to support the expert testimony.

In adopting our counterpart to FRE 702, we blessed a Committee Note that stated that Rule 5-702 was not intended to *22 overrule *Reed* or other cases adopting the *Frye* standard, and that “[t]he required scientific foundation for the admission of novel scientific techniques or principles is left to development through case law.” Comm. Note to Md. Rule 5-702; see *Burrall v. State*, 352 Md. 707, 738, 724 A.2d 65 (1999).

In *Stevenson I*, we closely examined the third prong of Rule 5-702¹¹—sufficient factual basis. 454 Md. at 286, 164 A.3d 254. Judge Adkins, writing for the Court, noted that “sufficient factual basis” includes two sub-elements: (1) an adequate supply of data; and (2) a reliable methodology. *Id.* (citing *Roy v. Dackman*, 445 Md. 23, 42–43, 124 A.3d 169 (2015); *Exxon Mobil Corp. v. Ford*, 433 Md. 426, 478, 71 A.3d 105 (2013)). Absent either element, the opinion is “mere speculation or conjecture.” *Id.* (quoting *Exxon*, 433 Md. at 478, 71 A.3d 105). Because we held that Dr. Hall-Carrington’s causation opinion lacked an adequate supply of data, we did not reach the reliable methodology element. We also declined to address the second question on certiorari—whether the circuit court should have held a *Frye-Reed* hearing—because our Rule 5-702 conclusion was dispositive. See *Sissoko*, 236 Md. App. at 713, 182 A.3d 874 (discussing *Stevenson I* and noting that “expert opinion testimony that does not satisfy the criteria for admissibility under Rule 5-702 is not admissible even if it satisfies the *Frye-Reed* general acceptance test”).

**643 One month later, Judge Adkins issued her concurrence in *Savage*. On Rule 5-702, Judge Adkins pointed to *Blackwell* to describe the duplicity of applying *Frye-Reed* to Rule 5-702:

In *Blackwell*’s *Frye-Reed* discussion, we acknowledged that “reliability ... affect[s] whether a scientific theory is accepted in the field in which it is offered.” 408 Md. at 584, 971 A.2d 235. We turned to federal case law to define the contours of this term because of *Daubert*’s emphasis on reliable expert

testimony. *Id.* at 604–07, 971 A.2d 235, 260. We concluded that the expert’s testimony was inadmissible *23 under *Frye-Reed*, in part, because his research was not “based upon sound methodology.” *Id.* at 609, 971 A.2d 235, 260. Thus, our evaluation of whether a conclusion was generally accepted included inquiry as to whether the methodology used was reliable—one of the 5-702(3) subfactors. See *Roy*, 445 Md. at 42–43, 124 A.3d 169. Accordingly, to determine the admissibility of expert testimony under our direction in *Blackwell*, a trial court may have to analyze the reliability of an expert’s methodology twice—once under *Frye-Reed* and again under Rule 5-702(3). Adopting the *Daubert* approach and confining our evaluation of scientific expert testimony to the requirements of Rule 5-702 would eliminate this repetition.

Savage, 455 Md. at 184, 166 A.3d 183 (Adkins, J., concurring) (omissions and alterations in original). Thus, according to the concurrence, “[t]he evolution of our *Frye-Reed* doctrine to both maintain the general acceptance test and include a check for an “analytical gap” has muddied our approach to expert testimony.” *Id.* at 186, 166 A.3d 183. Judge Adkins suggested that the Court use its discretion under Rule 8-131(a)¹² to adopt *Daubert*. In doing so, she distinguished *Savage* from the majority opinion in *Stevenson I*:

Acknowledging our implicit adoption of *Daubert* would not only be “desirable to guide the trial court” in this case but would also provide clarity to Maryland courts.

See Md. Rule 8-131(a). Furthermore, unlike [*Stevenson I*], our most recent case addressing the admissibility of scientific expert testimony, we can only dispose of the case at hand by applying *Frye-Reed*. In [*Stevenson I*], we declined to address the parties’ arguments regarding *Frye-Reed* and instead held that the expert testimony was inadmissible under Rule 5-702 because the petitioner had appealed the trial court’s determination as to both standards. Here, *Savage* only *24 challenges the exclusion of [the expert’s] testimony under *Frye-Reed*.

Savage, 455 Md. at 175 n.1, 166 A.3d 183 (Adkins, J., concurring) (citation omitted).

Most recently, in [Sugarman v. Liles](#), another opinion authored by Judge Adkins, we revisited the same EPA-ISA papers at issue in [Stevenson I](#) and the present case. [460 Md. 396, 190 A.3d 344 \(2018\)](#). Unlike [Stevenson I](#), we held that the EPA-ISA supplied a sufficient factual basis under [Rule 5-702\(3\)](#) for a pediatrician's general causation opinion that elevated blood lead levels can cause deficits in auditory encoding and processing speed. In so holding, we discussed extrajurisdictional cases that address the “analytical gap” concept, including [King v. Burlington Northern Santa Fe Railroad Co.](#), 277 Neb. 203, 762 N.W.2d 24 (2009). In that case, the Supreme ****644** Court of Nebraska reversed a trial court order excluding an expert's opinion that exposure to diesel exhaust fumes had caused the plaintiff's late husband to develop a [blood cancer](#), because the expert relied upon epidemiological studies that did not “draw definitive conclusions on causation.” [King](#), 762 N.W.2d at 48.

In [Sugarman](#), we cited [King](#) with approval, explaining that an expert may rely on scientific studies that do not make “definite conclusions of a causal relationship,” so long as they are “qualified to interpret and extrapolate from the relevant studies.” [Sugarman](#), 460 Md. at 427, 190 A.3d 344. Thus, the pediatrician expert witness was permitted to extrapolate from the EPA-ISA that exposure to lead can cause attention decrements to opine that it also could cause slower processing speed and auditory encoding deficits, which were “factors of attention.” [Id.](#) at 428, 190 A.3d 344.

Once again, we distinguished that case from [Stevenson I](#):

There, the expert lacked “epidemiological studies—or other reliable evidence—demonstrating a causal link between lead exposure and ADHD” but nonetheless offered a causation opinion. A causal relationship between lead exposure and some symptoms of ADHD did not warrant testimony linking ***25** the two. The symptoms, we observed, were present in a “variety of other disorders and learning disabilities.” ADHD, however, has precise diagnostic criteria and requires ruling out other [behavioral disorders](#). Further, the EPA-ISA emphasized other potential confounding factors that undermined Dr. Hall-Carrington's

opinion. The EPA-ISA could not support her opinion because the studies discussed therein “only reveal an association between lead exposure and ADHD.” Her opinion lacked an adequate factual basis because the source did not logically support her conclusion.

Here, by contrast, the EPA-ISA identified a causal relationship between attention decrements and exposure to lead. Unlike in [[Stevenson I](#)], none of the experts opined that Liles has a diagnosable learning disability or [behavioral disorder](#). [The pediatrician] explained lead's impact on a developing brain, including the way it affects attention. She offered the opinion that Liles suffered from the kind of generalized attention deficits the EPA-ISA identified as being caused by lead exposure. Because [the pediatrician's] opinion testimony does not suffer the same defects as were present in [[Stevenson I](#)], we hold that she had a sufficient factual basis to offer an opinion regarding general causation.

[Id.](#) at 428–29, 190 A.3d 344 (emphasis and citations omitted). The dissent in [Sugarman](#) disagreed, instead suggesting that “this case suffers a somewhat distinct, but nonetheless significant, analytical gap as was present in” [Stevenson I](#). [Id.](#) at 450, 190 A.3d 344 (Getty, J., concurring in part and dissenting in part).

We have therefore held, under our [Frye-Reed](#) jurisprudence, that the EPA-ISA epidemiological studies *can* provide a sufficient factual basis to offer an expert opinion as to *general* causation of attention decrements. Regardless of whether we apply [Daubert](#) or the modern [Frye-Reed](#) standard, the question then becomes: is this *specific* causation case a [Stevenson I](#) case, where the analytical gap was too vast, or a [Sugarman](#) case where the analytical gap was sufficiently bridged? We do not answer that question, but remand the case ***26** for a hearing on the subject applying the [Daubert](#) standard we adopt today.

C. We Adopt Daubert.

Maryland's “jurisprudential drift” has led to a duplicative analytical process and “muddied” the waters of our approach to expert testimony. ****645** *Savage*, 455 Md. at 186, 187, 166 A.3d 183 (Adkins, J., concurring). Instead of perpetuating a process wherein expert testimony must pass

through [Frye-Reed](#) and [Rule 5-702](#), we implement a single standard by which courts evaluate all expert testimony:

[Daubert](#). Courts, practitioners, and scholars alike have grappled with the advantages and disadvantages of the [Daubert](#) standard over the decades since the Supreme Court first articulated the factored test. Because our decision today is a substantial departure from our [Frye-Reed](#) jurisprudence, we explain the reasons that guide us.

1. The Circuit Court Abused Its Discretion.

[5] The circuit court did not contemplate any of the above legal considerations. Instead, the court relied solely on the opinion in [Stevenson I](#). The determination in [Stevenson I](#) that Dr. Hall-Carrington could not testify that lead generally or specifically caused ADHD—and the analysis thereto—led the circuit court to properly conclude that Dr. Hall-Carrington could testify that lead can cause attention decrements, hyperactivity, and impulsivity in the *general population*. But it does not follow, merely based on the [Stevenson I](#) opinion, that the EPA-ISA supports a finding that lead *specifically caused Ms. Stevenson's* attention decrements, hyperactivity, and impulsivity.

As a practical matter, the circuit court erred by refusing to hold a [Rule 5-702](#) hearing at which Dr. Hall-Carrington could explain, and Mr. Rochkind could cross-examine, the specific causation methodology that is the subject of this appeal. Rather than conduct an evidentiary hearing to analyze the methodology employed by Dr. Hall-Carrington, the circuit court stated that based on its reading of the opinion in [Stevenson I](#) that Dr. Hall-Carrington could render the same *27 opinions, as in [Stevenson I](#), so long as she did not use the term “ADHD.” Mr. Rochkind objected, noting that (1) the Court never reached the specific causation issue in [Stevenson I](#); and (2) Dr. Hall-Carrington had no methodology to render such an opinion. Mr. Rochkind thereafter filed additional briefing and an extensive written offer of proof in support of his objection. When the court denied the motion for a pretrial hearing, Mr. Rochkind was compelled to challenge Dr. Hall-Carrington's methodology in front of the jury. This placed Mr. Rochkind in exactly the situation a pretrial hearing is designed to prevent. *See* [Blackwell](#), 408 Md. at 591, 594 n. 13, 971 A.2d 235 (describing pre-trial evidentiary hearing contemplated under

Maryland law to challenge expert testimony and reasons therefor); *Savage*, 455 Md. at 170, 166 A.3d 183 (noting that experts should not be connecting the dots in front of jury).

The circuit court abused its discretion by not holding a [Rule 5-702](#) hearing. Given that we are remanding the case so that the circuit court can conduct a hearing pursuant to [Maryland Rule 5-702](#), as part of the remand, the circuit court should consider the [Daubert](#) standard adopted herein.

2. The “Right” Case.

Ms. Stevenson maintains that the instant case is not the “appropriate catalyst” for this Court to abandon the [Frye-Reed](#) standard in favor of the [Daubert](#) standard. We disagree.¹³

****646 *28** The standard by which expert testimony is evaluated is judicially determined by this Court. Within our purview, as charged by the Maryland Constitution, is our duty to “adopt rules and regulations concerning the practice and procedure” in Maryland courts.¹⁴ With this duty, we have adopted [Maryland Rule 5-702](#). When this Court effects a change to the common law, as it does today, the Maryland Rules undergo revision to reflect such change. We are not bound to the Rules when the need to alter common law arises. Indeed, the 1994 Committee Note accompanying [Rule 5-702](#) confirms as much: “[t]he required scientific foundation for the admission of novel scientific techniques or principles is left to development through case law.” The time has now come to plot a new course, overruling our [Frye-Reed](#) jurisprudence and finding [Daubert](#) factors persuasive, with regard to the analysis of expert testimony.

[6] Surely, our decision today implicates the doctrine of *stare decisis*. “Latin for ‘to stand by things [that are] decided,’ ” *stare decisis* ordinarily requires that a court “follow earlier judicial decisions when the same points arise again in litigation.” [Kazadi v. State](#), 467 Md. 1, 27, 223 A.3d 554 (2020) (quoting Black's Law Dictionary (11th ed. 2019)). However, the doctrine “is not an inexorable command.” *Savage*, 455 Md. at 186, 166 A.3d 183 (Adkins, J., concurring) (quoting [Conover v. Conover](#), 450 Md. 51, 65, 146 A.3d 433 (2016)). This Court has articulated two circumstances where a departure from the doctrine of *stare decisis* is permissible: “(1) when

the prior *29 decision is clearly wrong and contrary to established principles[;] or (2) when the precedent has been superseded by significant changes in the law or facts.”

Id. (internal quotation marks omitted) (quoting [Conover](#), 450 Md. at 65, 146 A.3d 433). Over the last forty years, Maryland’s appellate courts have considerably modified the [Frye-Reed](#) standard. The [Frye-Reed](#) of 1978 is markedly different than the “[Frye-Reed Plus](#)” of 2020. With [Daubert](#), and eventually [Joiner](#) and [Kumho Tire](#), the Supreme Court disavowed the [Frye](#) standard for the more flexible [Daubert](#) approach. A supermajority of our sister jurisdictions followed suit. Clearly, a significant change in the law has occurred, permitting us to depart from *stare decisis* and adopt the [Daubert](#) standard in this instance.¹⁵

**647 *30 3. *Daubert: Generally Accepted by the Supermajority of Jurisdictions.*

Judge Adkins’ concurring opinion in [Savage](#) blazed the trail for this Court’s adoption of the [Daubert](#) standard. Considering the breadth of scholarly arguments supporting and discounting the [Daubert](#) standard, and Maryland’s prolonged—albeit nominal at times—adherence to the [Frye-Reed](#) standard, we now explain our decision to join the supermajority of sister states and the federal courts on this issue.

We recognize that this Court’s jurisprudence has implicitly embraced portions of the [Daubert](#) standard in the [Frye-Reed](#) analysis without expressly stating that fact. See *supra* at 15–22, 236 A.3d at 639–42. Recognizing our “drift,” we agree with Mr. Rochkind that retaining a [Frye-Reed](#) standard, yet encouraging trial courts to seek guidance from federal cases applying the [Daubert](#) standard, may generate some confusion.

[7] The impetus behind our decision to adopt [Daubert](#) is our desire to refine the analytical focus when a court is faced with admitting or excluding expert testimony. This becomes especially important in modern society, which routinely confronts emerging technologies that challenge the efficacy of [Frye](#). [Frye](#) centered on whether scientific principles

or discoveries were generally accepted in a relevant scientific community. Yet, using acceptance as the only measure of reliability presents a conundrum: a generally accepted methodology may produce “bad science” and be admitted, while a methodology not yet accepted may be excluded, even if it produces “good science.” See [Motorola Inc. v. Murray](#), 147 A.3d 751, 756 (D.C. 2016). General acceptance remains an important consideration in the reliability analysis, but it cannot remain the *sole* consideration. See *31 [Libas, Ltd. v. United States](#), 193 F.3d 1361, 1368 (Fed. Cir. 1999) (“While ‘[w]idespread acceptance can be an important factor’ in an assessment of reliability ... after [Daubert](#) and [Kumho Tire](#)], the inquiry does not necessarily end there. The lesson of the Supreme Court’s rejection of ‘general acceptance’ as the sole standard for expert testimony, in favor of the [Daubert-Kumho](#) reliability standard is that ‘widespread use’ or ‘general acceptance’ is an **648 imperfect proxy for reliability.” (internal citation omitted)).

[Daubert](#), by contrast, refocuses the attention away from acceptance of a given methodology—although that is not totally removed from the calculus—and centers on the reliability of the methodology used to reach a particular result. “The ability to focus on the reliability of principles and methods, and their application, is a decided advantage that will lead to better decision-making by juries and trial judges alike.” [Motorola](#), 147 A.3d at 757.

In this regard, the analysis by the Honorable Paul W. Grimm in [United States v. Horn](#) is enlightening. There, Judge Grimm explained:

Under [Daubert](#), the parties and the trial court are *forced to reckon with the factors that really do determine whether the evidence is reliable, relevant and “fits” the case at issue.* Focusing on the tests used to develop the evidence, the error rates involved, what the learned publications in the field have said when evaluating it critically, and then, finally, whether it has come to be generally accepted, is a difficult task. But, if undertaken as intended, it does expose evidentiary weaknesses that otherwise would be

overlooked if, following the dictates of *Frye*, all that is needed to admit the evidence is the testimony of one or more experts in the field that the evidence at issue derives from methods or procedures that have become generally accepted.

185 F. Supp. 2d 530, 553 (D. Md. 2002) (emphasis added). “The principle shortcoming of *Frye*,” Judge Grimm continued, “was that it excused the court from even having to try to understand the evidence at issue.” *Id.* (citation omitted). Instead, a *Frye* court “only had to assure itself that among the people *32 involved in the field, the technique was acceptable as reliable.” *Id.* (quoting 4 Jack B. Weinstein & Margaret A. Berger, *Weinstein's Federal Evidence*, § 702.05[1] (2d ed. 1997)). This rationale leads to a troubling result:

given the impact of the *stare decisis* doctrine, once a court, relying on *Frye*, had ruled that a doctrine or principle had attained general acceptance, it was all to[o] easy for subsequent courts simply to follow suit. Before long, a body of case law could develop stating that a methodology had achieved general acceptance without there ever having been a contested, detailed examination of the underpinnings of that methodology.

Id.; see *supra* at 20–21, 236 A.3d at 641–42 (discussing this phenomenon in Maryland).

Other courts applying a variant of *Frye* have observed different flaws. The D.C. Court of Appeals noted that *Frye* “is not a good gatekeeper for inductive sciences such as epidemiology or psychology.” *Motorola*, 147 A.3d at 756. The Supreme Court of Alaska, in adopting the *Daubert*

standard, concluded that the *Frye* standard “is both unduly restrictive and unduly permissive.” *State v. Coon*, 974 P.2d 386, 394 (Alaska 1999). The *Frye* standard “excludes scientifically reliable evidence which is not yet generally accepted, and admits scientifically unreliable evidence which although generally accepted, cannot meet rigorous scientific scrutiny.” *Id.* at 393–94. For this reason, we tend to agree with the Supreme Court of Connecticut: “an admissibility test for scientific evidence premised *solely* on its ‘general acceptance’ is conceptually flawed and therefore must be rejected.” *State v. Porter*, 241 Conn. 57, 698 A.2d 739, 750 (1997) (emphasis in original).

Our *Frye-Reed* jurisprudence gave trial courts a stated “end”—reliable methodology—without providing the “means” to achieve it. In *Exxon*, we observed that “[t]o constitute reliable methodology, ‘an expert opinion must provide a sound reasoning **649 process for inducing its conclusion from the factual data’ and must have ‘an adequate theory or rational explanation of how the factual data led to the expert's conclusion.’ ” *33 433 Md. at 481, 71 A.3d 105 (citation omitted). The *Daubert* factors provide guidance on *how* to determine if scientific reasoning is, indeed, sound, or a scientific theory adequately justifies an expert's conclusion.

Daubert is not beyond reproach. Ms. Stevenson levels several criticisms against *Daubert*, none of which we find sufficiently persuasive to perpetuate our *Frye-Reed* jurisprudence. Still, we address Ms. Stevenson's arguments against adopting *Daubert* and use the opportunity to provide Maryland trial courts with additional guidance on how to implement this new-to-Maryland standard.

Ms. Stevenson contends that the *Daubert* standard enables judges to become “arbiters of scientific knowledge” and “usurp[] the role of juries.” She argues that the standard “sanction[s] judges to exclude from consideration opposing, yet legitimate opinions of experts, that ... are for a jury to weigh credibility.” We do not foresee the same gloomy outlook. Under *Daubert*, judges are charged with gauging only the threshold *reliability*—not the ultimate validity—of a particular methodology or theory. Ms. Stevenson appears to

believe that the inclusion of expert's testimony will lead to the exclusion of another; however, this simply is not true. As we shall demonstrate, it is often helpful to turn to FRE 702 and the associated Advisory Committee Note to understand [Daubert's](#) application. "When a trial court, applying [FRE 702], rules that an expert's testimony is reliable, *this does not necessarily mean that contradictory expert testimony is unreliable*. [FRE 702] is broad enough to permit testimony that is the product of competing principles or methods in the same field of expertise." Fed. R. Evid. 702 Advisory Committee Note (emphasis added and citation omitted). Indeed, under this approach to expert testimony, juries will continue to weigh competing, but still reliable, testimony.

[8] Ms. Stevenson relies in part on Chief Justice Rehnquist's concurring and dissenting opinion in [Daubert](#) to argue that adopting this standard requires judges to take on the role of amateur scientists. Like other courts that have considered [34](#) this argument, however, we reject it in kind. "Under [Daubert](#), trial judges are not required to make a determination of the ultimate scientific validity of any scientific propositions. Instead, they need only make a much more limited inquiry: whether sufficient indicia of legitimacy exist to support the conclusion that evidence derived from the principle may be profitably considered by a fact finder at trial." [Porter](#), 698 A.2d at 757; *see also* [E.I. du Pont de Nemours & Co. v. Robinson](#), 923 S.W.2d 549, 557 (Tex. 1995) (emphasis added) ("[A] judge does not have to be trained in science to evaluate the *reliability* of a theory or technique."). We are confident that trial judges are duly capable of undertaking the reliability analysis absent scientific training.

Ms. Stevenson further argues that [Daubert's](#) abuse of discretion standard and inherent flexibility of the [Daubert](#) factors will lead to inconsistent results. We recognize, like the D.C. Court of Appeals, that with [Daubert's](#) flexibility, "[s]ome inconsistency is inevitable." [Motorola](#), 147 A.3d at 756. The Supreme Court of Connecticut described "[Daubert's](#) indefiniteness not as a flaw, but as a necessity" in concluding that "a test embodying a general, overarching approach to the threshold admissibility of scientific evidence ... giv[es] trial courts a workable principle to follow." [Porter](#), 698 A.2d at 751–52. We remain persuaded that a marginal amount of inconsistency

is preferable given that this [650](#) standard will "more accurately distinguish 'good science' from 'bad science' than [Frye's](#) general acceptance test." [Savage](#), 455 Md. at 185, 166 A.3d 183 (Adkins, J., concurring) (quoting [Motorola](#), 147 A.3d at 756).

As delayed as Maryland is in joining the supermajority of states and federal courts to adopt the [Daubert](#) standard, we do so now with the added benefit of hindsight. As one court remarked, [Daubert's](#) application in the federal courts did not "work a sea change over federal evidence law." [United States v. 14.38 Acres of Land, More or Less Situated in Leflore Cty., State of Miss.](#), 80 F.3d 1074, 1078 (5th Cir. 1996). Nor are we convinced that adopting this standard in Maryland will upend Maryland evidence law. Instead, Maryland courts will be able to "draw from and contribute to the broad base of case law [35](#) grappling with scientific testimony." [Savage](#), 455 Md. at 185, 166 A.3d 183 (Adkins, J., concurring). This will give our courts a decided advantage when faced with emerging technologies we cannot yet foresee.

Our adoption of [Daubert](#) will streamline the evaluation of scientific expert testimony under Rule 5-702. As Judge Adkins indicated in [Savage](#), our discussion in [Blackwell](#) required trial courts "to analyze the reliability of an expert's methodology twice—once under [Frye](#)-[Reed](#) and again under Rule 5-702(3)." [Savage](#), 455 Md. at 184, 166 A.3d 183 (Adkins, J., concurring). Adopting [Daubert](#) eliminates the duplicative analysis and permits trial courts to evaluate *all* expert testimony—scientific or otherwise—under Rule 5-702.

4. Applying Daubert.

To complete our "jurisprudential drift"—once and for all—we set forth the [Daubert](#) factors we find persuasive in interpreting Rule 5-702. They include, but are not limited to:

- (1) whether a theory or technique can be (and has been) tested;
- (2) whether a theory or technique has been subjected to peer review and publication;
- (3) whether a particular scientific technique has a known or potential rate of error;

(4) the existence and maintenance of standards and controls; and

(5) whether a theory or technique is generally accepted.

[Daubert](#), 509 U.S. at 593–94, 113 S.Ct. 2786 (cleaned up); Fed. R. Evid. 702 Advisory Committee Note. In addition to these factors, courts have developed additional factors for determining whether expert testimony is sufficiently reliable. These factors include:

(6) whether experts are proposing to testify about matters growing naturally and directly out of research they have conducted independent of the litigation, or whether they have developed their opinions expressly for purposes of testifying;

*36 (7) whether the expert has unjustifiably extrapolated from an accepted premise to an unfounded conclusion;

(8) whether the expert has adequately accounted for obvious alternative explanations;

(9) whether the expert is being as careful as he [or she] would be in his [or her] regular professional work outside his [or her] paid litigation consulting; and

(10) whether the field of expertise claimed by the expert is known to reach reliable results for the type of opinion the expert would give.

Fed. R. Evid. 702 Advisory Committee Note (cleaned up).

The Supreme Court's guidance in [Daubert](#), [Joiner](#), and [Kumho Tire](#) is critical to a trial court's reliability analysis. [Daubert](#) **651 made abundantly clear that the inquiry is “a flexible one.” [Daubert](#), 509 U.S. at 594, 113 S.Ct. 2786. “The focus, of course, must be solely on principles and methodology, not on the conclusions that they generate.” [Id.](#) at 595, 113 S.Ct. 2786. Yet, [Joiner](#) clarified that “conclusions and methodology are not entirely distinct from one another.” [Id.](#) 522 U.S. at 146, 118 S.Ct. 512. A trial court must also consider the relationship between the methodology applied and conclusion reached. Indeed, “[t]rained experts commonly extrapolate from existing data. But nothing in either [Daubert](#) or the Federal Rules of Evidence requires a [trial] court to admit opinion evidence that is connected to

existing data only by the *ipse dixit* of the expert.” [Id.](#) “A court may conclude that there is simply too great an analytical gap between the data and the opinion proffered.” [Id.](#)

[9] [Kumho Tire](#), as noted above, extended [Daubert](#)'s application to *all* expert testimony. [Id.](#) 526 U.S. at 141, 119 S.Ct. 1167 (“[Daubert](#)'s general holding ... applies not only to testimony based on ‘scientific’ knowledge, but also to testimony based on ‘technical’ and ‘other specialized’ knowledge.”). [Kumho Tire](#) also made clear that

a trial court *may* consider one or more of the more specific factors that [Daubert](#) mentioned when doing so will help determine that testimony's reliability. But, as the Court *37 stated in [Daubert](#), the test of reliability is “flexible,” and [Daubert](#)'s list of specific factors neither necessarily nor exclusively applies to all experts or in every case. Rather, the law grants a [trial] court the same broad latitude when it decides *how* to determine reliability as it enjoys in respect to its ultimate reliability determination.

[Id.](#) at 141–42, 119 S.Ct. 1167 (emphasis in original). Simply put, all of the [Daubert](#) factors are relevant to determining the reliability of expert testimony, yet no single factor is dispositive in the analysis. A trial court may apply some, all, or none of the factors depending on the particular expert testimony at issue. [Savage](#), 455 Md. at 184, 166 A.3d 183 (Adkins, J., concurring) (“[A] trial court is not required to consider any or all of the [Daubert](#) factors in making its reliability determination.”).

[10] Applying [Daubert](#) factors to our interpretation of Rule 5-702 and eliminating [Frye-Reed](#) provides a simpler, more straightforward analysis of expert testimony. There is no longer a need to distinguish new or novel

techniques or determine if testimony embraces a “scientific technique.” Just as this process provides a flexible structure for trial courts, so too does it guide appellate courts reviewing the admission or exclusion of expert testimony. Instead of maintaining two separate, and potentially outcome determinative, standards of review—*de novo* for [Frye](#)-[Reed](#) and abuse of discretion for Rule 5-702—all expert testimony is reviewed under the abuse of discretion standard.¹⁶ See [Joiner](#), 522 U.S. at 143, 118 S.Ct. 512 (“[T]he question of admissibility of expert testimony is ... reviewable under the abuse-of-discretion standard.”).

***38** 5. *Final Thoughts.*

[11] In light of our comments on applying [Daubert](#), *supra* at 33–36, 113 S.Ct. 2786, we offer a few thoughts for judges who will shoulder the implementation of this new-to-Maryland evidentiary standard. Much of the discussion above does not upend a trial court's gatekeeping function. “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. 596, 113 S.Ct. 2786 (citation omitted). To the extent that our decision necessitates change in Maryland courts, we fully endorse Judge Grimm's observations in [Horn](#). The shift to [Daubert](#)

may mean, in a very real sense, that “everything old is new again” with respect to some scientific and technical evidentiary matters long considered settled.

* * *

[J]udges, lawyers and expert witnesses will have to learn to be comfortable refocusing their thinking about the building blocks of what truly makes evidence that is beyond the knowledge and experience of lay persons useful to them in resolving disputes. The beneficiaries of this new approach will be the jurors that have to decide increasingly complex cases. [Daubert](#), [Kumho Tire](#), and now Rule 702 have given us our marching orders, and it is up to the participants in the litigation process to get in step.

[Horn](#), 185 F. Supp. 2d at 554–55.

CONCLUSION

In light of the significant changes in the law concerning expert testimony, as established by [Daubert](#) and its progeny, we adopt the [Daubert](#) standard in Maryland because we find those factors persuasive in interpreting [Maryland Rule 5-702](#).

Since [Daubert](#) is a new interpretation of [Rule 5-702](#), our decision today “applies to this case and any other cases that are pending on direct appeal when this opinion is filed, where the relevant question has been preserved for appellate review.” ***39** [Kazadi](#), 467 Md. at 47, 223 A.3d 554; [Hackney v. State](#), 459 Md. 108, 119, 184 A.3d 414 (2018); [State v. Daughtry](#), 419 Md. 35, 77 n.26, 18 A.3d 60 (2011). In this context, the “relevant question” is whether a trial court erred in admitting or excluding expert testimony under [Maryland Rule 5-702](#) or [Frye](#)-[Reed](#). Therefore, to apply this new evidentiary standard, we remand this case to the Circuit Court for Baltimore City for further proceedings.

JUDGMENT OF THE CIRCUIT COURT FOR BALTIMORE CITY REVERSED. CASE REMANDED TO THAT COURT FOR PRETRIAL PROCEEDINGS AND A NEW TRIAL CONSISTENT WITH THIS OPINION. COSTS TO BE PAID BY APPELLEE/PETITIONER.

Watts, Hotten, and Greene, JJ., dissent.

Dissenting Opinion by Watts, J., which Hotten and Greene, JJ., join.
Respectfully, I dissent. I disagree with the adoption of the [Daubert](#) standard, derived from [Daubert v. Merrell Dow Pharmaceuticals, Inc.](#), 509 U.S. 579, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993). See Maj. Op. at 5–6, 38–39, 236 A.3d at 633, 652. I would hold that the issue of whether or not to move from the [Frye](#)-[Reed](#) analysis and adopt the [Daubert](#) standard for the admissibility of expert testimony in Maryland is not a matter that the Court should decide in this case, *i.e.*, this case is not the proper one in which to make such a change. And, I disagree with the majority opinion that the case should be remanded to the Circuit Court for Baltimore City for application of the [Daubert](#) standard.

See Maj. Op. at 38–39, 236 A.3d at 652. I would hold that the circuit court did not abuse its discretion in admitting the testimony of Cecilia Hall-Carrington, M.D., and that the testimony satisfied the requirements of ****653** [Maryland Rule 5-702](#), without the need to resort to the application of [Frye-Reed](#) or [Daubert](#). The circuit court did not evaluate the admissibility of Dr. Hall-Carrington's testimony under either [Frye-Reed](#) or [Daubert](#), but instead addressed the matter only under [Maryland Rule 5-702](#).

Adopting the ***40** [Daubert](#) standard at this time for use in this case would change the analysis of the case on remand when nothing about the case warrants such a change and no change in existing law is necessary.

At the outset, it would be helpful to discuss the different standards pertaining to the admissibility of expert testimony. In general, [Maryland Rule 5-702](#) governs the admissibility of expert testimony and provides:

Expert testimony may be admitted, in the form of an opinion or otherwise, if the court determines that the testimony will assist the trier of fact to understand the evidence or to determine a fact in issue. In making that determination, the court shall determine (1) whether the witness is qualified as an expert by knowledge, skill, experience, training, or education, (2) the appropriateness of the expert testimony on the particular subject, and (3) whether a sufficient factual basis exists to support the expert testimony.

The third prong—sufficient factual basis—has been interpreted to include two sub-factors: an adequate supply of data and a reliable methodology with which to analyze the data. See [Roy v. Dackman](#), 445 Md. 23, 42-43, 124 A.3d 169, 180 (2015).

In [Reed v. State](#), 283 Md. 374, 391 A.2d 364 (1978), this Court adopted the standard set forth by the United States Court of Appeals for the District of Columbia Circuit in [Frye v. United States](#), 293 F. 1013, 1014 (D.C. Cir.

1923), setting forth a requirement for the admissibility of expert testimony that is based on a novel scientific method.

Under the standard known as the [Frye-Reed](#) analysis, a trial court must determine as a threshold matter whether a novel scientific method is generally accepted within the relevant scientific community before testimony based on that method can be admitted. See [Reed](#), 283 Md. at 381, 389, 391 A.2d at 368, 372; see also [Dixon v. Ford Motor Co.](#), 433 Md. 137, 149-50, 70 A.3d 328, 335 (2013) (“A [Frye/Reed](#) analysis is required, as a prerequisite to the application of [Rule 5-702](#), only when the proposed expert testimony involves a ‘novel scientific method,’ in which event there must be some assurance that the novel method has ***41** gained general acceptance within the relevant scientific community.”). In such circumstances, the trial court conducts a [Frye-Reed](#) hearing, which is a “pretrial hearing at which the proponent of the scientific evidence must establish such general acceptance if the admissibility of the evidence is challenged.” [Phillips v. State](#), 451 Md. 180, 184 n.1, 152 A.3d 712, 714 n.1 (2017).

By contrast, federal courts and a number of States utilize the [Daubert](#) approach, derived from the United States Supreme Court's decision in [Daubert](#), 509 U.S. 579, 113 S.Ct. 2786, for the admissibility of expert testimony on scientific matters. In [Daubert](#), [id.](#) at 588, 113 S.Ct. 2786, relying on the language of [Federal Rule of Evidence 702](#), the Supreme Court acknowledged that [Rule 702](#) did not “establish[] ‘general acceptance’ as an absolute prerequisite to admissibility.” At that time, [Federal Rule of Evidence 702](#) governing expert testimony provided: “If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise.” [Daubert](#), 509 U.S. at 588, 113 S.Ct. 2786. The Supreme Court held that [Rule 702](#)'s standards, not the general acceptance standard set forth ****654** in [Frye](#), should be applied with respect to the admissibility of scientific expert testimony. See [Daubert](#), 509 U.S. at 589, 113 S.Ct. 2786. The Supreme Court explained that, before admitting expert testimony on scientific matters, a trial court must determine as a preliminary matter, “whether the reasoning or methodology underlying the

testimony is scientifically valid and [] whether that reasoning or methodology properly can be applied to the facts in issue.”

[Id.](#) at 592-93, 113 S.Ct. 2786.

The Supreme Court provided “general observations” about how a trial court should assess the validity and reliability of scientific expert testimony, and set forth the following factors: (1) “whether a theory or technique ... can be (and has been) tested”; (2) “whether the theory or technique has been subjected to peer review and publication”; (3) “the known or *42 potential rate of error, and the existence and maintenance of standards controlling the technique's operation”; and (4) “general acceptance.”

[Id.](#) at 593-94, 113 S.Ct. 2786 (cleaned up). As to “general acceptance,” the Supreme Court pointed out that “[a] reliability assessment does not require, although it does permit, explicit identification of a relevant scientific community and an express determination of a particular degree of acceptance within that community.” [Id.](#) at 594, 113 S.Ct. 2786 (cleaned up). The Supreme Court explained that the approach it set forth under [Rule 702](#) is “a flexible one” and “[t]he focus ... must be solely on the principles and methodology, not on the conclusions that they generate.”

[Id.](#) at 594-95, 113 S.Ct. 2786.

The Supreme Court has since elaborated on the [Daubert](#) analysis. In [General Electric Co. v. Joiner](#), 522 U.S. 136, 146, 118 S.Ct. 512, 139 L.Ed.2d 508 (1997), the Supreme Court rejected the contention that [Daubert](#) only permits a trial court to evaluate the methodology of studies and not an expert's conclusions. The Supreme Court explained: “Trained experts commonly extrapolate from existing data. But nothing in either [Daubert](#) or the Federal Rules of Evidence requires a [trial] court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert.” [Id.](#) The Supreme Court recognized that a trial court could “conclude that there is simply too great an analytical gap between the data and the opinion proffered.” [Id.](#) In [Kumho Tire Co. v. Carmichael](#), 526 U.S. 137, 148-49, 119 S.Ct. 1167, 143 L.Ed.2d 238 (1999), the Supreme Court held that the “gatekeeping” standard and “general principles” of [Daubert](#) applied to all expert testimony governed by [Federal Rule of Evidence 702](#), meaning “scientific,” “technical,” and “other specialized” testimony. The Supreme

Court also explained that the [Daubert](#) factors are “meant to be helpful, not definitive[.]” and “[i]ndeed, those factors do not all necessarily apply even in every instance in which the reliability of scientific testimony is challenged.” [Id.](#) at 151, 119 S.Ct. 1167.

Over the past several years, there has been discussion in the legal community that Maryland utilizes a standard that is a *43 hybrid of [Frye-Reed](#) and [Daubert](#), and speculation that Maryland has been moving from [Frye-Reed](#) to [Daubert](#). In 2009, in [Blackwell v. Wyeth](#), 408 Md. 575, 591, 605, 971 A.2d 235, 245, 253 (2009), in reviewing [Frye-Reed](#) jurisprudence, this Court stated that various federal courts had “had occasion to scrutinize the reliability of the analytical framework utilized by an expert in formulating a novel theory of science” and we observed “that they utilized the [Daubert](#) standard rather than [Frye](#).” (Cleaned up). We noted that the concept of the “analytical gap” had developed beginning with [Joiner](#), 522 U.S. at 146, 118 S.Ct. 512, and that the “analytical gap” concept had been used by federal courts applying [Daubert](#) and by some State courts applying [Frye](#). See [**655 Blackwell](#), 408 Md. at 604-07, 971 A.2d at 253-54. After reviewing relevant case law, we concluded that “[g]enerally accepted methodology[] must be coupled with generally accepted analysis in order to avoid the pitfalls of an ‘analytical gap.’ ” [Id.](#) at 608, 971 A.2d at 255. In other words, this Court incorporated the concept of the “analytical gap” into Maryland's [Frye-Reed](#) analysis.

In [Rochkind v. Stevenson](#), 454 Md. 277, 295-96, 164 A.3d 254, 265 (2017) (“[Stevenson I](#)”), when this case first came to the Court, we applied the “analytical gap” concept under [Maryland Rule 5-702\(3\)](#) and held that the expert's (Dr. Hall-Carrington's) testimony lacked a sufficient factual basis, as required by the Rule, and that the circuit court abused its discretion in allowing Dr. Hall-Carrington to render an opinion that lead exposure can cause ADHD generally and that lead caused Stevenson's ADHD specifically. In so holding, we explained that the circuit court had “failed to determine whether Stevenson's proffered sources logically supported Dr. Hall-Carrington's opinion that lead exposure can cause ADHD.” [Id.](#) at 295, 164 A.3d at 264. We

applied the concept of the “analytical gap” and concluded that the circuit court clearly erred by “fail[ing] to check for an ‘analytical gap’ between the expert’s data and her conclusion.” [Id.](#) at 295, 164 A.3d at 264. Notably, in [Stevenson I](#), [id.](#) at 295, 164 A.3d at 265, because we concluded that Dr. Hall-Carrington’s ADHD causation testimony should have been excluded under [*44 Maryland Rule 5-702](#), we declined to reach the issue of whether the circuit court should have held a [Frye-Reed](#) hearing as to Dr. Hall-Carrington’s general causation testimony.

A few weeks later, this Court issued its opinion in [Savage v. State](#), 455 Md. 138, 166 A.3d 183 (2017). In [Savage](#), [id.](#) at 159, 166 A.3d at 195, we quoted approvingly from [Giddens v. State](#), 148 Md. App. 407, 415-16, 812 A.2d 1075, 1080 (2002), [cert. denied](#), 374 Md. 83, 821 A.2d 370 (2003), in which the Court of Special Appeals explained:

[Frye](#) sets forth only a legal standard which governs the trial judge’s determination of a threshold issue. Testimony based on a technique which is found to have gained “general acceptance in the scientific community” may be admitted into evidence, but only if a trial judge also determines in the exercise of his discretion, as he must in all other instances of expert testimony, that the proposed testimony will be helpful to the jury, that the expert is properly qualified, etc. Obviously, however, if a technique does not meet the [Frye](#) standard, a trial judge will have no occasion to reach these further issues.

...

It is also well settled, however, that if the relevant scientific community is in general agreement that a properly conducted scientific test will produce an accurate result, the [Frye-Reed](#) test does not operate to exclude conflicting expert opinions based upon such a test.

We explained that there was “no reason to depart from this standard in the appropriate case where it applies[,]” and that “[t]he issue is whether the expert bridged the ‘analytical gap’ between accepted science and his [or her] ultimate conclusions in a particular case.” [Savage](#), 455 Md. at 160, 166 A.3d at 195-96.

In a concurring opinion, the Honorable Sally D. Adkins stated that this Court should adopt the [Daubert](#) approach to the

admissibility of scientific testimony. See [id.](#) at 174, 166 A.3d at 204 (Adkins, J., concurring). Judge Adkins stated that, “[s]ince [Daubert](#) was decided, the majority of states have [*45](#) departed from the [Frye](#) standard in favor of the Supreme Court’s more flexible approach.” [Id.](#) at 178, 166 A.3d at 206 (Adkins, J., concurring) (cleaned up). [**656](#) Judge Adkins posited that our recent case law illustrated that the Court has modified its application of [Frye-Reed](#) and gradually moved toward the federal [Daubert](#) approach. [Id.](#) at 180, 166 A.3d at 208 (Adkins, J., concurring).

Judge Adkins identified two ways in which she saw that the Court had adjusted the application of [Frye-Reed](#). First, “we have liberally applied the [Frye-Reed](#) analysis to testimony based on any scientific principle—new or old[,]” thereby, “like [Daubert](#), [] implicitly recogniz[ing] that a trial judge’s gatekeeping function should not be limited to new scientific theories—old ‘junk science’ should be kept out of our courts as well.” [Id.](#) at 180, 166 A.3d at 208 (Adkins, J., concurring). According to Judge Adkins, we “suggested that all testimony based on scientific techniques is subject to [Frye-Reed](#) by encouraging trial courts to take judicial notice when a scientific method is well-established in the relevant community, rather than skipping [Frye-Reed](#) because the method is not novel.” [Id.](#) at 180, 166 A.3d at 208 (Adkins, J., concurring) (cleaned up). And, second, in Judge Adkins’s view, we had “modified the reach of [Frye-Reed](#)—inching closer to the federal [Daubert](#) standard—by using it not only to evaluate scientific methods, but also to assess scientific conclusions.” [Id.](#) at 181, 166 A.3d at 209 (Adkins, J., concurring). Judge Adkins stated that “[t]he federal courts’ adoption of [Daubert](#), coupled with our own jurisprudential drift towards the [Daubert](#) standard, support departure from [Frye-Reed](#).” [Id.](#) at 187, 166 A.3d at 212 (Adkins, J., concurring). Thus, in deciding [Savage](#), Judge Adkins would have “do[ne] away with [Frye-Reed](#) and h[eld] that the [Daubert](#) factors used to interpret [Federal Rule of Evidence] 702 are persuasive in interpreting [Maryland] Rule 5-702.” [Id.](#) at 186, 166 A.3d at 211 (Adkins, J., concurring) (footnote omitted).

In her concurring opinion, Judge Akins explained that [Stevenson I](#) was not the appropriate case in which to address

a *46 potential adoption of the [Daubert](#) standard. As quoted by the Majority, Judge Adkins stated:

Furthermore, unlike [[Stevenson I](#)], our most recent case addressing the admissibility of scientific expert testimony, we can only dispose of the case at hand by applying [Frye-Reed](#). In [[Stevenson I](#)], we declined to address the parties' arguments regarding [Frye-Reed](#) and instead held that the expert testimony was inadmissible under [Rule 5-702](#) because the petitioner had appealed the trial court's determination as to both standards. Here, [Savage](#) only challenges the exclusion of [the expert's] testimony under [Frye-Reed](#).

Maj. Op. at 23–24, 236 A.3d at 643 (quoting [Savage](#), 455 Md. at 175 n.1, 166 A.3d at 204 n.1 (Adkins, J., concurring)) (alterations in original).

The following year, in [Sissoko v. State](#), 236 Md. App. 676, 707-08, 182 A.3d 874, 892, cert. denied, 460 Md. 1, 188 A.3d 917 (2018), the Court of Special Appeals discussed Judge Adkins's concurring opinion, agreeing that Maryland jurisprudence was drifting toward the [Daubert](#) standard. The Court of Special Appeals stated that there had been a “drift toward applying [Frye-Reed](#) to scientific conclusions, not just techniques[.]” thereby expanding [Frye-Reed](#). [Id.](#) at 708, 182 A.3d at 893.

To be sure, the evolution of case law applying and discussing [Frye-Reed](#) has led to discussion in the legal community that Maryland is moving away from [Frye-Reed](#) and toward [Daubert](#). For example, in two articles published in The Daily Record, one after [Stevenson I](#) was issued and another after [Savage](#) was issued, Ronald D. Getchey, Esq., and Charles A. Danaher, Esq., who are attorneys on

brief for Rochkind in this case, discuss whether there would be a **657 change from [Frye-Reed](#) to [Daubert](#) in Maryland. See Ronald D. Getchey and Charles A. Danaher, “*Stevenson v. Rochkind*: Out of the [Frye](#)-ing pan,” The Daily Record, July 26, 2017; Ronald D. Getchey and Charles A. Danaher, “Why [Frye-Reed](#) appears to be on life support in Md.,” The Daily Record, Aug. 14, 2017. In two separate posts on the Maryland Appellate Blog,¹ one after *47 [Savage](#) was issued and another after [Sissoko](#) was issued, Derek Stikeleather, Esq., who is an attorney on brief for Rochkind in this case, speculated that [Frye-Reed](#) was coming to an end in Maryland. See Derek Stikeleather, “The End of Frye-Reed,” Maryland Appellate Blog, Oct. 5, 2017, available at <https://mdappblog.com/2017/10/05/the-end-of-frye-reed/> [<https://perma.cc/62YQ-K7BV>]; Derek Stikeleather, “Update: The End of Frye-Reed Draws Closer,” Maryland Appellate Blog, May 1, 2018, available at <https://mdappblog.com/2018/05/01/update-the-end-of-frye-reed-draws-closer/> [<https://perma.cc/YC5U-JQD2>].

From my perspective, regardless of whether Maryland jurisprudence on [Frye-Reed](#) has evolved over the years, there is no need to pick a side between [Frye-Reed](#) and [Daubert](#), and certainly not in this case. Although Rochkind invites the Court to adopt the [Daubert](#) standard, I would decline the invitation. This case is the result of several trials in which the circuit court did not conduct either a [Maryland Rule 5-702](#) or [Frye-Reed](#) hearing. When the case was previously before us, in [Stevenson I](#), 454 Md. at 295-96, 164 A.3d at 265, we held that Dr. Hall-Carrington's testimony lacked a sufficient factual basis as required by [Maryland Rule 5-702\(3\)](#) and remanded the case to the circuit court for a new trial on damages, with specific instructions concerning the admissibility of Dr. Hall-Carrington's testimony on causation. On remand, at trial, the circuit court again admitted Dr. Hall-Carrington's testimony. For this Court to now overhaul the standard by which expert testimony in Maryland is admitted at trial, *i.e.*, the standard by which Dr. Hall-Carrington's testimony is to be evaluated, and remand the case again, after the circuit court admitted Dr. Hall-Carrington's testimony in this case on remand after receiving specific instructions from this Court, would undermine the finality and predictability of the court system. The unique procedural process of this

case precludes the Court from adopting a new standard today to be applied in the case. Like Judge Adkins, I would conclude that this case differs from [Savage](#) in that in [Savage](#) “we [could] only dispose of the case at hand by applying [Frye-Reed](#)[.]” *48 [Savage](#), 455 Md. at 175 n.1, 166 A.3d 183 (Adkins, J., concurring), and here the admissibility of Dr. Hall-Carrington's testimony was addressed under [Maryland Rule 5-702](#), making this not a case in which this Court should entertain a discussion of adopting the [Daubert](#) standard let alone actually implementing such a change.

Although Rochkind relies on the District of Columbia's adoption of [Daubert](#) in [Motorola Inc. v. Murray](#), 147 A.3d 751 (D.C. 2016), and Judge Adkins's concurring opinion in [Savage](#), 455 Md. 138, 166 A.3d 183, the procedural posture of this case is unlike the posture of both the [Motorola](#) and [Savage](#) cases, and different even from most cases adopting [Daubert](#). Moreover, this Court was well aware of the District of Columbia's adoption of the [Daubert](#) standard, in 2016, in [Motorola](#) when, in 2017, we declined to do the same in [Savage](#). In [Motorola](#), 147 A.3d at 752, the trial court **658 held four weeks of evidentiary [Frye](#) hearings to determine the admissibility of the plaintiffs' causation expert testimony. The trial court concluded that some of the expert testimony on causation would be admissible under [Frye](#), but that “most, if not all” of the testimony would be excluded under [Federal Rule of Evidence 702](#) and the [Daubert](#) standard. *Id.* The trial court certified the [Daubert](#) adoption question of law for interlocutory appeal. *Id.* And, the District of Columbia Court of Appeals granted a motion for interlocutory review, and adopted [Federal Rule of Evidence 702](#), *i.e.*, [Daubert](#). *Id.* at 758-59. Unlike Maryland, the District of Columbia does not have its own codified rules of evidence and, therefore, does not have its own version of [Rule 702](#). This is different than the situation in Maryland, in which we have [Maryland Rule 5-702](#), which provides for an analysis that is separate from [Frye-Reed](#) and its progeny's requisites for admission of expert testimony. Moreover, unlike the District of Columbia Court of Appeals case, this matter is not before us with a record of voluminous evidence weighing in favor of or against the differing standards for admission of expert evidence. In this case, the circuit court never considered or weighed

admission of expert testimony under [Frye-Reed](#) or [Daubert](#).

*49 Likewise, unlike this case, in [Savage](#), 455 Md. at 143-50, 166 A.3d at 186-90, the trial court held an extensive pre-trial evidentiary hearing and determined that the [Frye-Reed](#) standard had not been met. On review, this Court agreed and expressly concluded that there was no reason to abandon the [Frye-Reed](#) standard. In a concurring opinion, however, Judge Adkins wrote that she was “persuaded in part” by the [Motorola](#) decision that this Court should adopt [Daubert](#). [Savage](#), 455 Md. at 185, 166 A.3d at 211 (Adkins, J., concurring). Judge Adkins's discussion was obviously not the holding of this Court and necessarily addressed the circumstances of [Savage](#), which as Judge Adkins acknowledged involved a different posture from [Stevenson I](#), and this case.

In contrast to [Motorola](#) and [Savage](#), we do not have extensive evidence gathered from a pre-trial [Frye-Reed](#) hearing. As we observed in [Savage](#), 455 Md. at 160 n.6, 166 A.3d at 196 n.6, in [Stevenson I](#), 454 Md. 277, 164 A.3d 254, because we determined that the circuit court abused its discretion under [Maryland Rule 5-702](#) in admitting the expert testimony, we did not address the issue of whether the trial court erred in not holding a [Frye-Reed](#) hearing. We now face a case even further attenuated from [Stevenson I](#), because, on remand, again the circuit court did not hold a [Frye-Reed](#) hearing and instead acted pursuant to specific instructions from this Court pertaining to the admission of the expert testimony, and the instructions did not involve applying [Frye-Reed](#) let alone [Daubert](#). I see no reason to revisit the standard for admissibility of scientific evidence under [Frye-Reed](#) where, here, like the first iteration of this case, disposition of the issues does not involve applying [Frye-Reed](#) or [Daubert](#).

Maryland case law on the admission of expert testimony pertaining to scientific matters is understandably capable of adaptation and, in my view, as we concluded in [Savage](#), 455 Md. at 160, 166 A.3d at 195, just three years ago, there is no need for a change. The only thing that has changed since the Majority's holding and Judge Adkins's concurrence

in [Savage](#) is that there has been speculation in the legal community about a potential change from [Frye-Reed](#) to [Daubert](#), and four *50 members of the Court are now in favor of the change. In announcing the decision to adopt the [Daubert](#) standard, the Majority simply states that “Rochkind now squarely poses th[e] question” and “we answer ... in the affirmative[.]” Maj. Op. at 5–6, 236 A.3d at 633 . Clearly, neither of the circumstances **659 that would warrant a departure from the doctrine of *stare decisis*—a prior decision is clearly wrong and contrary to established principles or existing precedent has been superseded by significant changes in the law or facts—applies here. See [Conover v. Conover](#), 450 Md. 51, 66, 146 A.3d 433, 442 (2016); [DRD Pool Serv., Inc. v. Freed](#), 416 Md. 46, 64, 5 A.3d 45, 55-56 (2010). Since the Majority’s holding in [Savage](#), there has been no new case law from this Court indicating that our majority holding was wrong and there have been no further developments in the law since [Savage](#) leading Maryland case law any closer to adoption of the [Daubert](#) standard. Indeed, the Majority’s discussion of the principle of *stare decisis* relies entirely on information that was available to Court at the time we issued [Stevenson I](#) and [Savage](#). In an attempt to justify that the exceptions to the doctrine of *stare decisis* are met, the Majority states only:

Over the last forty years, Maryland’s appellate courts have considerably modified the [Frye-Reed](#) standard. The [Frye-Reed](#) of 1978 is markedly different than the “[Frye-Reed Plus](#)” of 2020. With [Daubert](#), and eventually [Joiner](#) and [Kumho Tire](#), the Supreme Court disavowed the [Frye](#) standard for the more flexible [Daubert](#) approach. A supermajority of our sister jurisdictions followed suit. Clearly, a significant change in the law has occurred, permitting us to depart from *stare decisis* and adopt the [Daubert](#) standard in this instance.

Majority Op. at 29, 236 A.3d at 646 (footnote omitted). The Majority does not claim that this Court’s prior adoption of the [Frye-Reed](#) standard was clearly wrong, or allege or even mention any developments subsequent to this Court’s decisions in [Stevenson I](#) and [Savage](#) that would warrant a departure from existing case law.

*51 Equally as important, though, as Judge Adkins recognized in [Savage](#), this case is plainly not the case in which to entertain making a change from [Frye-Reed](#) to [Daubert](#), as the issue of the admissibility of Dr. Hall-Carrington’s testimony has consistently been decided under [Maryland Rule 5-702](#), not under [Frye-Reed](#). It is undisputed that, on remand, in admitting Dr. Hall-Carrington’s testimony, the circuit court did not conduct a [Frye-Reed](#) evidentiary hearing and the circuit court did not make any findings under [Frye-Reed](#), such as whether a novel scientific method was involved and whether that method was generally accepted within the relevant scientific community. Indeed, Rochkind’s counsel explicitly agreed with the circuit court that a [Frye-Reed](#) hearing was not appropriate under the circumstances and affirmatively stated that “the appropriate forum [was] a [[Maryland Rule](#)] 5-702 hearing.” The circuit court confirmed, asking: “[Y]ou’re not asking for the [Frye-Reed](#) because you believe that under these circumstances it’s a 5-702, correct?” Rochkind’s counsel answered: “Correct.”² In other words, in the circuit court, it was clear that case was decided under **660 [Maryland Rule 5-702](#), not under [Frye-Reed](#) and certainly not [Daubert](#).³

*53 Put plainly, it is obvious that the issue of the admissibility of Dr. Hall-Carrington’s **661 testimony, throughout the many trials in this case, has been considered only under [Maryland Rule 5-702](#), that Rochkind expressly agreed that the matter should be considered under [Maryland Rule 5-702](#) and that a [Frye-Reed](#) hearing was not appropriate under the circumstances, and that no findings were made under [Frye-Reed](#) in the circuit court. Stated otherwise, under the circumstances of this case, the Court has no basis on which to conclude that the [Frye-Reed](#) analysis should be abandoned in favor of the [Daubert](#)

analysis. This Court should refrain from deciding a matter not at issue in the circuit court and making a decision not warranted by the circumstances of the case. In my view, under no circumstance should we switch from [Frye-Reed](#) to [Daubert](#), in a case in which no issue pertaining to either approach was decided by the circuit court—and the case is back before this Court after a remand that did not involve instructions from the Court pertaining to [Frye-Reed](#) or [Daubert](#)—simply because one party now seizes the opportunity to pose the question of whether this Court should adopt the [Daubert](#) standard.

*54 Even if the issue of whether to abandon the [Frye-Reed](#) standard and adopt the [Daubert](#) standard were squarely before the Court, *i.e.*, the circuit court had made findings under [Frye-Reed](#) or one of the parties had argued the issue in the circuit court, from my perspective, adoption of the [Daubert](#) standard should not be done without information about the impact that adopting [Daubert](#) would have on African American people, people of color, and people of various socioeconomic status in Maryland. In a brief of amicus curiae filed in this case, the Maryland Association for Justice indicates that the [Daubert](#) standard has resulted in some plaintiffs not being able to effectively present expert witness testimony. The Maryland Association for Justice points to studies by professors demonstrating that application of the [Daubert](#) standard “disproportionately and negatively affects claimants of color.” Andrew W. Jurs and Scott DeVito, [A Tale of Two Dauberts: Discriminatory Effects of Scientific Reliability Screening](#), 79 Ohio St. L.J. 1107, 1144 (2018). The professors’ analysis demonstrated that “[Daubert](#) [has] resulted in fewer claims by black claimants, and that once the claimants are out of the system, they stay out.” *Id.* at 1144-45. This analysis concerning the impact of [Daubert](#) is extremely troubling. At a minimum, before any decision to adopt the [Daubert](#) standard, I would recommend that the Standing Committee on Rules of Practice and Procedure undertake a study of the impact of [Daubert](#) and make a determination as to whether adoption of [Daubert](#) in Maryland will negatively affect African American people,

people of color, or people of limited financial means as potential litigants.

Wisely, the majority opinion does not “reject the seriousness of th[e] contention” that the “Rules Committee is the more appropriate forum to study the potential impact the [Daubert](#) standard” would have in Maryland. Maj. Op. at 29–30 n.15, 236 A.3d at 646–47 n.15. But, the Majority summarily disposes of the suggestion by alleging that other scholarly research has come to “the opposition conclusion.” *See* Maj. Op. at 29–30 n.15, **662 236 A.3d at 646–47 n.15. The Majority identifies only one such source, and by its’ own admission, there is *55 disagreement as to the impact of the [Daubert](#) standard. Yet, the Majority is willing to implement that standard in our State without study. Unfortunately, rather than refer the matter to the Rules Committee, the Majority states that, “[t]his Court is well suited to weigh the advantages and disadvantages of modifying our approach to any area of the law—as we often do. That this change implicates our interpretation of the Maryland Rules does not necessitate a referral to the Rules Committee.” Maj. Op. at 30 n.15, 236 A.3d at 647 n.15. With this language, the Majority attempts to equate the change from the [Frye-Reed](#) standard to the adoption of the [Daubert](#) standard in Maryland to a mere interpretation of the Maryland Rules and not the significant change—that reads into [Maryland Rule 5-702](#) a new evidentiary standard that was not previously a part of the Rule—that it is. Other than including a quote in a parenthetical from a fifteen-year-old article—Edward K. Cheng & Albert H. Yoon, *Does Frye or Daubert Matter? A Study of Scientific Admissibility Standards*, 91 Va. L. Rev. 471 (2005)—the Majority provides no information about the impact of [Daubert](#), does no weighing about the effects of the switch, and gives no information on how litigants in Maryland will be impacted.⁴ **664 The Majority *58 appears to assert that the matter of [Daubert](#)’s impact in Maryland is resolved by one article from fifteen years ago that the Majority does not even contend provides any information about the impact of the implementation of [Daubert](#) in Maryland. The Majority provides no principled reason for declining to refer the matter to the Rules Committee.

To be sure, the Committee note to [Maryland Rule 5-702](#) states that “[t]he required scientific foundation for the admission of novel scientific techniques or principles is left to development

through case law.” (Citation omitted). The Committee note was included with [Maryland Rule 5-702](#), which was adopted on December 15, 1993 and became effective on July 1, 1994, at the time when the Standing Committee on Rules of Practice and Procedure undertook to revise the Maryland Rules to be consistent with the Federal Rules. [Daubert](#) was issued on June 28, 1993, see [Daubert](#), 509 U.S. 579, 113 S.Ct. 2786, just months before the adoption of [Maryland Rule 5-702](#). The adoption of [Maryland Rule 5-702](#) and inclusion of the Committee note occurred before the timeframe in which any impact of the [Daubert](#) standard on litigants would have been at issue, and the Committee note obviously predates by decades Jurs's and DeVito's article concerning studies showing the negative impact of [Daubert](#) on some groups. Although the Committee note to [Maryland Rule 5-702](#) could be read to mean that this Court can adopt the [Daubert](#) standard through case law, in my view, given the weighty issues at stake, there is a need for study of the matter. In addition to the circumstance that this case is not the appropriate one for entertaining *59 the change, before deciding whether to adopt the [Daubert](#) standard, this Court should have its impact investigated and the Court should attempt to understand the impact on the community.

The circumstance that there may have been a drift from [Frye-Reed](#) to [Daubert](#) and that portions of the [Daubert](#) analysis may be already be in place in Maryland case law does not negate the need for a study of the impact of [Daubert](#) on litigants. It should not be said that because this Court may have already modified the [Frye-Reed](#) standard, we should not investigate any burden that the [Daubert](#) standard may impose on Maryland's citizenry. The Court should want to ensure that equal access to the court system is provided to all and that case law is developed in a manner that is consistent with equal access. Information on the impact of the [Daubert](#) standard is information that the courts, the Bar, and the legal profession in general should be made aware of before this Court determines whether to take the action of adopting the [Daubert](#) standard for use in our State.

Lastly, in this case, I would hold that the circuit court did not abuse its discretion in admitting Dr. Hall-Carrington's testimony under [Maryland Rule 5-702](#). This **665 Court

has repeatedly reiterated that “[t]he admissibility of expert testimony is a matter largely within the discretion of the trial court[; t]hus, we review a trial court's decision to admit or exclude expert testimony only for an abuse of discretion.”

[Rochkind v. Stevenson](#), 454 Md. 277, 285, 164 A.3d 254, 258-59 (2017) (cleaned up). In [Blackwell](#), 408 Md. at 618, 971 A.2d at 261, this Court stated:

In the context of [Rule 5-702](#), we have previously stated that, the admissibility of expert testimony is within the sound discretion of the trial judge and will not be disturbed on appeal unless clearly erroneous. Put another way, it is well settled that the trial court's determination regarding the qualification of experts may be reversed if it is founded on an error of law or some serious mistake, or if the trial court *60 clearly abused its discretion and will seldom constitute a ground for reversal.

(Cleaned up).

Utilizing the principles expressed above, I would conclude that the circuit court did not abuse its discretion under [Maryland Rule 5-702](#) in admitting Dr. Hall-Carrington's testimony and, specifically, the testimony that Stevenson has a physical [brain injury](#) attributable to lead exposure that has manifested in symptoms of inattention, hyperactivity, impulsivity, and IQ loss. On remand, the circuit court specifically described the procedural history of the case and that the case had come back from the Court of Appeals with the Court having concluded that there was an insufficient link, *i.e.*, a gap, between Dr. Hall-Carrington's opinion that lead exposure caused ADHD and the data. The circuit court understood that the issue that was before the court was whether there was a sufficient factual basis to permit Dr. Hall-Carrington to testify that lead exposure caused attention deficits, hyperactivity, and cognitive development problems. As Rochkind's counsel characterized it, Dr. Hall-Carrington's proposed testimony involved the ability to render “specific causation opinions regarding attentional difficulty, things that may lead to or some of the symptoms of ADHD.” After framing the issue, the circuit court stated, among things,

“[s]o there's no objection to not having a hearing where there's live testimony because all parties are satisfied that what is before the [c]ourt is [t]hat the [c]ourt needs to make a decision under 5-702-3.” The parties agreed that no hearing, [Frye](#)-[Reed](#) or otherwise, was necessary. After hearing extensive argument from the parties as to whether Dr. Hall-Carrington's testimony would be admissible under [Maryland Rule 5-702\(3\)](#), which included references to Dr. Hall-Carrington's prior trial testimony detailing the numerous sources of information she reviewed pertaining to Stevenson as well as her review of the EPA-ISA, and references to the requirements of the Rule, the circuit court ruled that it was satisfied that Dr. Hall-Carrington's opinion would assist “the trier of fact ... [and that] the trier of fact would be able to evaluate the reasoning underlying that opinion.” The ***61** circuit court ruled that it was “satisfied that the research does show that lead exposure can cause general attention deficits and hyperactivity[.]” In other words, the circuit court considered whether there was an analytical gap between Dr. Hall-Carrington's data and her opinion and ruled that the testimony satisfied [Maryland Rule 5-702\(3\)](#), as there was a sufficient factual basis to support the expert's causation testimony.

The circuit court was correct. There was a sufficient factual basis to support Dr. Hall-Carrington's testimony, as there was an adequate supply of data and she provided a reliable method for attributing Stevenson's injuries to lead exposure.⁵ As ****666** to an adequate supply of data, Dr. Hall-Carrington testified that she reviewed and relied upon numerous records and documents concerning Stevenson to form the basis for her opinions, including, among other things: birth records; records from the Pediatric Ambulatory Center early childcare clinic of the University of Maryland; records from the Greater Baltimore Medical Center clinic; records from Mercy Medical Center clinic; records from Kennedy Krieger Institute; Kennedy Krieger Institute's social work records; a neuropsychological evaluation performed by Dr. Thomas Ley; blood-lead records from the Maryland Department of the Environment; records from Mount Washington Pediatric Hospital; a neuropsychological evaluation by Dr. William Collins; school records; the evaluation report and trial testimony of Dr. Robert Kraft; the evaluation report of Stevenson's psychologist, Dr. Cynthia Munro; the report of Stevenson's psychiatrist, Dr. Neil Blumberg; the 2014 trial testimony of Stevenson's mother, Charlene Montgomery; and the November 2017 deposition of Stevenson.

Dr. Hall-Carrington testified that she was familiar with and had read the portion related to lead contained in the Environmental Protection Agency's 2013 publication, the EPA-ISA, ***62** which she described as “a review of all the research from around the world and it's a peer reviewed articles, but it's a review of all the research, scientific research that was available at the time. [The EPA] actually go[es] through hundreds of articles in forming [] opinions in this document.” Dr. Hall-Carrington testified that she was also familiar with the underlying studies that the Environmental Protection Agency cited to and relied on. Dr. Hall-Carrington testified that she reviewed EPA-ISA findings and there was documented a “causal relationship” between even low levels of lead exposure, of 2 to 8 micrograms/deciliter ($\mu\text{g}/\text{dL}$), and “Cognitive Function Decrements” with learning, memory, and executive function. Dr. Hall-Carrington testified that EPA-ISA showed a “causal relationship” between externalizing behaviors such as attention, impulsivity, and hyperactivity and lead exposure in children with blood-lead levels between 7 and 14 $\mu\text{g}/\text{dL}$. Dr. Hall-Carrington also testified that the EPA-ISA concluded that there is a “likely causal relationship” between internalizing behaviors such as anxiety and depression and lead exposure in children with blood-lead levels “about 14” $\mu\text{g}/\text{dL}$.

As to reliable methodology, Dr. Hall-Carrington's opinions were not conclusory or *ipse dixit*, “because I said so,” opinions. Dr. Hall-Carrington's thorough review of the numerous records related to Stevenson gave her specific and detailed information related to Stevenson's medical history, including prior physical examinations and the results of clinical tests. It is not necessary that an expert witness conduct a physical examination of a person before being permitted to render an opinion. See [Levitas v. Christian](#), 454 Md. 233, 241, 253-54, 164 A.3d 228, 233, 240-41 (2017) (In a lead paint case, this Court held that a trial court abused its discretion in excluding a plaintiff's expert's testimony on the ground that he had not examined the plaintiff, and had instead relied on a report from another doctor who had examined the plaintiff.); [Sugarman v. Liles](#), 460 Md. 396, 403-05, 410, 190 A.3d 344, 348-39, 352 (2018) (In a lead paint case, a pediatrician who was an expert for the plaintiff, as well as a pediatrician ****667** who was an expert for the defendant, did not examine the plaintiff, and instead ***63** relied on his medical records, the report of another doctor who had examined the plaintiff, and other documents.). And, although we indicated in [Sugarman](#), 460 Md. at 424, 190 A.3d at 360, that the EPA-ISA does not provide clinical criteria

for determining whether an individual has been affected by lead, Dr. Hall-Carrington did not rely exclusively on the EPA-ISA in rendering her opinion as to causation concerning Stevenson. It is clear that Dr. Hall-Carrington based her opinion on numerous sources containing information specific to Stevenson. Dr. Hall-Carrington conducted a thorough review and analysis of, among other things, various medical records, neuropsychological evaluations, and other records related to Stevenson, and was capable of performing a differential analysis through that review. This analysis led Dr. Hall-Carrington to render an opinion to a reasonable degree of medical probability that lead exposure was a substantial contributing factor in causing Stevenson's brain impairments that manifested in an IQ loss of five to six points, a learning disability, and neurocognitive behavioral effects including hyperactivity, impulsivity, and attention decrements. It is clear that Dr. Hall-Carrington did not simply apply the conclusions of the EPA-ISA to Stevenson's case without analysis of medical and other information pertaining to Stevenson, but instead relied upon a plethora of records and reports specifically related to Stevenson as well as her own training, experience, and expertise in treating children with [lead poisoning](#), to render her opinion. In my view, Dr. Hall-Carrington's testimony at trial more than satisfied the requirements of [Maryland Rule 5-702\(3\)](#), and specifically satisfied the Rule's requirement that expert testimony be supported by a sufficient factual basis, including an adequate supply of data and a reliable methodology.

I disagree with the Majority's conclusion that the circuit court abused its discretion in admitting Dr. Hall-Carrington's testimony. [See](#) Maj. Op. at 26–27, 236 A.3d at 644–45. The Majority's analysis on this point departs from the record and is wrong on this point in multiple ways. The Majority states that, in admitting Dr. Hall-Carrington's testimony, the circuit court relied solely on [Stevenson I](#) and the Majority implies

[*64](#) that the circuit court found that in [Stevenson I](#) this Court concluded that the EPA-ISA required a finding that lead specifically caused Stevenson's injuries. [See](#) Maj. Op. at 26, 236 A.3d at 645. Contrary to the Majority's assessment, the circuit court did not find based on [Stevenson I](#) that the EPA-ISA mandated a finding that lead specifically caused Stevenson's attention decrements, hyperactivity, and impulsivity. [See](#) Maj. Op. at 26, 236 A.3d at 645. Rather, the record reflects that the circuit court correctly understood that, in [Stevenson I](#), 454 Md. at 293-96, 164 A.3d at 263-65, this Court held that there had been no check for an analytical gap between Dr. Hall-Carrington's data and her opinion that lead

exposure can cause ADHD, and thus Dr. Hall-Carrington's testimony concerning ADHD was inadmissible. Contrary to the Majority's assertion, the circuit court did not find that Dr. Hall-Carrington's testimony about attention deficits and hyperactivity would be automatically admissible based on

this Court's holding in [Stevenson I](#). The record reflects that the circuit court understood that this Court did not direct that Dr. Hall-Carrington's testimony would be admissible on that point, but instead that Stevenson was required to demonstrate a sufficient factual basis for Dr. Hall-Carrington's opinion that exposure to lead was a substantial factor in causing Stevenson's injuries, *i.e.*, attention deficits and the like. The circuit court stated: “So this [c]ourt is here at this stage at this initial stage to determine [**668](#) whether or not the testimony of Dr. ... Hall-Carrington will be appropriate.” Referring to

this Court's opinion in [Stevenson I](#), the circuit court stated that “[i]t says that you can't use the word ‘ADHD’ which is a diagnosis, but it clearly shows that those symptoms that you referred to are caused by lead or that there are studies to show that it's caused by lead.” The circuit court recognized, however, that Stevenson was required to demonstrate that Dr. Hall-Carrington's testimony concerning attention deficits and hyperactivity was admissible under [Maryland Rule 5-702](#). The circuit court stated: “I'm also clear that that case says that under the right circumstances there can be an opinion based on what has been presented to show that there are certain disorders and certain [*65](#) deficits.” Ultimately, as explained above, the circuit court concluded that the jury (trier of fact) would be able to evaluate the reasoning underlying Dr. Hall-Carrington's opinion and that the circuit court was satisfied that the data (research) showed that lead exposure could cause attention deficits and hyperactivity. The record simply does not support a conclusion that the circuit court found Dr. Hall-Carrington's testimony to be admissible “so long as she did not use the term ‘ADHD.’” Maj. Op. at 27, 236 A.3d at 645.

Just as troubling, in reaching a decision that a remand is necessary, the Majority concludes that the circuit court erred in refusing to hold a [Maryland Rule 5-702](#) hearing, at which Dr. Hall-Carrington could explain and Rochkind could cross-examine regarding specific causation methodology. [See](#) Maj. Op. at 26, 236 A.3d at 645. Once again, the Majority is incorrect. The record reveals that the parties agreed that the circuit court need not hold a [Maryland Rule 5-702](#) hearing and that the parties agreed that the transcript of Dr. Hall-Carrington's testimony from the trial that had occurred previously (the trial underlying [Stevenson I](#)), along with proffers by the attorneys, would be the agreed-upon manner

to proceed. As explained above, both parties agreed (*i.e.*, Rochkind had conceded) that a [Frye-Reed](#) hearing was not the manner in which to proceed and that the issue was properly resolved under [Rule 5-702](#). After that, the following colloquy occurred:

THE COURT: I wanted to make sure before I rule. All right. So with that, the [c]ourt did believe that it would be appropriate to either have a full hearing where the Defendants would be able to present the witnesses. The burden would be on the Plaintiff. The Plaintiff would be able to offer Dr. Cecilia Hall-Carrington.

The parties have agreed based on conversations with the [c]ourt that the testimony of Cecilia Hall-Carrington which is before the Court that was in front of [a different circuit court j]udge [] will be similarly presented to this jury.

* * *

Again, so there's no objection to not having a hearing where there's live testimony because all parties are satisfied that *66 what is before the [c]ourt is what the [c]ourt needs to make a decision under 5-702-3. Correct, Defense?

[ROCHKIND'S COUNSEL]: Yes, Your Honor, that's correct.

THE COURT: And correct, Plaintiff?

[STEVENSON'S COUNSEL]: Yes, Your Honor.

THE COURT: All right. I will now hear from Plaintiff.

The Majority misunderstands what occurred in the circuit court. The circuit court initially denied Rochkind's motion to exclude Dr. Hall-Carrington's testimony in its entirety.

The circuit court found that, under [Stevenson I](#), Dr. Hall-Carrington could be permitted to testify under certain circumstances. The circuit court stated: "I'm also clear that that case says that under the right circumstances there can be **669 an opinion based on what has been presented to show that there are certain disorders and certain deficits. And we may get to that at some point." After this ruling, Rochkind filed a request to brief for a Rule 5-702/[Frye-Reed](#) hearing, seeking to limit Dr. Hall-Carrington's ability to testify under any circumstances about the symptoms of attention deficits and hyperactivity. The next day, as the circuit court addressed the additional filing, the parties agreed on the record (as explained above) that the matter should be

resolved under [Rule 5-702](#) (not [Frye-Reed](#)) and then agreed that a [Rule 5-702](#) hearing was not necessary. The circuit court considered argument from counsel, discussed the circumstances of the case, including this Court's holding in [Stevenson I](#), and found that there was no analytical gap between the data and Dr. Hall-Carrington's opinion. It is impossible to conclude, as the Majority does, that the circuit court erred or abused its discretion by not holding a [Rule 5-702](#) hearing when the record unequivocally demonstrates that the parties agreed that no hearing was necessary and the circuit court outlined in detail on the record that agreement.

Yet, after wrongfully concluding that the circuit court abused its discretion, the Majority remands for the circuit court to conduct a hearing pursuant to [Maryland Rule 5-702](#) *67 (which the parties agreed was unnecessary); the Majority states that "the circuit court should consider the [Daubert](#) standard adopted herein." Maj. Op. at 27, 236 A.3d at 645. It is clear that the remand to the circuit court to conduct a [Maryland Rule 5-702](#) hearing is nothing more than the Majority's way to shoehorn in justification for adopting the [Daubert](#) standard. Apparently determined to implement [Daubert](#) in Maryland by any means necessary, the Majority is willing to disregard an on-the-record concession that the issue involving the admissibility of Dr. Hall-Carrington's testimony was not to be resolved under [Frye-Reed](#), an agreement by the parties that no hearing was necessary under [Maryland Rule 5-702](#), and that neither of the exceptions to the doctrine of *stare decisis* is applicable, and the Majority is willing to refuse to refer the matter to the Rules Committee for study of how the decision will impact Marylanders when there are numerous scholarly sources indicating that the adoption of [Daubert](#) has far-reaching consequences. These are not the circumstances under which this Court should implement such a significant change in the use of [Maryland Rule 5-702](#) and such an important development in case law in our State.⁶

**670 For the above reasons, respectfully, I dissent.

Judge [Hotten](#) and Judge [Greene](#) have authorized me to state that they join in this opinion.

All Citations

471 Md. 1, 236 A.3d 630

Footnotes

- 1 For a comprehensive background to this case, refer to the Court's opinion in [Rochkind v. Stevenson](#), 454 Md. 277, 281–84, 164 A.3d 254 (2017) (“[Stevenson I](#)”).
- 2 U.S. Envtl. Prot. Agency, EPA/600/R–10/075F, Integrated Science Assessment for Lead (2013), <https://www.epa.gov/isa/integrated-science-assessment-isa-lead> (follow “PDF” hyperlink), archived at <https://perma.cc/K28Z-F58P>.
- 3 Mr. Rochkind submitted additional briefing and a formal offer of proof to preserve the issue for appeal.
- 4 See [Reed v. State](#), 283 Md. 374, 382, 391 A.2d 364 (1978) (collecting cases).
- 5 See, e.g., [Motorola Inc. v. Murray](#), 147 A.3d 751, 753–56 (D.C. 2016) (describing—as others have before it—[Daubert](#), [Joiner](#), and [Kumho Tire](#), as the “[Daubert](#) Trilogy”).
- 6 In 2000, the FRE were amended (in response to [Daubert](#) and its progeny, see [Fed. R. Evid. 702](#) advisory committee's note) to include language requiring expert testimony to be based on “sufficient facts or data.” The FRE were restyled in 2011 without substantive changes. [FRE 702](#) now reads:
- 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;
- (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.
- 7 See [Savage v. State](#), 455 Md. 138, 178 n.3, 166 A.3d 183 (2017) (Adkins, J., concurring) (listing 38 jurisdictions that “have either explicitly adopted [Daubert](#) or held that its factors are persuasive in evaluating expert witness testimony”). One additional state, Florida, adopted [Daubert](#) by court order in 2019. [In re: Amendments to Fla. Evidence Code](#), 278 So.3d 551 (Fla. 2019).
- 8 See [id.](#) at 179 n.4, 166 A.3d 183 (listing jurisdictions that apply a traditional or modified [Frye](#) analysis).
- 9 See [Chesson II](#), 434 Md. at 350 n.2, 75 A.3d 932 (“Differential diagnosis, a process critiqued in [Blackwell](#)[] to prove that thimersol caused autism, was characterized in that case as ‘a process of elimination, [and] defined as, “[t]he process of weighing the probability of one disease versus that of other diseases possibly accounting for a patient's illness. The differential diagnosis of rhinitis (a runny nose) includes allergic rhinitis (hayfever), the abuse of nasal decongestants and, of course, the common cold.” ’”).
- 10 Comparative bullet lead analysis is “a three-step process that involves the comparison of the elemental composition of bullets in an effort to determine whether different bullets originated from the same vat of lead.” [Clemons v. State](#), 392 Md. 339, 347, 896 A.2d 1059 (2006).
- 11 Like the present case, the first two prongs of the [Rule 5-702](#) analysis—witness qualification and appropriateness—were not at issue in that appeal.
- 12 “Ordinarily, the appellate court will not decide any other issue unless it plainly appears by the record to have been raised in or decided by the trial court, but the Court may decide such an issue if necessary or desirable to guide the trial court or to avoid the expense and delay of another appeal.” [Md. Rule 8-131\(a\)](#).
- 13 Notwithstanding the fact that this Court granted certiorari to answer the very question of whether to adopt [Daubert](#), the Dissent also argues that “[t]his case is plainly not the case in which to entertain” adopting [Daubert](#). Dissenting Op. at 50-51, 236 A.3d at 659. The Dissent relies on an interaction between the circuit court and Mr. Rochkind's counsel to conclude that “Rochkind's counsel explicitly agreed with the

circuit court that a [Frye-Reed](#) hearing was not appropriate under the[se] circumstances.” *Id.* After a full reading of the record, however, we are satisfied that up until that point, Mr. Rochkind sufficiently pursued a [Frye-Reed](#) hearing. Mr. Rochkind presented his [Frye-Reed](#) arguments several times over. Prior to the interaction quoted by the Dissent, Mr. Rochkind’s counsel filed a motion and argued several times at the motions hearing that a [Frye-Reed](#) hearing was needed. Only at a later hearing did counsel for Mr. Rochkind concede that a [Rule 5-702](#) hearing would be sufficient. We therefore find unavailing the Dissent’s argument that the principles of [Frye-Reed](#) were not before the circuit court because “it was clear that [the] case was decided under [Maryland Rule 5-702](#), not under [Frye-Reed](#).” *Id.* at 51, 236 A.3d at 659–60. A “[Frye-Reed](#) hearing was not appropriate” only because the circuit said so, not for lack of preservation. See *id.* at 50–51, 236 A.3d at 659; see also [Md. Rule 8-131\(a\)](#).

14 [Md. Const., Art. IV, Section 18\(a\)](#) (“The Court of Appeals from time to time shall adopt rules and regulations concerning the practice and procedure in and the administration of the appellate courts and in the other courts of this State, which shall have the force of law until rescinded, changed or modified by the Court of Appeals or otherwise by law.”).

15 The Dissent and Ms. Stevenson argue that if Maryland is to adopt [Daubert](#), the Rules Committee, rather than this Court, should be the body to do so. Yet, we resist the call to refer this matter to the Rules Committee for several reasons. As discussed above and noted by the 1994 Committee Note to [Rule 5-702](#), “[t]he required scientific foundation for the admission of novel scientific techniques or principles is left to development through case law.” Of course, at that time, the Rules Committee was referring to the [Frye-Reed](#) standard. Yet, in the same Committee Note, the Rules Committee explicitly acknowledged [Daubert](#), and made sure to indicate that [Rule 5-702](#) is not intended to overrule [Frye-Reed](#). We glean from the Note that the Rules Committee considered [Daubert](#) in 1994, but left it to this Court to change the standard applied to scientific testimony.

Adopting [Daubert](#) is in line with our longstanding view that Maryland’s courts look to federal cases when interpreting analogous federal rules. See [Bartell v. Bartell](#), 278 Md. 12, 18, 357 A.2d 343 (1976). [Rule 5-702](#) was adopted in 1994 to track [FRE 702](#). See [Hutton v. State](#), 339 Md. 480, 494 n.10, 663 A.2d 1289 (1995); see also [Wood v. Toyota Motor Corp.](#), 134 Md. App. 512, 523 n.13, 760 A.2d 315 (2000) (observing that Maryland’s “case law is consistent with the [2000] amendments to [Rule 702 of the Federal Rules of Evidence](#),” which expressly adopted [Daubert](#)).

In part, the Dissent suggests that the Rules Committee is the more appropriate forum to study the potential impact the [Daubert](#) standard will have on “African American people, people of color, or people of limited financial means.” Dissenting Op. at 54, 236 A.3d at 661; see Andrew W. Jurs and Scott DeVito, *A Tale of Two Dauberts: Discriminatory Effects of Scientific Reliability Screening*, 79 Ohio St. L.J. 1107, 1144 (2018). We do not reject the seriousness of this contention. We do, however, note other scholarly research coming to the opposite conclusion. See Edward K. Cheng & Albert H. Yoon, *Does Frye or Daubert Matter? A Study of Scientific Admissibility Standards*, 91 Va. L. Rev. 471, 503 (2005) (“[A] state’s choice of scientific admissibility standard does not have a statistically significant effect ... [and] a state’s adoption of [Frye](#) or [Daubert](#) makes no difference in practice.”). This Court is well suited to weigh the advantages and disadvantages of modifying our approach to any area of the law—as we often do. That this change implicates our interpretation of the Maryland Rules does not necessitate a referral to the Rules Committee.

16 Ms. Stevenson suggests that [Frye-Reed’s de novo](#) standard of review ensures consistency because “[t]he science is either generally accepted as reliable in the relevant scientific community or it is not.” Yet, this

misses the mark. Ms. Stevenson conflates consistency with complacency. To the extent that [Frye-Reed](#) rulings were consistent, it is due to the ability of a later court to take judicial notice of a methodology's general acceptance. We reject this type of "consistency." Instead, we task trial courts with analyzing the reliability of testimony posed to it, without the notion that because a court has accepted it before, it shall be accepted again.

1 Maryland Appellate Blog is the blog of the Maryland State Bar Association's Litigation Section.

2 This is the exchange that occurred between the circuit court and Rochkind's counsel:

[CIRCUIT COURT:] So for those reasons, Defense Counsel was seeking a 5-702, I'm sorry, seeking at this stage a Frye-Reed hearing. And counsel may not want to freely acknowledge it but, candidly speaking, you do -- you're going to go with me on this one, that a Frye-Reed hearing is not appropriate under these circumstances. You're going to give me that one, aren't you?

[ROCHKIND'S COUNSEL:] I do think that the appropriate forum is a 5-702 hearing.

[CIRCUIT COURT:] See. This is why I like you. Honesty always helps. So again, so the issue for the Appellate Courts were to decide that you're not asking for the Frye-Reed because you believe that under these circumstances it's a 5-702, correct?

[ROCHKIND'S COUNSEL:] Correct.

3 In adopting the [Daubert](#) standard, the Majority attempts to rewrite history and minimize the consequence of Rochkind's counsel's agreement that neither a hearing under [Frye-Reed](#) nor [Maryland Rule 5-702](#) was necessary. See Maj. Op. at 27–28 n.13, 236 A.3d at 645–46. It is beyond dispute that Rochkind's counsel specifically agreed that a [Frye-Reed](#) hearing was not necessary. Even the Majority acknowledges this, *i.e.*, that Rochkind's counsel agreed that a [Frye-Reed](#) hearing was not necessary. Yet, the Majority takes the misguided path of finding significance in the circumstance that, prior to agreeing that a [Frye-Reed](#) hearing was not necessary, "Rochkind's counsel filed a motion and argued several times at the motions hearing that a [Frye-Reed](#) hearing was needed" and only later made the concession. Maj. Op. at 27–28 n.13, 236 A.3d at 645–46. The Majority's statement implies that Rochkind's counsel's concession is meaningless. Under the Majority's theory, once a party takes a position in litigation, a court should not consider a concession even if it is made in open court on the record and there is no dispute that the concession has been made.

In a desperate attempt to counter a simple fact that is plain from the record, the Majority refuses to recognize that there was an agreement between the parties and the circuit court that no hearing was necessary.

The Majority makes the unfortunate and inaccurate allegation that "[a] [Frye-Reed](#) hearing was not appropriate' only because the circuit said so[.]" Maj. Op. at 27–28 n.13, 236 A.3d at 645–46. The circuit court judge who presided in this case is an experienced trial judge with a sterling reputation. The Majority's allegation ignores the record and the circumstance that, after having made the request for one, Rochkind's counsel readily agreed not to pursue a [Frye-Reed](#) hearing.

Similarly, the Majority's suggestion that, because the Court granted *certiorari*, this case is the appropriate vehicle to announce a change to the [Daubert](#) standard is flawed. See Maj. Op. at 27–28 n.13, 236 A.3d at 645–46. The grant of a petition for a writ of *certiorari* where the petition contains a particular question is not a guarantee that the Court will necessarily address the question, let alone that the Court will answer the question by making a sweeping change in the law. See, e.g., [Duffy v. CBS Corp.](#), 458 Md. 206, 217 & n.9, 182 A.3d 166, 172 & n.9 (2018) (This Court stated that because we answered the first of three questions presented in a petition for a writ of *certiorari* in the affirmative and held that the statute of repose did not apply in that case, we did "not address the remaining questions[.]" including whether the Court of Special Appeals's decision violated a person's "constitutional right to access the courts[.]"); [State v. Weems](#), 429 Md. 329, 332, 55 A.3d 921, 925 (2012) (This Court granted a petition for a writ of *certiorari* raising two questions,

but did not address the second question because we affirmed the Court of Special Appeals's judgment and answered the first question in the negative.); [Prof'l Staff Nurses Ass'n v. Dimensions Health Corp.](#), 346 Md. 132, 133-34, 138, 141-42, 695 A.2d 158, 158, 160, 162-63 (1997) (This Court granted a petition for a writ of *certiorari* raising only a single constitutional issue—whether the National Labor Relations Act preempted the Maryland anti-strikebreakers statute—but “conclude[d] that the constitutional issue should not have been reached” and affirmed the Court of Special Appeals's judgment on a non-constitutional ground.); see also [Stevenson I](#), 454 Md. at 284-85, 295, 164 A.3d at 258, 265 (This Court granted *certiorari* on two issues—whether the circuit court erred in admitting Dr. Hall-Carrington's generally and specific ADHD causation testimony under [Maryland Rule 5-702](#) and whether the circuit court erred in failing to hold a [Frye-Reed](#) hearing on Dr. Hall-Carrington's general ADHD causation testimony—and did not reach the issue concerning the [Frye-Reed](#) hearing given our resolution of the matter under [Maryland Rule 5-702](#)).

In addition, case law recognizes that the Court may dismiss a petition for a writ of *certiorari* for being improvidently granted. See, e.g., [Sturdivant v. Md. Dep't of Health and Mental Hygiene](#), 436 Md. 584, 589, 84 A.3d 83, 86 (2014) (“On occasion, this Court dismisses a case after briefing and argument on the ground that the petition for writ of *certiorari* was improvidently granted. In such cases the grant of the petition was a mistake, either because it becomes apparent later that there is truly no issue of public importance in the case or because there is such an issue, but it was not preserved below or the record in the case provides an inadequate basis for rendering useful guidance on that issue.”); see also [McFarland v. Baltimore Cmty. Lending, Inc.](#), 467 Md. 428, 429, 225 A.3d 83, 83 (2020) (This Court dismissed a petition for a writ of *certiorari* as “having been improvidently granted.”). Also, [Maryland Rule 8-604\(d\)\(1\)](#) allows the Court to not affirm, reverse, or modify a judgment, but instead to remand so “that justice will be served[.]” In stating that this Court granted *certiorari* to answer the very question of whether to adopt [Daubert](#), the Majority ignores these well-known appellate principles. Moreover, the Majority wrongly implies that the Court did not have the option of concluding that this was not an appropriate case in which to consider adopting the [Daubert](#) standard.

4 Indeed, other than the parenthetical, the Majority provides no information about the article or its purpose, specifically, whether its purpose was to study the impact of [Daubert](#) on specific groups, or whether the article even mentions Maryland. The Majority does not advise that the article, like other sources, likens [Daubert](#) to tort reform, stating:

In federal courts, where the decision is legally binding, *Daubert* has become a potent weapon of tort reform by causing judges to scrutinize scientific evidence more closely. Tort reform efforts often focus on medical malpractice, products liability, and toxic torts—all cases in which scientific evidence is likely to play a decisive or at least highly influential role. The resulting effects of *Daubert* have been decidedly pro-defendant. In the civil context, *Daubert* has empowered defendants to exclude certain types of scientific evidence, substantially improving their chances of obtaining summary judgment and thereby avoiding what are perceived to be unpredictable and often plaintiff-friendly juries.

Edward K. Cheng & Albert H. Yoon, [Does Frye or Daubert Matter? A Study of Scientific Admissibility Standards](#), 91 *Va. L. Rev.* 471, 472-73 (2005) (footnote omitted). After reaching this conclusion, the article purports to review the impact of [Daubert](#) in states by examining developments in specifically identified states that have and have not adopted the [Daubert](#) standard; Maryland is not among the states included in the article. Also, the article does not purport to study the effect of the [Daubert](#) standard on different communities within those states. As such, although the article purports to evaluate whether “doctrinal standards have any effect on scientific admissibility determinations” and reaches a general conclusion that it “found no evidence that Frye or [Daubert](#) makes a difference,” *id.* at 510-11, in addition to being fifteen years old, the article reaches no conclusions whatsoever about the impact of the [Daubert](#) standard not

having been adopted in Maryland or any potential impact of this Court adopting the standard now. The article also does not address the issue that the Maryland Association for Justice raises in its amicus brief concerning a potential disparate impact of [Daubert](#) on various communities in the State.

In contrast, the more recent Andrew W. Jurs & Scott DeVito law review article addresses [Daubert](#)'s disproportionate impact on African American plaintiffs and claimants of color, stating:

We found that when the federal system adopted the stricter standard of [Daubert](#) in 1993, there was a disproportionate and negative impact on filings from African-American plaintiffs along with a corresponding rise in filings from white plaintiffs. Yet that is not all we found. In prior work, we found that when a state adopted [Daubert](#) after 1993, there was a "return to federal court" effect where filings rebound to pre-1993 patterns. Yet our analysis reveals that after state adoption of [Daubert](#), there is no rebound for African-American plaintiffs; instead, the filing rates for black plaintiffs remain depressed.

Our research shows that, in response to [Daubert](#), black plaintiffs were less likely to file in federal court, and once they were pushed out of the civil justice system, they remained out. In essence, the [Daubert](#) admissibility standard impacts filings exactly like a method of tort reform, but only for claimants of color. Andrew W. Jurs & Scott DeVito, *A Tale of Two Dauberts: Discriminatory Effects of Scientific Reliability Screening*, 79 Ohio St. L.J. 1107, 1109-10 (2018) (footnotes omitted).

Another law review article indicates that [Daubert](#) and its progeny may have "significant gender, race, and class implications," stating:

[T]rial judges have used [[Daubert](#) and its progeny], despite Daubert's announced intention to liberalize decisions on admitting scientific expert causation testimony, to erect conservative, and in some instances, virtually insurmountable barriers to plaintiffs' ability to prove causation. These barriers stem from substantive legal decisions about causation law, rather than from scientific principles or case by case assessments of proffered testimony. Finally, the article analyzes some of the societal implications of these legal developments, including differential impact on social groups whose health problems have tended to be ignored or underexplored by the scientific research community[.]

* * *

There are also likely to be subtle, but significant gender, race, and class implications of the heightened requirements for proof of causation. Certain social groups have traditionally drawn greater research interest and research dollars. For example, medical problems of middle-aged white men have received a disproportionate amount of research attention, while the problems of women, the poor, and members of minority racial and ethnic groups have received less attention. Political groups or other organizations can also stimulate research attention to potential health problems--for example, the unions have played an important role in pushing for research into asbestos and other occupational exposures; veterans groups have continued to demand better Agent Orange and [Gulf War Syndrome](#) research. Until the relatively recent attention devoted by civil rights groups to toxic exposure issues in poor minority communities, and the activism of women's groups around [breast cancer](#) research or [[diethylstilbestrol](#)] research, the advocacy groups that prodded regulatory agencies or the research community were more likely to represent largely male constituencies, such as industrial workers. For these reasons, the products, exposures, and diseases for which there is likely to be well-developed epidemiologic research will not be gender, race, or class-neutral. The societal groups most likely to be under-studied by the research community are often going to be the same groups whose health concerns have received less initial scrutiny from product or drug manufacturers. If the epidemiologic community has not produced enough research into some types of the exposures and risk factors facing women, minorities, and the poor, then these groups will be inherently disadvantaged when they try to use the tort system to redress their health problems and to stimulate more serious manufacturer and researcher attention to their concerns. The long-standing inequities of medical research can lead to differential race, gender, and class-based access to the tort system.

Lucinda M. Finley, *Guarding the Gate to the Courthouse: How Trial Judges Are Using Their Evidentiary Screening Role to Remake Tort Causation Rules*, 49 DePaul L. Rev. 335, 337-38, 373-74 (1999) (footnotes omitted).

Several sources state that [Daubert](#) has the effect of lowering costs for defendants and raising costs for plaintiffs. See Sandra F. Gavin, *Managerial Justice in A Post-Daubert World: A Reliability Paradigm*, 234 F.R.D. 196, 212 (2006) (“Th[e] shift to the pretrial arena significantly raises the costs and risks for plaintiffs while diminishing the costs and risks for defendants particularly when Daubert and summary judgment intersect.”); Richard A. Nagareda, *1938 All over Again? Pretrial As Trial in Complex Litigation*, 60 DePaul L. Rev. 647, 669 (2011) (“The further nuance imparted by Daubert and its progeny is to reduce the cost to the defendant of deploying the summary judgment motion. Under this line of cases, the defendant simply may insist that the plaintiff--the party with the ultimate burden of proof--show her evidentiary cards. A moving defendant need not affirmatively demonstrate the absence of a genuine issue of material fact.” (Footnote omitted.)); Sean Ryan, *Backfire: Abandoning the Abuse of Discretion Standard of Review for Daubert Rulings Shoots Trial Courts in the Foot*, 47 U. Tol. L. Rev. 349, 368-69 (2016) (“A 2001 Institute for Civil Justice Study concluded that the extra burden of defending against [Daubert](#) motions had a chilling effect on plaintiffs.

The unpredictability caused by a heightened standard of review of [Daubert](#) decisions on appeal will often increase those costs for plaintiffs.” (Footnote omitted.)); Arthur R. Miller, *Simplified Pleading, Meaningful Days in Court, and Trials on the Merits: Reflections on the Deformation of Federal Procedure*, 88 N.Y.U. L. Rev. 286, 313 (2013) (“Daubert’s high threshold has been particularly burdensome--financially, logistically, and sometimes both--for plaintiffs. This is because plaintiffs often must provide expert testimony or reports about a wide range of subjects--for example, the relevant technology, pharmacology, the environmental impact of the defendant’s conduct, or the statistical and economic significance of certain phenomena or behaviors.”).

Plainly, these articles demonstrate there is an imperative need to examine the impact of [Daubert](#) in Maryland before the wholesale adoption of the standard.

5 In the circuit court, Rochkind conceded that the only issue was whether Dr. Hall-Carrington had a sufficient factual basis for her opinions under [Maryland Rule 5-702\(3\)](#). In other words, Rochkind did not take issue with whether Dr. Hall-Carrington was qualified as an expert under [Maryland Rule 5-702\(1\)](#) or the appropriateness of expert testimony on the particular subject under [Maryland Rule 5-702\(2\)](#).

6 Finally, the Majority states: “Since [Daubert](#) is a new interpretation of [Rule 5-702](#), our decision today applies to this case and any other cases that are pending on direct appeal when this opinion is filed, where the relevant question has been preserved for appellate review.” Maj. Op. at 38–39, 236 A.3d at 652 (cleaned up). In [Griffith v. Kentucky](#), 479 U.S. 314, 322, 107 S.Ct. 708, 93 L.Ed.2d 649 (1987), the Supreme Court held that not applying a newly announced constitutional rule to criminal cases pending on direct appeal is not consistent with basic principles of constitutional adjudication. In light of the Supreme Court’s holding in [Griffith](#), in some instances, this Court has given the application of new holdings to cases that were pending on appeal, where the new holding involved an issue of constitutional significance in criminal law. See, e.g., [Hackney v. State](#), 459 Md. 108, 119, 184 A.3d 414, 421 (2018); [State v. Daughtry](#), 419 Md. 35, 77 n.26, 18 A.3d 60, 85 n.26 (2011). Neither the holding in [Griffith](#) concerning the application of a newly announced constitutional rule nor the application of [Griffith](#) in [Kazadi v. State](#), 467 Md. 1, 47, 223 A.3d 554, 581 (2020), and [Daughtry](#) would apply to a change of the evidentiary standard for use under [Maryland Rule 5-702](#). Here, the Majority’s holding should apply to this case and future trials; the Majority’s opinion should not be construed as giving rise to any grounds for relief in cases in which the trial occurred before the issuance of this opinion.

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