IN THE COURT OF SPECIAL APPEALS OF MARYLAND

CSX TRANSPORTATION, INC.,	*	
Defendant/Appellant,	*	
vs.	*	**No. 01142 September Term, 2003**
DONALD E. MILLER	*	
Plaintiff/Appellee.	*	

MOTION OF THE MARYLAND DEFENSE COUNSEL, INC. TO FILE *AMICUS CURIAE* BRIEF ON BEHALF OF APPELLANT

Amicus Curiae, Maryland Defense Counsel, Inc. ("MDC"), by John Parker Sweeney and Meagan N. Newman, Miles & Stockbridge P.C., respectfully requests that this Court permit the filing of the enclosed *Amicus* Brief on Behalf of Appellant pursuant to Maryland Rule 8-511, and for cause states as follows:

1. The Maryland Defense Counsel, Inc. (MDC) is a statewide organization of defense lawyers dedicated to the integrity and preservation of the civil justice system. The purpose of MDC is to bring into close association civil defense lawyers in order to promote the efficiency of the legal system and fair and equal treatment under the law. Membership in the MDC is open to all Maryland lawyers who devote the majority of their practice to the defense of civil litigation. The organization was founded in 1962 and today has over 600 members, making it one of the larger civil defense lawyer organizations in the country. The MDC regularly brings the defense perspective to the appellate courts through *amicus curiae* briefs.

The specific interest of *amicus curiae*, Maryland Defense Counsel, Inc., in this case is that the trial court admitted expert evidence over timely objection by the defendant that the evidence was not reliable and validated. This unfortunate result, as well as the equally troublesome exclusion of reliable and scientifically validated evidence, occurs far too often in Maryland courts.

2. This *amicus curiae* brief is desirable in this case to help the Court review the tension between the Maryland Rules of Evidence governing admission of expert evidence and the common law adopted in Reed v. State, 283 Md. 374, 391 A.2d 364 (1978), which guided the admissibility of expert testimony in Maryland prior to the adoption of those rules. The Committee Note accompanying these rules pointed out the tension between the new Rule 5-702 and Reed v. State.

> This Rule is not intended to overrule Reed v. State, 283 Md. 374 (1978) and other cases adopting the principles enunciated in Frye v. United States, 293 F. 1013 (D.C.Cir.1923). The required scientific foundation for the admission of novel scientific techniques or principles is left to development through case law. Compare Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 113 S.Ct. 2786 (1993).

(Emphasis added.) The Committee Note indicates that all questions of admission of expert testimony other than those involving novel techniques or principles should be subject to Rule 5-702, not prior common law. Instead, the limited "novelty" exception of Reed v. State has swallowed up the admission criteria set forth in the rules as courts continue to apply the common law tests to the admission of all expert testimony.

The goals of the Maryland Rules of Evidence are to "secure fairness in administration, eliminate unjustifiable expense and delay, and promote

the growth and development of the law of evidence to the end that the truth may be ascertained and proceedings justly determined." Rule 5-102. The broad, continuing application of the Reed v. State line of decisions frustrates these goals by excluding otherwise reliable and scientifically validated expert evidence if "novel" and not "generally accepted," while generally admitting unreliable and unfounded conjecture so long as it is not founded on a novel technique or principle. The Reed test overlaps with and should be properly subsumed within the Maryland Rules of Evidence to eliminate confusion and unjust results.

3. *Amicus Curiae's* brief addresses the issue of whether this Court should make clear that trial courts must apply the relevance and reliability tests set forth in the Maryland Rules of Evidence when considering the admission of expert evidence.

WHEREFORE *Amicus Curiae* MDC respectfully suggests that its views in the accompanying *Amicus* Brief will assist this Court in considering the issue before it and requests that this Court permit the filing of MDC's *Amicus* Brief.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I HEREBY CERTIFY on this 29th day of December, 2003, a copy of *Amicus Curiae*, Maryland Defense Counsel, Inc.'s Motion to File *Amicus Curiae* Brief on Behalf of Appellant was sent via first-class mail to:

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IN THE
COURT OF SPECIAL APPEALS OF MARYLAND

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CSX TRANSPORTATION, INC.

Appellant

v.

DONALD E. MILLER

Appellee

Appeal from the Circuit Court
For Baltimore City

AMICUS CURIAE BRIEF ON BEHALF OF APPELLANT

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STATEMENT OF THE CASE

As concerns the interest of *amicus curiae*, Maryland Defense Counsel, Inc., a statewide voluntary organization of defense lawyers that promotes the efficiency of our legal system and fair and equal treatment for all under the law, the circuit court admitted expert evidence over timely objection by defendant/appellant that the evidence was not reliable and validated. A verdict was returned for, and a judgment was entered in favor of, the plaintiff/appellee, and this appeal followed.

QUESTION PRESENTED

Should this Court make clear that trial courts must apply the relevance and reliability tests set forth in the Maryland Rules of Evidence when considering the admission of expert evidence?

STATEMENT OF FACTS

Maryland Defense Counsel, Inc. incorporates by reference the Statement of Facts in Appellant's Brief.

ARGUMENT

As it currently stands, Maryland law governing the admissibility of expert evidence is confused and burdened by the tension that has developed between the

clear mandate of the Maryland Rules of Evidence and the growing body of federal and state case law applying corresponding rules, on the one hand, and Maryland pre-Rule considerations of "general acceptance," on the other. The sole test for determining the admissibility of expert evidence, the relevance of which outweighs any prejudice resulting from its admission, should be whether that evidence is considered reliable by experts in that field of inquiry as set forth in the Rules of Evidence. Maryland Defense Counsel, Inc. prays this Court make clear that the precepts of the Maryland Rules of Evidence govern the admissibility of expert evidence in Maryland courts.

The Maryland law of evidence for admitting expert testimony is codified in Rules 5-702[1] and 5-703[2], with the arguable exception of the pre-existing common

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[1] Rule 5-702:

> 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.

[2] Rule 5-703:

> (a) In general. The facts or data in the particular case upon which an expert bases an opinion or inference may be those perceived by or made known to the expert at or before the hearing. If of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject, the facts or data need not be admissible in evidence.
> (b) Disclosure to jury. If determined to be trustworthy, necessary to illuminate testimony, and unprivileged, facts or data reasonably relied upon by an expert pursuant to section (a) may, in the discretion of the court, be disclosed to the jury even if those facts and data are not admissible in

law pertaining to "novel" scientific techniques and principles. Sippio v. State, 350 Md. 633, 649, 714 A.2d 864 (1998); Reed v. State, 283 Md. 374, 391 A.2d 364 (1978). If an opinion is based on a "novel" but not "generally accepted" technique or principle, all consideration of admitting that evidence ends. See Wilson v. State, 370 Md. 191, 195, 803 A.2d 1034 (2002) ("We shall hold that because the evidence did not satisfy the test we adopted in Reed v. State, 283 Md. 374, 391 A.2d 364 (1978), which guides the admissibility of expert testimony in Maryland, the trial court abused its discretion in admitting the evidence."). If, however, no novel technique or principle is involved, where an expert recites the magic words, "reasonable degree of certainty," any opinion may be admitted, even one lacking adequate factual foundation. See Myers v. Celotex, 88 Md. App. 442, 594 A.2d 1248 (1991), *cert. denied*, Fibreboard Corp. v. Myers, 325 Md. 249, 600 A.2d 418 (1992). The trial courts do not apply the standards of the Rules of Evidence when considering "non-novel" expert evidence.

The goals of the Maryland Rules of Evidence are to "secure fairness in administration, eliminate unjustifiable expense and delay, and promote the growth and development of the law of evidence to the end that the truth may be

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evidence. Upon request, the court shall instruct the jury to use those facts and data only for the purpose of evaluating the validity and probative value of the expert's opinion or inference.
(c) Right to challenge expert. This Rule does not limit the right of an opposing party to cross-examine an expert witness or to test the basis of the expert's opinion or inference.

ascertained and proceedings justly determined." Rule 5-102. Maryland's Reed line of decisions only act to frustrate these goals by excluding reliable expert evidence if "novel" and not "generally accepted," while generally admitting unreliable and unfounded expert evidence. The Reed test overlaps with and should be properly subsumed within the Maryland Rules of Evidence to eliminate confusion and unjust results. At the very least, Reed should be confined to the truly "novel" evidence to allow the Rules of Evidence to perform their intended function.

I. THE SUPREME COURT HAS CAREFULLY CONSIDERED THE NATURE OF EXPERT EVIDENCE AND THE JUDICIAL GATE-KEEPING ROLE UNDER THE CORRESPONDING FEDERAL RULES OF EVIDENCE.

The United States Supreme Court has analyzed expert evidence with the following principle in mind: "'Science is not an encyclopedic body of knowledge about the universe. Instead, it represents a *process* for proposing and refining theoretical explanations about the world that are subject to further testing and refinement.'" Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 590; 113 S. Ct. 2786, 2795; 125 L. Ed. 2d 469 (1993) (*quoting* Brief for American Association for the Advancement of Science et al. (emphasis in original)). "But, in order to qualify as 'scientific knowledge,' an inference or assertion must be derived by the scientific method. Proposed testimony must be supported by appropriate validation -- *i.e.*, 'good grounds,' based on what is known." Id. at 590,

113 S.Ct. at 2795. This frame of reference—one that respects the nature of scientific and technologic advancement while simultaneously serving the public interest in truth and justice—is the foundation upon which determinations of admissibility should be made.

The Daubert Court held that the Federal Rules of Evidence require the trial court confronted with expert evidence to determine "whether the expert is proposing to testify to (1) scientific knowledge that (2) will assist the trier of fact to understand or determine a fact in issue. This entails a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue." Id. at 592-593, 113 S.Ct. at 2796 (notes omitted).

The Supreme Court observed that ordinarily, "a key question to be answered in determining whether a theory or technique is scientific knowledge that will assist the trier of fact will be whether it can be (and has been) tested." Id. at 593, 113 S.Ct. at 2796. "'Scientific methodology today is based on generating hypotheses and testing them to see if they can be falsified; indeed, this methodology is what distinguishes science from other fields of human inquiry.'" Id. at 593, S.Ct. at 2796 (*quoting* Green, Expert Witnesses and Sufficiency of Evidence in Toxic Substances Litigation: The Legacy of Agent Orange and Bendectin Litigation, 86 NW. U. L. REV. 643, 645 (1992) (citations omitted)).

Maryland cases, on the other hand, admit or exclude expert testimony without regard to whether or not the evidence has withstood the rigors of testing or other examination among experts in the subject.[3]

II. MARYLAND CASELAW BOTH EXCLUDES RELIABLE EXPERT EVIDENCE AND ADMITS UNSUPPORTED CONJECTURE.

A. The Exclusion of Reliable Expert Evidence.

Maryland law for determining the admissibility of expert evidence can act in direct opposition to the truth-seeking function it is intended to serve. In one instance, for example, an opinion based on evidence that was tested, peer-reviewed, and accepted by experts in the field nevertheless was excluded simply because it was deemed to fail the Reed "general acceptance" test. See Wilson v. State, 370 Md. 191, 195, 803 A.2d 1034. An opinion about the improbability of two Sudden Infant Death Syndrome (SIDS) deaths occurring among siblings based

[3] See United States v. Horn:

> Under Daubert, the parties and the trial court are forced to reckon with the factors that really do determine whether evidence is reliable, relevant and 'fits' the case at issue. Focusing on the tests used to develop evidence, the error rate involved, what 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 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. 2003) (emphasis added) (*citing* Wright & Gold, 29 Federal Practice and Procedures § 6266) ("Daubert's focus upon multiple criteria for scientific validity compels lower courts to abandon long existing per se rules of admissibility or inadmissibility grounded upon the Frye standard.").

on evidence that there is no genetic component to SIDS, was excluded because that underlying evidence was found not to be generally accepted. Id. at 209. There was, however, substantial scientific evidence that experts on that subject would accept in concluding that SIDS has no demonstrated genetic component.[4] Because there was this substantial foundation of expert evidence that SIDS has no genetic component, a factfinder *could* rationally determine that SIDS has no genetic component, and draw such further conclusions as this substantially evidenced fact would rationally support.

The jury was not permitted to consider this scientifically supported evidence, however, because the Court found some divergence of opinion in the scientific literature:

> [A] recent article in the Journal of the American Medical Association presents a study *suggesting* that SIDS *may* result from a genetic condition. See Michael J. Ackerman et al., Postmortem Molecular Analysis of SCN5A Defects in Sudden Infant Death Syndrome, 286 JAMA 2264 (2001). *This study draws into question* the assertion that SIDS deaths within a single family are independent or unrelated events. Similarly, in the March 2000 edition of Pediatrics, the Task Force on Infant Positioning and SIDS, chaired by John Kattwinkel, M.D., *expressed uncertainty* as to the risk of SIDS among siblings.

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[4] Wilson, 370 Md. at 204, *citing* Robert M. Reece, Fatal Child Abuse and Sudden Infant Death Syndrome: A Critical Diagnostic Decision, 91 PEDIATRICS 423 (1993) ("'when SIDS occurrences among siblings of SIDS cases were compared with those among non-SIDS siblings in maternal age--and birth rank matched--control families, there was no statistically significant difference in SIDS rates.... Thus, the notion that having a SIDS baby makes having another more likely was dispelled.'").

Id. at 204-205 (emphasis added). Thus, other scientific research had "draw[n] into question," and "expressed uncertainty" about, the prior research demonstrating that SIDS has no genetic component.

The presence of some disagreement within the scientific community, however, should not prevent a jury from deciding which of two valid scientific opinions to accept. If there is empirically reliable and valid data from which experts in the field draw differing conclusions, then there is a rational basis for fact-finders to draw either of those differing conclusions. In Wilson, however, this scientific debate was found to demonstrate that there was no "general acceptance" of this "novel" scientific technique or principle, and the jurors were prevented from considering scientific evidence that at least some thoroughly informed and earnest scientific researchers would accept as reliable and validated.

Wilson is not the only Maryland case that excluded reliable, scientifically validated evidence that somehow was found to fall within the ambit of "novel techniques not generally accepted". Expert evidence of paternity, and therefore rape, which was based on data the expert witness had published in the scientific literature that had a false-positive rate verging on zero, was excluded in Cobey v. State, 73 Md. App. 233, 240-244, 533 A.2d 944 (1987) (Cobey I). One earlier study by other researchers, which "indicates that there may be some dispute as to the reliability" of the proffered technique, was sufficient to exclude it. Id. at 243.

This Court held that whether the proffered technique is reliable is "not for the courts to decide. Reed requires that the scientific community make that judgment." Id. The Court excluded what it acknowledged to be a tested hypothesis, method, and opinion based solely upon a question of its reliability raised in the scientific literature. This judicial exclusion occurred even though members of the relevant scientific community were free to accept the tested, published, and peer-reviewed method. On remand, the defendant was convicted again, and this time the conviction was affirmed, this Court then rejecting a challenge that a different DNA test for paternity was novel and not generally accepted. Cobey v. State, 80 Md. App. 31, 559 A.2d 391 (1989) (Cobey II).

In Cobey I, this Court held that the technique was not generally accepted in spite of the fact that the publication demonstrating its extremely low false-positive rate had provoked no specific rebuttal or criticism in the literature. The defendant was convicted, and it appears that that there was no evidence about the unreliability of the particular DNA matching technique except that five years earlier another study had achieved a lower rate of excluding false-positive matches. No witness testified that the technique is invalid or not generally accepted. Cobey I purports to require that the scientific community "generally accept" the method generating the evidence, but then excludes evidence that reasonable genetic researchers and reasonable jurors could accept as tested, valid,

and reliable, just because there has been some divergence in the scientific literature.

B. The Admission of Unsupported Conjecture.

Maryland law concerning admission of expert evidence also operates, for lack of sufficient grounding in scientific methods, to admit unreliable and unvalidated expert evidence that manages to evade the recognized grounds of exclusion. See, e.g., Myers v. Celotex, 88 Md. App. 442, 594 A.2d 1248 (1991), *cert. denied*, Fibreboard Corp. v. Myers, 325 Md. 249, 600 A.2d 418 (1992).[5] In Myers, the trial court had excluded an opinion of an expert that lacked any apparent factual basis. It did so, however, not because of the absence of factual foundation, but only because the expert admitted that his *opinion* was not generally accepted. 88 Md. App. at 456-460. Without addressing the absence of factual foundation, this Court reversed on the ground that, because the opinion was not based on a novel technique, it did not matter that the opinion itself lacked "general acceptance." Id. at 458.

Myers involved several smokers alleging that they contracted lung cancer as a result of asbestos exposure. Id. at 446, 455. The subject of the expert testimony was whether to attribute causation of these lung cancers to asbestos as

[5] Although Myers pre-dates the adoption of the Maryland Rules of Evidence in 1993, Myers has subsequently been relied on as authority for the admissibility of medical opinions. Owens Corning v. Bauman, 125 Md. App. 454, 499-500, 726 A.2d 745, 767 (1999).

well as smoking tobacco, as opposed to attributing them solely to smoking. The trial court excluded the expert's opinion that asbestos causes cancer by imparting an electrical charge to a specific gene on a specific chromosome, which the expert admitted was not generally accepted in the relevant scientific community. Id. at 456. The Myers opinion discussed no evidentiary or factual basis for this "scientific" conclusion, but reversed exclusion of the evidence because it did not matter that the opinion enjoyed no general acceptance. Id. at 458.

This Court held that the Reed "general acceptance" standard applies only to the technique or method generating the underlying evidence in support of the opinion testimony. Id. Having satisfied that predicate of general acceptance of the "technique" or "method" that was used to generate the data upon which he relied, all the expert had to state thereafter was that his opinion was rendered to a reasonable degree of medical certainty. Id. The question of whether there was any scientific evidence to support that opinion apparently merited no judicial consideration. Id. at 456.

Myers exemplifies the particular problem with Maryland decisions on expert testimony concerning medical issues that appears in the instant appeal. Medical opinions are generally admitted upon the expert's incantation of "a reasonable degree of medical certainty". Medical opinions have been distinguished from novel scientific techniques subject to Reed "general

acceptance" consideration, and from further scrutiny of the applicable Maryland Rules of Evidence. See Owens Corning v. Bauman, 125 Md. App. 454, 498, 726 A.2d 745 (1999). Medical experts are allowed to present opinion to a jury that would not pass scrutiny by their scientific peers. In Maryland, if a medical expert speculates that something is more likely true than not true, that opinion will go to the jury without regard to the requirements of the Maryland Rules of Evidence.

III. RIGOROUS APPLICATION OF THE MARYLAND RULES OF EVIDENCE WILL AVOID SUCH ANOMOLIES AND LEAD TO MORE FAIR AND JUST RESULTS.

The problems of exclusion of reliable and validated scientific evidence, as well as the admission of unreliable and unfounded conjecture, indicate the need for review of the process for evaluating expert evidence in Maryland. The United States Supreme Court has thoroughly considered this issue under the rules of evidence similar to those that Maryland has adopted.

If an expert opinion is based on a method that is both novel and not generally accepted, it would not be admitted in Maryland under Reed v. State. Without regard to the Reed approach, however, Maryland Rule 5-702 would require the trial court to consider whether expert testimony will assist the trier of fact, and whether (i) the expert is qualified to give the opinion, (ii) the expert testimony is appropriate on that subject, and (iii) a sufficient factual basis supports the testimony. Md. Rule 5-702. Moreover, the "factual basis" must be "of a type

reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject…." Md. Rule 5-703(a). Whether a technique or principle is "novel" or "generally accepted" would be considered by the courts in their analysis under Rules 5-702 and 5-703. See, e.g., Daubert, 509 U.S. at 594, 113 S. Ct. at 2797 (finding the question of general acceptance to be a consideration when ruling pursuant to F.R.E. 702). Application of the Rules of Evidence should not rigidly exclude otherwise relevant and reliable evidence. At the same time, expert evidence should not be admitted simply because it is "not about method, therefore not subject to general acceptance inquiry," especially where there is no factual foundation. Rules 5-702 and 5-703 are adequate to govern the courts' evaluation of expert testimony.

A recent opinion illustrates the confusion apparent among trial courts in applying Maryland expert evidence law. In Giant Food, Inc. v. Booker, 152 Md. App. 166, 831 A.2d 481 (2003), this Court of Special Appeals held that "the expert's testimony lacked a sufficient factual basis, and the opinion was not the product of reliable principles and methods." Id. at 171, 831 A.2d at 483. Plaintiff was a workers compensation claimant who claimed that his adult-onset asthma in March 2000 had been caused by workplace exposure to freon in December 1998. His only expert was Dr. Redjaee. The evidence, as summarized by the Court of Special Appeals, was that:

> (1) Booker was exposed to Freon on December 15, 1998, but that no other chemicals were released (as evidenced by the OSHA investigation); (2) Booker was subsequently exposed to chemicals of an unknown nature and composition in February 1999; (3) Booker was not complaining of shortness of breath or chest pains or any other symptoms indicative of asthma as of January 13, 1999 (during his visit to Johns Hopkins); (4) Dr. Redjaee did not know what chemicals Booker was exposed to on December 15, 1998; (5) Dr. Redjaee did not know what, if any, chemicals Booker was exposed to between December 15, 1998, and his first visit to the office in early March 2000; (6) adult on-set asthma often has no known cause; and most importantly (7) Dr. Redjaee could not point to any medical or scientific study demonstrating a causal connection between Freon inhalation and asthma.

Id. at 184-85, 831 A.2d at 491-92. Furthermore, the expert testified that the only known chemical exposure (freon), for which Plaintiff sought compensation, does not cause adult-onset asthma. Id. at 187, 831 A.2d at 493. This Court correctly reversed. It is not enough, however, that this kind of "woefully inadequate" expert opinion (id. at 189, 831 A.2d at 494), may ultimately result in reversal on appeal. Unfair and unjust rulings admitting unreliable speculation or excluding reliable scientific data are occurring regularly in the trial courts.[6] Litigants and the trial courts that review expert evidence need clear direction on how to determine what expert evidence is admissible. The overlapping and sometimes inconsistent dictates of Reed and the Maryland Rules of Evidence require reconciliation.

[6] See, e.g., Lewin Realty III, Inc. v. Brooks, 138 Md. App. 244, 287-288, 771 A.2d 446 (2001) (expert's future lost earnings opinion admitted without any "basis for that number in the evidence, and therefore no means for the jury to assess its validity or merit.").

The instant case amply illustrates the need for clear direction. There is no evidence to support Plaintiff's claim that walking on large ballast causes or is likely to cause osteoarthritis of the knee. Plaintiff's expert nevertheless says he thinks that is what caused the Plaintiff's disease. His opinion is admitted because he bases it not on solid, specific scientific evidence, but on very general causes of osteoarthritis, taught in medical school decades ago, that he claims are correlated to Plaintiff's work conditions in unspecified ways. As in Myers v. Celotex, the "method" is bottoming an opinion on a "generally accepted" principle so general as to be meaningless, thus avoiding Reed exclusion, without providing the foundation of reliable information that would satisfy Rules 5-702 and 5-703. If the trial court had applied the Rules-based analysis, no doubt the opinion would have been excluded for lack of reliable foundation.

Rule 5-702 was adopted with a Committee Note explaining how the new Rule was intended to co-exist with Reed v. State.

> This Rule is not intended to overrule Reed v. State, 283 Md. 374 (1978) and other cases adopting the principles enunciated in Frye v. United States, 293 F. 1013 (D.C.Cir.1923). The required scientific foundation for the admission of *novel* scientific techniques or principles is left to development through case law. Compare Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 113 S.Ct. 2786 (1993).

(Emphasis added.)[7] The Note seems to indicate that techniques or principles should not be subject to Rule 5-702. The Note suggests, however, that if the subject is "non-novel", the court must pose the same questions that experts in the subject face when considering one another's opinions: (1) whether the witness is an expert in the subject, (2) whether the opinion addresses the question presented, and (3) whether a sufficient factual basis exists to support the opinion (as elaborated upon by Rule 5-703). These tests are sufficient both to regulate the introduction of "novel" techniques or principles, as well as to ensure a proper foundation for all expert opinions. See U.S. v. Horn, 185 F.Supp. 2d at 555 (stating that under the Federal Rules of Evidence, Rule 702 and the Daubert/Kumho Tire cases, the debate over whether evidence is "scientific" or "novel science" is irrelevant—the same analysis applies to either type of testimony).

Since the Rule 5-702 and 5-703 tests are more than adequate to regulate both the "novel" and the "non-novel", the question becomes whether there is any other meaningful distinction between "novel" and "non-novel". Twenty-five years ago (when Reed was decided), there were no codified rules of evidence in

[7] A recent ABA monograph finds that the *Daubert* ruling has "had a great impact on states that had evidence codes modeled after the Federal Rules of Evidence". Cwik and North, *Scientific Evidence Review: Admissibility and Use of Expert Evidence in the Courtroom*, p. 3 (monograph no. 6, ABA, 2003). Maryland's evidence rules are patterned after the Federal Rules, however, Maryland is in the small minority of states that the ABA monograph finds to have retained *Frye*. Id. at p. 3, pp. 179-180.

Maryland. "Novelty" was merely an explanation of why the particular evidence in that case was properly excluded. Confronted with "voiceprint" analysis of unknown reliability, the Reed court stated that expert testimony "based on the application of new scientific techniques" must be prefaced with proof of the reliability of that technique. 283 Md. at 380, 391 A.2d 364. The only subject before the Court was a "novel", unvalidated method. But, the narrowness of the question before the Court in that case is no reason to constrain the analysis of all other expert admissibility issues not fitting that precise mold. The passage of Rules 5-702 and 5-703 and experience in the federal courts since adoption of the corresponding federal rules shows that the continued isolation of one class of expert testimony from the entire family of such evidence is unwise. Moreover, where, as here, that narrow exception threatens to swallow whole the application of the Rules of Evidence to expert opinion, it is doubly unwise.

In Reed, the Court justified requiring proof of reliability by saying, "Fairness to a litigant would seem to require that before the results of a scientific process can be used against him, he is entitled to scientific judgment on the reliability of that process." Id. at 385. Rules 5-702 and 5-703 provide that fairness to all litigants, without regard to any arbitrary determinations regarding "novelty." Reed states that its test has "the advantage of substituting scientific for lay judgment as to scientific reliability." Id. at 386. The purposes and methods of

Rules 5-702 and 5-703 and the substantial body of federal and state case law interpreting their counterparts, demonstrates that these Rules are consistent with, and more likely to effectuate, the rationale for the Reed decision.

The confusion engendered by Reed's unnecessarily crabbed approach to the reliability of expert evidence is seen in the evolution of the "inexorable physical law" application of Reed. This notion first appeared in State v. Allewalt, 308 Md. 89, 517 A.2d 741 (1986). This Court held in Allewalt that evidence of Post-Traumatic Stress Disorder had been improperly admitted in a rape trial. Allewalt v. State, 61 Md.App. 503, 487 A.2d 664 (1985). The Court of Appeals reversed, distinguishing between expert "medical opinion evidence" and evidence "presented as a scientific test the results of which were controlled by inexorable, physical laws". 308 Md. at 98.

This distinction was followed in Myers v. Celotex, 88 Md. App., at 548-49, which held in effect that "medical opinion" evidence could be admitted without any evidence of reliability so long as it did not rely upon test data that purported to follow "inexorable, physical laws." In Myers, as discussed *supra*, this Court held that a physician's expert "medical opinion" was not subject to Reed analysis. The Court of Special Appeals stated that Reed analysis "generally applies to the admissibility of evidence based upon novel scientific techniques or methodologies" but not to "medical opinion evidence which is not 'presented as a

scientific test the results of which were controlled by inexorable, physical laws.'" 88 Md. App. at 458-59 (*quoting* State v. Allewalt, 308 Md. at 98).

The next incantation of "inexorable physical laws" involved the exclusion of testimony that could not escape that characterization. Keene Corp. v. Hall, 96 Md. App. 644, 626 A.2d 997 (1993). In Keene, this Court held that the plaintiff's expert testimony was subject to Reed analysis because the expert was relying upon an otherwise generally accepted test that purported to follow "inexorable, physical laws," but he was using that test in a novel way. 96 Md. App. at 655.

In sum, under Maryland law an expert who employs only her imagination and not a "scientific test the results of which [are] controlled by inexorable, physical laws" may opine freely—without scrutiny regarding the reliability or validity of her testimony, yet an expert who employs an otherwise reliable and accepted scientific test must withstand Reed analysis. Arguably, the goals of the Maryland Rules of Evidence are best served by the application of the Rules to all forms of expert testimony, and not by the current stratification of expert testimony into categories wherein only some face judicial scrutiny.

Further wrestling with this difficult concept, this Court held that a statistical probability calculation is not an application of "inexorable physical laws". Keirsey v. State, 106 Md. App. 551, 575, 665 A.2d 700 (1995). But this Court later disapproved Keirsey's statement that mathematical techniques are not subject

to Reed, because Keirsey's finding improperly excludes from judicial scrutiny "some mathematical techniques that should be subjected to reliability analysis." Armstead v. State, 342 Md. 38, 80, fn. 33, 673 A.2d 221 (1996). [8]

Of course mathematical techniques should be subject to reliability analysis. Neither common law nor codified evidence rules should excuse such expert evidence from a reliability examination. "Our decisions should reflect a proper scientific and technical understanding so that the law can respond to the needs of the public." Breyer, *Reference Manual on Scientific Evidence*, p. 2 (2d ed.) (West 2000). Justice Breyer continues, "Consider, for example, how often our cases today involve statistics – a tool familiar to social scientists and economists but, until our own generation, not to many judges." Id. Consistent with these admonitions, the Supreme Court has held that judicial gate-keeping of expert evidence extends to all such evidence, not just "scientific" evidence. Kumho Tire Co. v. Carmichael, 526 U.S. 137, 141, 119 S. Ct. 1167, 1171, 143 L. Ed. 2d. 238 (1999).

[8] The confusion about the application of Reed is so great that even the Court of Appeals has cited Reed, after adoption of Rule 5-702, as the basis to exclude unreliable expert evidence even where the evidence was not "novel." Armstead v. State, 342 Md. at 60-61, 66-67, 673 A.2d 221 ("Although these particularized challenges ordinarily will go to the weight of the evidence rather than its admissibility, the trial judge retains discretion to exclude evidence if it is so unreliable that it would not be helpful to the factfinder. *See, e.g., Reed, 283 Md. at 389, 391 A.2d at 372".*) (Emphasis added).

This unified approach to all expert evidence subject to the Federal Rules of Evidence compares quite favorably to Maryland's attempt to sort expert evidence into niches like "novel"; "generally accepted technique"; "medical opinion"; "inexorable physical laws"; and, "mathematical techniques that should be subjected to reliability analysis." The requirements of Rules 5-702 and 5-703 have been found rigorous enough to properly regulate the admissibility of expert evidence, if they are permitted to do so in a coherent and cohesive fashion. At a minimum, they should not be disregarded in considering admission of expert testimony not relying on a novel technique or principle.

IV. CONCURRENT JURISDICTION OF STATE AND FEDERAL COURTS FAVORS THE USE CONSISTENT RULES FOR ADMISSION OF EXPERT EVIDENCE.

This appeal presents a recurring instance of concurrent jurisdiction of state and federal courts. The plaintiff could have brought this action in a federal District Court. 45 U.S.C. 56 (providing concurrent jurisdiction in FELA cases). Likewise, concurrent jurisdiction exists for personal injury (and other) suits where there is diversity of citizenship. 28 U.S.C. 1332; see also Cavallo v. Star Enterprise, 100 F.3d 1150, 1157-1158 (4th Cir. 1996) (state law claim filed in state court, removed to federal court pursuant to diversity jurisdiction, subject to Federal Rules for admission of expert evidence).

The instant appeal is also an example of a case where exclusion of expert evidence – a causation opinion that provides a necessary element of the plaintiff's claim – is outcome determinative. See, e.g., Giant Food, Inc. v. Booker, 152 Md. App. 166. Therefore, any deviation between Maryland and federal rules for admitting expert evidence can cause the outcome of the judicial truth-seeking function to depend on which court, with equal and concurrent jurisdiction, is the selected forum. The Maryland Rules of Evidence are intended to "promote the growth and development of the law of evidence to the end that the truth may be ascertained and proceedings justly determined." Md. Rule 5-102. The "truth" represented by a given set of facts should not be decided by the choice of one or another court of equal and concurrent jurisdiction.

The Fourth Circuit has correctly placed the question of "general acceptance" among the factors that trial courts must employ in a flexible inquiry about whether an expert's reasoning or methodology is scientifically valid. Cavallo, 100 F.3d, at 1158. *Cavallo* favors cross-examination, contrary opinions, and careful jury instructions over exclusion of expert opinions. Id. None of those tools, however, justifies admitting expert evidence that lacks the validation to prove itself, much less support any reasonable inference. The conventional truthfinding tools, "rather than wholesale exclusion under an uncompromising

'general acceptance' test, are the appropriate safeguards where the basis of scientific testimony meets the standards of Rule 702." Id. at 1159.

By the same token, the uncompromising application of "general acceptance" as a basis for *admitting* expert evidence nullifies conventional truthfinding tools. For these reasons, Maryland should end the confusion inherent between the Maryland Rules of Evidence and the Reed test, by subsuming the latter into its sensible relation with other aspects of the more comprehensive rules validating expert evidence.

CONCLUSION

The Maryland Rules of Evidence should be the exclusive grounds for determining the admissibility of expert evidence, if that evidence is otherwise admissible pursuant to those same rules. At the very least, this Court should make clear that those Rules govern the admission of expert testimony that does not rely on a novel technique or principle. The current confusion between the requirements of the Maryland Rules of Evidence and those of Reed must be resolved in order to achieve the objectives of the Maryland Rules of Evidence and provide consistency of result in cases of concurrent federal and state jurisdiction.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 29th day of December, 2003 two copies of the foregoing were mailed, postage prepaid, to:

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