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Leonidas Pandeladis

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Frye and Daubert: Does Pennsylvania Need a Different Evidentiary Standard for Scientific Evidence?

INTRODUCTION

As technology and science progress, the importance of expert testimony in the courtroom increases in both civil and criminal litigation. The reliability and persuasiveness of many types of expert testimony have drawn much scrutiny and criticism. In response to divergence in the circuits and the growing controversy


2. The usage of expert testimony in criminal proceedings may be vital to a prosecution that must base its entire case on circumstantial evidence. See Commonwealth v. Crews, 640 A.2d 395 (Pa. 1994). The use of ballistics, forensics or other testing may be the only way a jury may be convinced beyond a reasonable doubt in a particular case. Crews, 640 A.2d 395.

3. This criticism occurred in both "academia" (see, e.g., Peter W. Huber, Galileo's Revenge; Junk Science in the Courtroom (1991)) and the courts (see, e.g., Daubert, 951 F.2d 1128).

4. Daubert v. Merrell Dow Pharmaceuticals, 509 U.S. 579, 585 (1993). "We granted certiorari in light of the sharp divisions among the courts regarding the proper standard for the admission of expert testimony." Daubert, 509 U.S. at 584. Compare, e.g. Daubert, 951 F.2d 1128 (general acceptance used) with DeLuca v. Merrell Dow Pharmaceuticals, 911 F.2d 941 (3d Cir. 1991) (general acceptance rejected after enactment of Federal Rules of Evidence). In Daubert, the Ninth Circuit used the traditional Frye "General Acceptance Test" for determining the admissibility of expert scientific evidence. Daubert, 951 F.2d 1128. (For an explanation of the Frye test, see infra note 14). All of the other circuits, except the Third and Second, followed the same test that the Ninth Circuit used. The Third Circuit expressly rejected the General Acceptance test. See United States v. Downing, 753 F.2d 1224 (3d Cir. 1984); DeLuca, 911 F.2d at 941. The Second Circuit did not expressly reject the General Acceptance Test, but expressed doubts as to its continued validity in light of the adoption of the Federal Rules of Evidence in 1975. See United States v. Williams, 583 F.2d 1194 (2d Cir. 1978), cert. denied, 439 U.S. 1117 (1979).
of 'junk science' in the courtroom, the Supreme Court of the United States addressed the admissibility requirements for expert scientific evidence in *Daubert v. Merrell Dow Pharmaceuticals.* The Court's examination resulted in a "new" approach for determining the admissibility of expert scientific testimony in federal courts. Many states have adopted the Supreme Court's approach in *Daubert,* but Pennsylvania has rejected the *Daubert* standard. In failing to adopt *Daubert,* Pennsylvania continues to use the traditional *Frye* "general acceptance" test ("*Frye* test") to determine the admissibility of expert scientific testimony.

At first glance, the general acceptance standard for the admissibility of scientific evidence seems well suited for preventing "bad" scientific evidence from reaching the courtroom, but, upon thorough examination, it is inadequate. Examination of the General Acceptance Test, the more liberal *Daubert* approach, and policy considerations leads to the conclusion that a general acceptance standard is too rigid and must be replaced. If either test is properly implemented, invalid evidence is excluded. However, a problem arises when legitimate evidence, based upon a valid foundation, has not yet reached a level of general acceptance in the scientific community. This evidence can only be used at trial if a *Daubert* standard is employed or, as is often the case in *Frye* jurisdictions, if the trial court 'cheats' on the *Frye* test and inconsistently applies the general acceptance standard.

5. The term "junk science" has been in use for many years, but gained widespread usage (especially in the discussion of expert testimony and talks on tort reform) primarily through the book *Galileo's Revenge: Junk Science in the Courtroom.* In fact, this book was cited by the Ninth Circuit in its first *Daubert* opinion. *Daubert,* 951 F.2d at 1131. The term connotes scientific procedures that are not based upon what is considered to be valid scientific procedure. *Id.* The term is generally directed towards scientific experts that produce studies especially for use when testifying. *Id.*


8. In addition to mandatory adherence of *Daubert* in the federal system, at least twenty-three states have explicitly followed *Daubert* and additional states have used similar approaches.

9. *Crews,* 640 A.2d at 395. The Supreme Court of Pennsylvania refused to adopt a *Daubert*-type analysis. *Id.*


11. *See infra* notes 136-44 for examples of cases using a *Daubert* test to exclude invalid scientific evidence.
BACKGROUND

The Traditional General Acceptance Test

The traditional rule covering the admissibility of expert scientific evidence was first articulated in an appeal from a criminal conviction in Frye v. United States. The United States Court of Appeals for the D.C. Circuit addressed the admissibility of blood-pressure deception measurements as a means of proving the innocence of the defendant. In an extremely brief opinion, the court held that the blood pressure evidence was inadmissible because the results were not generally accepted within the relevant scientific field. The Frye court summed up the rule as follows:

Just when a scientific principle or discovery crosses the line between the experimental and demonstrable stages is difficult to define. Somewhere in this twilight zone the evidential force of the principle must be recognized and while courts will go a long way in admitting expert testimony deduced from a well-recognized scientific principle or discovery, the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs.

This became known as the Frye “general acceptance” test and was the dominant standard for admission of expert scientific evidence in both the federal and state court systems for over half a century.

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12. 293 F. 1013 (D.C. Cir. 1923). Frye was convicted of second degree murder and appealed the decision on the sole basis that the exclusion of proffered expert evidence was reversible error. Id. at 1013.
13. Frye, 293 F. at 1013. This test was an early version of a lie detector. Daubert, 509 U.S. at 585. The test involved the use of blood pressure measurements to determine guilt and was based on the interpretation of the test giver. Frye, 293 F. at 1013. The interpretations of various test administrators could differ and the physiological measurements could differ depending on the test taker. Id. Therefore, the results of the test were clearly opinion, not factual. Id. As such, the result of the test was scientifically uncertain. Id. These reasons still preclude lie detector evidence under a Daubert analysis. See United States v. Kwong, 69 F.3d 663, 668 (2d Cir. 1995); United States v. Lech, 895 F. Supp. 582, 585 (S.D.N.Y. 1995); United States v. Posado, 57 F.3d. 428, 435 (5th Cir. 1995).
14. The Frye opinion takes up less than two pages of the reporter, and the actual portion considering the admissibility of expert scientific evidence consists of only two paragraphs. Frye, 293 F. at 1013.
15. Id. at 1014. The court stated that these fields were human psychology and physiology. Id.
16. Id. In Daubert, the court quoted this passage and referred to it as “famous or perhaps infamous.” Daubert, 509 U.S. at 585-86.
Under Frye's General Acceptance Test, a court faced with a proffer of "novel" scientific evidence had to consider other evidence to determine whether the expert evidence was "generally accepted" in its relevant field.\(^1\) This process of determining the acceptance of evidence required consideration of the following: "(1) [T]he status, in the appropriate scientific community, of the scientific principle underlying the proffered novel evidence; (2) the technique applying the scientific principle; and (3) the application of the technique on the particular occasion or occasions relevant to the proffered testimony."\(^1\) Thus, the general acceptance standard excluded scientific evidence that was new or innovative even when its foundational basis consisted of "valid" scientific testing and principles. Expert scientific testimony could not be admitted until the basis of the testimony moved from the forefront of the field to the mainstream. Therefore, the General Acceptance Test precluded all innovative testimony despite its relevance or reliability.

The Federal Rules of Evidence

Before 1975, evidentiary rules were solely a product of judicial creation. In 1975, Congress ratified the Federal Rules of Evidence ("Fed. R. Evid.") which effected a dramatic change in the law of evidence. Congress enacted these rules for use in all federal courts.\(^9\) The Supreme Court prescribed the rules of evidence. Some rules were enacted as prescribed; others were amended by Congressional advisory committees prior to ratification.\(^2\)

In the Daubert decision, the Supreme Court listed and discussed the following rules that are central to evaluating expert scientific testimony: Fed. R. Evid. 104, 401-03, 702-03, and 706.\(^2\) Rule 104 establishes the authority of a trial judge to determine the

\(^1\) United States v. Downing, 753 F.2d 1224, 1234 (1984). This other evidence consisted of expert testimony regarding what is the generally accepted practice in a field. Downing, 753 F.2d at 1234. This appears to be a circular approach in that a court needs to use expert testimony to determine the validity of expert testimony.

\(^2\) Downing, 753 F.2d at 1234. This is how the Third Circuit summarized the procedure of a Frye hearing that determines whether expert scientific evidence satisfies general acceptance requirements. Id. After examining this procedure, the Third Circuit believed the Frye test did not conform to the requirements of the Federal Rules of Evidence. Id.


\(^2\) Three legislative advisory committees participated in the enactment and modification of the proposed rules of evidence. The House of Representatives and Senate each had a committee. In addition, there was a joint committee composed of members from both houses of Congress.

\(^2\) Daubert, 509 U.S. at 587-95.
admissibility of evidence. This rule gives the trial judge extensive power to exclude evidence and is the source of the judge's authority as "gatekeeper" of the evidence. Rule 401 articulates a liberal definition of "relevant evidence." This broad definition states that evidence is relevant if it possesses any tendency making the existence of any fact of consequence probable or improbable. Rule 402 establishes the admissibility of relevant evidence. Rule 403 grants a trial judge the discretion to exclude relevant evidence. The exclusion of relevant evidence can occur if the judge determines that it will unfairly prejudice, mislead or confuse the jury. In addition, the judge can exclude evidence if, in his discretion, he determines that it will waste time or cause undue delay. Rule 702 governs expert witnesses. Rule 702 states that experts with scientific, technical or other specialized knowledge may testify as witnesses if such testimony assists the jury's understanding of evidence or determination of a fact. Rule 703 changes the common law and allows for the admission of hearsay evidence when experts are testifying. Experts can base an opinion

22. FED. R. EVID. 104(a). "PRELIMINARY QUESTIONS: (a) Questions of Admissibility Generally. Preliminary questions concerning the qualification of a person to be a witness, the existence of a privilege, or the admissibility of evidence shall be determined by the court, subject to the provisions of subdivision (b). In making its determination it is not bound by the rules of evidence except those with respect to privileges." Id.

23. Id.

24. FED. R. EVID. 401. "DEFINITION OF "RELEVANT EVIDENCE: Relevant evidence means evidence having any tendency to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence." Id.

25. Id.

26. FED. R. EVID. 402. "RELEVANT EVIDENCE GENERALLY ADMISSIBLE; IRRELEVANT EVIDENCE INADMISSIBLE: All relevant evidence is admissible, except as otherwise provided by the Constitution of the United States, by Act of Congress, by these rules, or by other rules prescribed by the Supreme Court pursuant to statutory authority. Evidence which is not relevant is not admissible." Id.

27. FED. R. EVID. 403. "EXCLUSION OF RELEVANT EVIDENCE ON GROUNDS OF PREJUDICE, CONFUSION, OR WASTE OF TIME: Although relevant, evidence may be excluded if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury, or by considerations of undue delay, waste of time, or needless presentation of cumulative evidence." Id.

28. Id.

29. Id.

30. FED. R. EVID. 702. "TESTIMONY BY EXPERTS: 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." Id.

31. Id.

32. FED. R. EVID. 703. "BASES OF OPINION TESTIMONY BY EXPERTS: The facts or data in the particular case upon which an expert bases an opinion or inference may be those
on hearsay if the hearsay is a type of fact or data that is reasonably relied upon by the witness' field of expertise.\textsuperscript{33} The final rule that the Supreme Court discussed in \textit{Daubert} was Rule 706, which allows a court to appoint its own expert witness.\textsuperscript{34}

Shortly after Congress enacted the Federal Rules of Evidence, a split in authority developed. The comments and legislative history of Rule 701 did not mention the \textit{Frye} general acceptance rule. Congress’ failure to mention \textit{Frye} created uncertainty about the relationship between Rule 701 and the general acceptance rule. A majority of the circuits\textsuperscript{35} viewed Congress’ silence as an endorsement of the continued validity of the General Acceptance Test.\textsuperscript{36} The minority position held that the Federal Rules of Evidence were clearly at odds with \textit{Frye}.\textsuperscript{37} Under the minority view, the \textit{Frye} rule could not remain determinative and required replacement.

In 1985, the Third Circuit rejected \textit{Frye} with its decision in \textit{United States v. Downing}.\textsuperscript{38} In \textit{Downing}, the Third Circuit reviewed a criminal prosecution involving mail fraud.\textsuperscript{39} Downing appealed his conviction in the Eastern District of Pennsylvania.\textsuperscript{40} The district court had excluded the testimony of an expert witness 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." \textit{Id.}

33. \textit{Id.} “Hearsay” is defined as a “statement, other than one made by the declarant while testifying at the trial or hearing, offered in evidence to prove the truth of the matter asserted.” \textit{Fed. R. Evid. 801(c)}. 34. \textit{Fed. R. Evid. 706}. 35. Prior to \textit{Daubert}, the Third Circuit was the only circuit to expressly reject \textit{Frye}. \textit{United State v. Downing}, 753 F.2d 1224, 1232 (3d Cir. 1985). The Second Circuit also expressed doubt about the validity of \textit{Frye}, but did not expressly reject it. \textit{See United States v. Williams}, 568 F.2d 1194 (2d Cir. 1978) (stating that the Fed. R. Evid. supersede \textit{Frye}), cert. denied, 439 U.S. 1117 (1979). Therefore, the count in the circuits was 11:2 in favor of retaining \textit{Frye} even though the language of the Fed. R. Evid. did not seem to endorse such an approach.

36. In fact, some circuits found that \textit{Frye} actually conformed with the Fed. R. Evid. and explicitly retained the General Acceptance Test. \textit{See Barrel of Fun Inc. v. State Farm Fire and Cas. Co.}, 739 F.2d 1028 (5th Cir. 1984).

37. \textit{Downing}, 753 F.2d 1224. The Supreme Court of the United States adopted this minority position. \textit{Daubert}, 509 U.S. at 587. The Court noted that it was specifically basing \textit{Daubert} in part on \textit{Downing} (which was the genesis of the Third Circuit’s minority approach). \textit{See Daubert}, 509 U.S. at 594 n.12.

38. 753 F.2d 1224 (3d Cir. 1985).


40. \textit{Downing}, 753 F.2d at 1224.
for the defense. The expert testimony would have been introduced to show the unreliability of eyewitness recollections based on psychological studies. The district court excluded the expert evidence based upon the General Acceptance Test of Frye. Downing argued that the Frye test conflicted with the Federal Rules of Evidence and thus the district court erroneously excluded the expert testimony. The Third Circuit court agreed and held the General Acceptance Test invalid.

After invalidating the Frye test, the Third Circuit created a new test based upon the language of Federal Rules of Evidence 401, 402 and 701. The Third Circuit proposed this test to satisfy the more flexible standards of the Fed. R. Evid. The Downing test consisted of a preliminary inquiry by the court on the relevancy and reliability of novel scientific evidence. The Third Circuit stressed that the quality of the evidence was more important than the quantity of people who accepted its use. The Third Circuit summed up its position by stating:

In our view, Rule 702 requires that a district court ruling upon the admission of (novel) scientific evidence, . . . conduct a preliminary inquiry focusing on (1) the soundness and reliability of the process or technique used in generating the evidence, (2) the possibility that admitting the evidence would overwhelm, confuse, or mislead, the jury, and (3) the proffered connection between the scientific research or test result to be presented, and particular disputed factual issue in the case.

Thus, the Third Circuit abandoned a general acceptance approach

41. Id. at 1226.
42. Id. at 1227. The defense attempted to introduce this expert evidence because the prosecution's case consisted solely of eye witness accounts. Id.
43. Id. at 1228.
44. Id. at 1226.
45. Downing, 753 F.2d at 1234.
46. Id. at 1237-39. For the text of these rules, see supra notes 24 and 26.
47. Id. at 1237. The Third Circuit noted that this preliminary inquiry was not necessary if the proffered evidence had a foundational basis that was capable of being accepted via judicial notice. Id. at 1241. The Supreme Court also noted that firmly established scientific theories are "properly subject to judicial notice" under Fed. R. Evid. 201. Daubert, 509 U.S. at 593 n.11. The court labeled these theories "scientific laws" and listed thermodynamics as an example. Id.
48. Id. at 1237-38. The Third Circuit referred to the Frye test as "nose counting." Id.
49. Id. at 1237. The court describes this procedure as "an incorporation of the relevancy and prejudice analyses implicated in Rule 702's helpfulness standard." Id. at 1237 n.15. This means that the court must also determine that the offered testimony will be helpful to the fact finders in making their determination. Id.
in admitting scientific evidence and replaced it with a flexible balancing analysis. A district court may consider general acceptance in deciding whether to admit scientific evidence, but it is no longer dispositive.

**THE DAUBERT CASE**

In *Daubert v. Merrell Dow Pharmaceuticals*, two infants born with birth defects and their parents sued Merrell Dow in California state court alleging that the mothers' ingestion of the drug Bendectin during pregnancy caused the children's birth defects. Merrell Dow removed the suits to the Southern District of California on diversity grounds pursuant to 28 U.S.C. sections 1332 and 1441.

After the completion of discovery, Merrell Dow moved for summary judgment, arguing that the plaintiffs failed to establish a genuine issue of material fact concerning causation. Merrell Dow asserted that the evidence did not prove that Bendectin was more probably than not the proximate cause of the infant-plaintiffs' birth defects. The district court granted Merrell Dow's motion based on epidemiological studies that showed no significant increase in birth defects arising from *in utero* exposure to Bendectin. The district court did not consider the plaintiffs' evidence, however, because it determined that the evidence failed to satisfy the General

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50. *Daubert*, 43 F.3d 1311, 1313. The plaintiffs were Jason Daubert and Eric Schuller. *Id.* at 1311. Both plaintiffs were born with limb reduction birth defects. *Id.* This deformity is fairly rare. *Id.* at 1313. It occurs in less than one birth out of every thousand. *Id.*

51. *Id.* at 1313. Bendectin was the brand name for a prescription anti-nausea drug manufactured by Merrell Dow. *Id.*

52. The requirements for diversity in the federal system are set forth in 28 U.S.C. § 1332 (1998). Diversity is present when the amount in controversy in a civil action exceeds $75,000. (The amount in controversy was increased as of January 1, 1997. The controversy amount at the time of *Daubert* was $50,000 under 28 U.S.C. § 1332 (1989), exclusive of costs and interest.) In addition, the plaintiffs and defendants must be citizens of different states. When both requirements are met, a federal district court may assert original jurisdiction 28 U.S.C. §1332 (1998). Under 18 U.S.C. § 1441, the defendant may remove a suit filed in a state court to the appropriate federal district court if the requirements of 18 U.S.C. § 1332 are satisfied 18 U.S.C. §1441. In *Daubert*, both requirements for diversity jurisdiction were found to exist by the district court because the alleged damages were in excess of $50,000, Merrell Dow was found to be a Delaware resident, and Daubert a California resident. *Daubert v. Merrell Dow Pharmaceuticals*, Inc., 727 F. Supp. 570 (S.D. Ca 1989).


54. *Id.* at 571-72.

55. Epidemiological studies are statistical analyses that compare the incidence of a disease in a control group that has not been exposed to the concerned agent with the incidence of disease in an exposed group, to determine exposure causation.
Acceptance Test. The excluded evidence consisted of in vitro studies, chemical analyses comparing a component chemical of Bendectin to known teratogens, and animal studies. The plaintiffs’ evidence did not satisfy the general acceptance requirement because it was not the type of evidence that scientists generally use to establish a causal link between a substance and birth defects. The plaintiffs also attempted to introduce an unpublished reanalysis of epidemiological studies. The district court stated that the study was unreliable and therefore failed to adequately support the claim that Bendectin significantly increased the incidence of birth defects.

The plaintiffs appealed the district court’s grant of summary judgment to the Ninth Circuit. The plaintiffs argued that the district court ruled erroneously because the scientific evidence that they proffered created a genuine issue of causation for the jury to decide. Affirming the district court, the circuit court held that the plaintiffs’ scientific evidence did not satisfy the Ninth Circuit’s general acceptance requirement. The circuit court stated that epidemiological studies were the generally accepted means of establishing a causal link between a substance and human birth defects. The circuit court further concluded that the plaintiffs’ epidemiological study did not satisfy the generally accepted procedure of publishing results and subjecting them to peer review. The court based its ruling on the scientists’ unwillingness to subject their epidemiological studies to peer review and scientific scrutiny coupled with their willingness to produce the study for litigation.

The Supreme Court of the United States reviewed the Ninth

57. In vitro studies are commonly referred to as “test tube” studies. They study the effect of chemical agents on cell or tissue cultures instead of complete organisms.
58. A “teratogen” is an agent that causes developmental defects in fetal tissue. MERRIAM WEBSTER’S COLLEGIATE DICTIONARY 1216 (10TH ED. 1994).
59. Animal studies attempt to show an agent’s effect on humans by extrapolating the effect on species that possess similar physiological systems.
60. Daubert, 727 F. Supp. at 575.
61. Id. at 576-76.
62. Id.
63. Daubert v. Merrell Dow Pharmaceuticals Inc., 951 F.2d 1128 (9th Cir. 1991).
64. Daubert, 951 F.2d at 1129-30. The Ninth Circuit did note that this was not the standard in the Third Circuit, citing DeLuca v. Merrell Dow Pharmaceuticals, 911 F.2d 941 (3d Cir. 1990). Daubert, 951 F.2d at 1130 n.2.
65. Id. at 1130-31.
66. Id.
67. Id.
Circuit's affirmation of the district court's grant of summary judgment. The petition for certiorari presented two questions:

First, whether the rule of *Frye v. United States* remains good law after the enactment of the Federal Rules of evidence; and second, if *Frye* remains valid, whether it requires expert scientific testimony to have been subject to a peer review process in order to be admissible.\(^6\)

The Supreme Court held that *Frye* was no longer good law and, thus, the second question was rendered moot.\(^6\) The Court vacated the judgment regarding the inadmissibility of the proffered scientific evidence.\(^7\) Reversal was required as a matter of law since the Court ruled that *Frye* no longer controlled. In addition to overruling *Frye*, the *Daubert* Court's decision compels federal judges to be the "gatekeepers" of scientific evidence and arbiters of what constitutes "good" science.\(^7\)

The Federal Rules of Evidence, which have controlled admissibility of scientific evidence since their enactment in 1975, provide for a "liberal thrust" which conflicts with the "rigid" common law General Acceptance Test of *Frye*.\(^7\) The Court specifically stated that a general acceptance standard is inconsistent with the Federal Rules of Evidence and, therefore, must be overruled.\(^7\)

The second major part of *Daubert* establishes the "gatekeeping" role of district courts in determining the admissibility of scientific evidence.\(^7\) "[U]nder the Rules the trial judge must ensure that any and all scientific testimony or evidence admitted is not only

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68. *Daubert*, 509 U.S. at 598 (citations omitted).
69. Id.
70. Id.
71. Id. The facts of *Daubert* dealt with the admission of expert scientific testimony, but the Court noted that its opinion extended to technical and other expert testimony because of the language and scope of Fed. R. Evid. 701. See *Daubert*, 509 U.S. at 590 n.8.
72. Id. at 588.
73. *Daubert*, 509 U.S. at 588.
74. Id. at 589.
75. Id. at 593-94. This "gatekeeping" role of federal judges derives from Fed. R. Evid. 104(a) (see supra note 22). It represents the broad discretion federal judges possess when making preliminary determinations involving evidence. Id. Judges are authorized to make any preliminary determinations they feel are necessary when determining the qualification of a witness or the admissibility of evidence. Id. Federal judges possess no discretionary limitations in this "gatekeeping" role except those associated with privileges, such as attorney-client privilege (which protects the client by preventing an attorney from being compelled, under court order, to divulge information obtained in the course of representation) and relevancy as stated in Fed. R. Evid. 104(b), FED. R. EVID. 104(a).
relevant, but reliable.”

This “gatekeeping” role commands the judge to evaluate the relevancy and reliability of evidence using a preponderance standard. It is based upon and fulfills the mandates of Rule 104. The Supreme Court summed up the trial court’s gatekeeping as follows:

Faced with a proffer of expert scientific testimony, then, the trial judge must determine at the outset, pursuant to Rule 104(a), 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. We are confident that federal judges possess the capacity to undertake this review.

The Court also noted that trial courts may consider hearsay testimony and procure the assistance of an expert of their own choosing in performing the “gatekeeping” role. Finally, the Court noted scientific evidence that is both relevant and reliable may still be excluded pursuant to Rule 403.

In order for trial courts to effectuate their “gatekeeping” role, the

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76. Id. at 589.
77. Id. at 593 n.10. The Court directed attention to Bourjaily v. United States, 483 U.S. 171, 175-76 (1987). This case establishes the standard of proof that a court must use in establishing the admission of evidence under the Fed. R. Evid. Id. The preponderance standard is a determination that a fact is more likely than not true. Numerically this would be expressed as a likelihood in excess of fifty percent.
78. Daubert, 509 U.S. at 592. See supra note 22; FED. R. EVID. 104.
79. Daubert, 509 U.S. at 592-93.
80. Id. at 595. The court based this assertion on Fed. R. Evid. 703. Id.
81. Id. This is based upon Fed. R. Evid. 706. Id. The court may obtain an expert to clarify scientific testimony and evidence presented by the parties’ experts. Id. This expert works for the court and informs and educates the judge regarding principles necessary for making his or her determinations. Id. Fed. R. Evid. 706 represents Congress’ realization that judges are experts in the law and not in scientific theories. Id. As such, a judge may need assistance in reaching the proper determination. Id.
82. Id. (For the text of Fed. R. Evid. 403, see supra note 27). The evidence may be excluded if it satisfies the reliability and relevance requirements if the judge, in his “gatekeeping” role, determines that the evidence will substantially confuse or mislead the jury. Id. Thus, evidence that is probative, but not legitimately comprehensible to the jury or is not subject to realistic evaluation by the jury can be excluded by the trial judge. Id. In addition, the trial judge can exclude relevant evidence if the evidence is unfairly prejudicial (in that it may affect the jury’s emotions more than it aids the jury in its analytical determinations of the facts); cumulative (the parties case has already been proved and this evidence is only “piling” it on); or causes undue delay in the trial. FED. R. EVID. 403.
Supreme Court listed a series of factors the trial courts may consider in their assessment of the reliability and relevancy of scientific evidence. This list consisted of: whether the scientific knowledge can and has been tested; whether the theory and methodology have been subjected to peer review, including publication; the known or potential rate of error for the expert's techniques; the existence and maintenance of standards controlling the technique's operation; and the possible incorporation of "general acceptance" into the overall inquiry. The Court stated that the list was not definitive, but merely representative of the general types of inquiries appropriate for satisfaction of the Federal Rules of Evidence's flexible standard of admissibility.

The Supreme Court reversed and remanded Daubert for the determination of whether the proffered scientific evidence would be admissible under the more liberal standard of the Fed. R. Evid. On remand, the Ninth Circuit articulated a two-prong test, based on Daubert, for analysis of scientific evidence. The first prong questions whether the proffered testimony consists of "scientific knowledge," that is, whether the expert's findings are "derived by the scientific method" and amount to "good science." The second prong, labeled by the Ninth Circuit as the "fit" requirement for admissibility, questions whether the testimony is "relevant to the task at hand." If the evidence produces an affirmative answer for both prongs, the evidence is considered relevant and reliable and thus admissible.

The Ninth Circuit stated that the factors listed by the Supreme

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83. *Daubert*, 509 U.S. at 593.
84. Id.
85. Id. Publication, although important, is not the only element of peer review. Id. The Court stated that publication is not a *sine qua non* of admissibility and may not even guarantee reliability. Id.
86. Id. at 594.
87. Id.
88. *Daubert*, 509 U.S. at 594. The Court noted that general acceptance is not required, but may be permitted. Id.
89. Id. at 593.
90. *Daubert v. Merrell Dow Pharmaceuticals Inc.*, 43 F.3d 1311, 1315 (9th Cir. 1995).
91. *Daubert*, 43 F.3d at 1315 (quoting the Supreme Court's language in *Daubert*). The Court defined "scientific" as a term "impl[y]ing a grounding in the methods and procedures of science." *Daubert*, 509 U.S. at 590. "Similarly, the word 'knowledge' connotes more than a subjective belief or unsupported speculation." Id.
92. *Daubert*, 43 F.3d at 1315.
93. Id.
94. Id.
Court were only illustrative\textsuperscript{95} and, therefore, the court was not required to weigh all of these possible factors.\textsuperscript{96} The Ninth Circuit concentrated its analysis on the fact that the scientific results were unpublished and were merely prepared for litigation purposes.\textsuperscript{97} Although that did not automatically invalidate the scientific evidence, it subjected the evidence to closer scrutiny.\textsuperscript{98} The circuit court noted that the results of the first prong of its Daubert analysis did not favor the plaintiffs, but if its analysis were limited only to this test, it would be inclined to remand to allow the plaintiffs to introduce more evidence.\textsuperscript{99} However, the circuit concluded that it could not remand the case based upon the second prong of its Daubert analysis.\textsuperscript{100} The circuit court noted that establishing causation requires a plaintiff to prove that a substance \textit{did} increase the likelihood of injury — not that it could merely have increased the likelihood of injury.\textsuperscript{101} Specifically, the plaintiff must show that the substance, more likely than not, caused the injury or increased the risk of injury to a level greater than fifty percent.\textsuperscript{102} Because the plaintiff's evidence could not establish this level of causation, it failed the "fit" requirement. Consequently, the circuit affirmed the exclusion of the plaintiffs' scientific evidence and the resulting summary judgment for the defendants.\textsuperscript{103}

\textbf{AFTER DAUBERT}

\textit{Daubert} extrapolated Third Circuit precedent established almost a decade earlier in \textit{Downing} and employed an even broader approach.\textsuperscript{104} The Third Circuit revisited the issue of the

\textsuperscript{95} Id. at 1317-18. In fact, the Ninth Circuit found it was impossible to utilize all of the factors in the \textit{Daubert} case. Id. at 1317 n.4.

\textsuperscript{96} Id.

\textsuperscript{97} \textit{Daubert}, 43 F.3d at 1317-20.

\textsuperscript{98} Id.

\textsuperscript{99} Id.

\textsuperscript{100} Id. at 1321.

\textsuperscript{101} Id. at 1320-21.

\textsuperscript{102} \textit{Daubert}, 43 F.3d at 1320-21. Causation is an issue of substantive law. In diversity cases, the law of the forum state is controlling. \textit{See} Erie Railroad v. Tompkins, 304 U.S. 64 (1938). "Except in matters governed by the Federal Constitution or by acts of Congress, the law to be applied in any case is the law of the state." \textit{Erie Railroad}, 304 U.S. at 78. Thus, the causation standard is the substantive law of California. Id.

\textsuperscript{103} The plaintiffs appealed the decision, but the Supreme Court denied certiorari. \textit{Daubert} v. Merrell Dow Pharmaceuticals, 116 S. Ct. 189 (1995).

\textsuperscript{104} The \textit{Daubert} approach was broader, in that the Supreme Court examined more of the Federal Rules of Evidence than the Third Circuit had and considered more factors in determining what constitutes "relevant" and "reliable" scientific evidence.
admissibility of scientific evidence in *In re Paoli R.R. Yard PCB Litig.* Paoli illustrates the interaction of the Third Circuit's *Downing* test with the mandated "gatekeeping" role for federal judges set forth in *Daubert*.

In *Paoli*, a mass toxic tort case, the plaintiffs sued for damages resulting from their exposure to PCBs. The plaintiffs claimed that their damages consisted of present personal injury, monitoring for future injuries necessitated by their increased risk of disease and the diminution of the market value of their property. The district court excluded the plaintiffs' expert scientific evidence and granted the defendants' motion for summary judgment.

In reviewing the district court's holding, the Third Circuit considered both the *Daubert* and *Downing* standards. The court held that a trial court must conduct extensive review of scientific evidence and hold *in limine* hearings at which all parties may offer proof. In addition to *in limine* hearings, the Third Circuit stated that a district court must allow extensive discovery of expert

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105. 35 F.3d 717 (3d Cir. 1994), *cert. denied sub nom.*, General Elec. Co. v. Ingram, 513 U.S. 1190 (1995). This case is actually the Third Circuit's second review of the trial court's exclusion of evidence and grant of summary judgment. For this reason, the case is referred to as *Paoli II* for convenience. The first time that the Third Circuit reviewed the case, it did so based solely on the standards set forth in *Downing*.

106. In 1986, thirty-eight plaintiffs originally filed suit against nine different defendants consisting of a variety of governmental entities or major corporations. See *In re Paoli R.R. Yard PCB Litig.*, 706 F. Supp. 358 (E.D. Pa. 1988). Some suits were filed in Pennsylvania courts while others were filed in the Eastern District of Pennsylvania. *Paoli*, 706 F. Supp. at 358. The district court's jurisdiction was originally based upon 28 U.S.C. § 1331 which allows jurisdiction in suits arising under a federal question (in this case the federal question was the recovery of damages and response costs under CERCLA). *Id.* The state claims were consolidated in the district court under pendant jurisdiction pursuant to 28 U.S.C. § 1441(c). *Id.* The district court granted summary judgment on all claims except the CERCLA claims. *Id.* The Third Circuit reversed and remanded based upon procedural grounds and ordered the trial court to develop a better factual record. See *In re Paoli R.R. Yard PCB Litig.*, 916 F.2d 829 (3d Cir. 1990) ("*Paoli I*"). In response to the order, the district court held five days of in limine hearings and again excluded the plaintiffs' evidence. See *In re Paoli R.R. Yard PCB Litig.*, 811 F. Supp. 1071 (E.D. Pa. 1992). The district court then granted summary judgment in a 330 page opinion. *Paoli*, 811 F. Supp. at 1071. This resulted in the Third Circuit reviewing the case a second time and interpreting the evidence based upon the 'new' "gatekeeping" mandate set forth by *Daubert*. In re Paoli R.R. Yard Litig.*, 35 F.3d 717 (3d. Cir. 1994).

107. "PCB" is an abbreviation for poly-chlorinated biphenyl. These materials were manufactured and sold as insulators. The largest PCB manufacturer was Monsanto Corporation who marketed them under the trade name Aroclor. PCBs were determined to be highly toxic and a possible human carcinogen in many various forms including furans and dioxins which are two substances into which PCBs may convert.

108. *Paoli II*, 35 F.3d at 738-39. The plaintiffs originally included CERCLA claims, but voluntarily dismissed these after *Paoli I*. *Id.*

109. *Id.* at 738-39.
testimony including depositions of the opposing party's experts.\textsuperscript{110}

Following the liberal \textit{Daubert} approach, the Third Circuit instructed that the following factors should be considered in evaluating the admissibility of expert evidence: the expert's qualifications,\textsuperscript{111} the reliability of the proffered testimony,\textsuperscript{112} and how the evidence "fit" the case.\textsuperscript{113} In addition, the Third Circuit stressed that the reliability and relevance of the evidence should be weighed against the possibility of confusing the jury.\textsuperscript{114} The \textit{Paoli} court referred to this as the "Rule 403/702 balancing test" and emphasized that the mere difficulty or complexity of scientific evidence is not in issue.\textsuperscript{115} Unless all of these requirements are satisfied, the court held, scientific evidence is not admissible under the \textit{Daubert} analysis of the Fed. R. Evid.\textsuperscript{116} Thus, the \textit{Paoli II/ Daubert} analysis has replaced \textit{Downing} as the Third Circuit's standard and has been implemented by all of the district courts within its jurisdiction.\textsuperscript{117}

\textbf{PENNSYLVANIA}

At the present, evidentiary rules in Pennsylvania are derived solely from court decisions, and as such, rules of evidence derive from case precedent.\textsuperscript{118} A review of Pennsylvania cases shows that

\begin{itemize}
\item \textsuperscript{110} \textit{Id.} at 739.
\item \textsuperscript{111} \textit{Id.} at 741. The Third Circuit stressed that this requirement was to be liberally interpreted. \textit{Id.} It also stated that a court cannot determine that the lack of a certain degree is solely the proper grounds for exclusion of evidence. \textit{Id.}
\item \textsuperscript{112} \textit{Id.} at 742. The Third Circuit stated that reliability is a flexible standard that a court can determine by using numerous factors, but that it was making clear that a trial court should use all of the factors listed in either \textit{Daubert} or \textit{Downing}. \textit{Id.} The court then listed these eight factors that it deemed important. \textit{Id.} at 742 n.8. The court stated that any other factors that are relevant must also be considered. \textit{Id.} at 742.
\item \textsuperscript{113} \textit{Paoli II}, 35 F.3d at 742-43. The scientific evidence does not "fit" unless it will assist the trier of fact. \textit{Id.} "Fit" was originally put forth in \textit{Downing} and is part of that decision adopted in \textit{Daubert}.
\item \textsuperscript{114} \textit{Id.} at 746-47.
\item \textsuperscript{115} \textit{Id.} at 746. The Third Circuit stated that only something particularly confusing will lead to the exclusion of scientific evidence. \textit{Id.} at 747.
\item \textsuperscript{116} \textit{Id.} at 745. "[A]ny step that renders the analysis unreliable under the \textit{Daubert} factors renders the expert's testimony inadmissible." \textit{Id.}
\item \textsuperscript{118} \textit{Pennsylvania Supreme Court Adopts First Rules of Evidence}, May 14, 1998, <http://www.courts.state.pa.us/pub/commleg/prrel508.htm>. The administrative office of the
the Commonwealth has not produced an authoritative opinion changing or abandoning the General Acceptance Test in favor of a Daubert-type approach.

A Pennsylvania appellate court first addressed the admissibility of scientific evidence after Daubert in Commonwealth v. Crews. In Crews, the Supreme Court of Pennsylvania addressed the admissibility of DNA testing. In determining that DNA evidence was admissible, the court acknowledged that the standard for the admission of scientific evidence remained general acceptance. The supreme court noted the Supreme Court of the United States' decision in Daubert, but chose not to adopt a similar standard or test in Pennsylvania. In rejecting the adoption of Daubert, the Pennsylvania court stated that the Daubert decision was a narrow holding. The court believed Daubert did not establish a test to determine the worthiness of scientific evidence, but merely

Pennsylvania courts issued a press release announcing that the Supreme Court adopted a set of evidentiary rules for Pennsylvania on May 8, 1998. Id. The Pennsylvania Rules of Evidence are scheduled to come into effect on October 1, 1998. Id. These rules will govern and practitioners will no longer have to search case law to determine evidentiary rules. Id.

The meaning of authoritative in this sense refers to opinions originating in a state appellate court that would be binding on state trial courts. In Pennsylvania, authoritative opinions could be authored by the Superior Court of Pennsylvania, the Commonwealth Court acting in its capacity as an appellate court for cases in which the Commonwealth is a party, and the Supreme Court of Pennsylvania.


None of these cases chose to adopt a more liberal approach to scientific evidence. In fact, the courts in these cases determined that the question of whether Pennsylvania should adopt a more liberal standard than "general acceptance" was not before them and, therefore, the question of whether to adopt an approach similar to Daubert was not considered.

640 A.2d 395 (Pa. 1994). In Crews, the Supreme Court reviewed an appeal of two first degree murder convictions that had resulted in the imposition of the death sentence. Crews, 640 A.2d at 395.

Crews, 640 A.2d at 399-403. "DNA" is the abbreviation for deoxyribonucleic acid. DNA is double strand of base pairs that determines genetic characteristics based upon the sequence of the pairs. The individuality of humans derives from the sequence of their DNA. The theory behind DNA testing rests on the differences at certain sites on the DNA strand and the probability that the DNA sequences located at a crime scene only match those of the suspect, instead of a random individual from the general population. Id.

Id. at 400 n.2. The court meant that the holding was narrow in that it was based upon the Fed. R. Evid. and not Constitutional grounds. Thus, the case's precedent did not invoke the Supremacy Clause of the United States Constitution requiring implementation of the Daubert holding by state courts.
established the interpretative standard for the Federal Rules of Evidence. Because the Federal Rules of Evidence were not authoritative in Pennsylvania and, at the time Crews was decided, the state had no evidentiary code based upon the rules, the court refused to adopt an interpretive procedural rule lacking a substantive nature.

The court reiterated that "general acceptance" remains the standard for the admission of scientific evidence in Pennsylvania. The court further stated that it was not willing to replace Frye at the present. Although the court chose not to follow Daubert, it did state that a trial court must consider the relevancy and probative value of scientific evidence when determining its admissibility. This statement indicates that although Pennsylvania claims to retain general acceptance, the actual standard is not that rigid. Additionally, the supreme court stated that the jury must evaluate the weight and persuasiveness of evidence and these factors must not operate as the judge's basis for excluding scientific evidence.

Until very recently, Crews was the only Supreme Court of Pennsylvania decision that addressed a Daubert approach for evaluating expert evidence. In fact, in Crews, the supreme court addressed the admissibility of expert scientific evidence more thoroughly than almost any other Pennsylvania appellate case. Nevertheless, the court expressly refused to contemplate or speculate on the Pennsylvania court's approach toward scientific

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125. Id.
126. Id. See supra note 118.
127. Crews, 640 A.2d at 400. "When scientific advances produce new types of evidence, admissibility of such evidence depends on the test first laid down in Frye." Id. The court then quoted the passage from Frye located in the text of this paper accompanying supra note 14.
128. Id. at 400 n.2.
130. Crews, 640 A.2d at 402-03.
evidence in the future.\textsuperscript{133} The lower appellate courts in Pennsylvania have apparently recognized that adopting the \textit{Daubert} approach is exclusively the province of the Supreme Court of Pennsylvania.\textsuperscript{134}

On June 16, 1998, the Supreme Court of Pennsylvania, in affirming the decision of the superior court, explicitly rejected the \textit{Daubert} test in \textit{Commonwealth v. Blasioli}, 1998 WL 313388 (Pa. 1998). The court stated that the stricter standard of \textit{Frye} remains the test for evaluating the admissibility of scientific evidence in Pennsylvania.\textsuperscript{135}

\textbf{ANALYSIS}

To allow trial courts greater flexibility and discretion when determining the admissibility of expert scientific evidence, Pennsylvania must adopt the \textit{Daubert} standard. Such a standard enables valid scientific evidence to be admitted while still excluding invalid scientific evidence. The fact that invalid evidence is excluded by a \textit{Daubert} "reliability/relevance" standard is demonstrated by looking at analogous evidence evaluated under both the \textit{Daubert} and \textit{Frye} standards.

Epidemiological studies that are not statistically validated are inadmissible under both the \textit{Daubert} standard\textsuperscript{136} and the general acceptance standard.\textsuperscript{137} Further, unpublished epidemiological

\textsuperscript{133} Crews, 640 A.2d at 400 n.2. The court stated, "Whether or not the rationale of \textit{Daubert} will supersede or modify the \textit{Frye} test in Pennsylvania is left to another day." \textit{Id.}


As a matter of federal jurisprudence, \textit{Frye} was overruled in \textit{Daubert v. Merrell Dow}, 509 U.S. 579 . . . (1993), on the ground that it had been superseded by the Federal Rules of Evidence. \textit{Daubert} establishes a two-prong test to determine admissibility of scientific evidence: 1) will the testimony assist the trier of fact; and 2) will the testimony be reliable or scientifically valid? . . . Nevertheless, Pennsylvania courts are not bound by the Federal Rules of Evidence, and, for the present, this Court has continued to employ the \textit{Frye} standard for determining the admissibility of novel scientific evidence. . . . [S]ee also Pa. R. E[vid]. 702, Comment (adopted May 8, 1998; effective October 1, 1998).

\textit{Id.} (citations omitted).

\textsuperscript{136} \textit{Daubert v. Merrell Dow Pharmaceuticals, Inc.}, 43 F.3d 1311 (9th Cir. 1995) (on remand); \textit{see also} DeLuca v. Merrell Dow Pharmaceuticals, Inc., 911 F.2d 941 (3d Cir. 1990) (citing similar studies and was decided prior to the United States Supreme Court's mandate).

\textsuperscript{137} \textit{Blum v. Merrell Dow Pharmaceuticals, Inc.}, 705 A.2d 1314 (Pa. Super. 1997). The
studies prepared exclusively for litigation, even if based upon a
valid statistical theory, may be inadmissible under the reliability
analysis of Daubert.\textsuperscript{138} However, these same studies are
theoretically admissible under the General Acceptance Test despite
their unreliability if they satisfy generally accepted standards in the
field.\textsuperscript{139} Courts have successfully excluded unreliable evidence
under both "general acceptance" and the more liberal approach of
Daubert as demonstrated by their exclusion of animal studies that
are determinative of human teratogens,\textsuperscript{140} polygraph tests,\textsuperscript{141}
"multiple chemical sensitivity,"\textsuperscript{142} and repressed memory revival.\textsuperscript{143}
Such exclusions demonstrate that the Daubert standard excludes
"junk science" and strongly suggests that the claims of unreliable
scientific evidence flooding the courts are unfounded.

Policy dictates that Pennsylvania must adopt a more liberal
standard for determining the admissibility of scientific evidence.
Criticism of adopting a more liberal admissibility standard rests on
paternalistic beliefs that we must protect juries from their own
inability to evaluate the validity of scientific evidence.\textsuperscript{144} These
paternalistic beliefs essentially eviscerate the jury system by
undermining the supposed faith that our judicial system places in
juries. If jurors are not trusted to reach an accurate verdict based
on reliable and relevant evidence admitted under the Daubert
standard, how can the courts entrust jurors to determine the life

\textsuperscript{138} Daubert v. Merrell Dow Pharmaceutical, Inc., 43 F.3d 1311 (9th Cir. 1995). A
famous observation of British Prime Minister Benjamin Disraeli sums up the view that
statistical evidence may be unreliable, "There are three types of lies, white lies, damn lies

\textsuperscript{139} Frye, 293 F. at 1014. This result occurs because the reliability of evidence is not
the thrust of the Frye test. \textit{Id}.

\textsuperscript{140} Daubert, 43 F.3d 1311.

\textsuperscript{141} United States v. Kwong, 69 F.3d 663 (2d Cir. 1995).

chemical sensitivity is a condition whereby a person has been exposed to so many
environmental contaminants that his/her immune system is supposedly affected resulting in


\textsuperscript{144} Blum, 705 A.2d at 1316. The Frye test represents an attempt to measure the
quality of scientific evidence prior to admission, so that jurors are not misled by unreliable
evidence. \textit{Id}. 
and death of individuals in capital cases? Further, Anglo-American jurisprudence places such importance on juries that their use is constitutionally guaranteed in both the federal Constitution and that of the Commonwealth.

"General acceptance" is often mistakenly equated with validity; such an assumption is not true. Since courts often are not well-versed in scientific theory, they delegate their decision-making capacity to the general scientific community. If the scientific community were quick to adopt all valid theories, this procedure would be effective. However, scientists are often reluctant to change their views and are not willing to embrace novel or new theories, even those based on valid scientific principles and procedures. This hesitance occurs because of the basic tenets underlying scientific procedures and the belief that one can never prove a theory, only disprove it. Proper scientific procedure involves experimentation designed to disprove a theory. Scientific experimentation cannot prove a theory. Due to the extensive scrutiny that a theorem must pass, a theory that is valid (reliable in the text of admitting evidence) may not be "generally accepted."

CONCLUSION

The supreme court stated in Crews, "Whether or not the rationale of Daubert will supersede or modify the Frye test in Pennsylvania is left to another day." That day has come and the Supreme Court must adopt a more liberal admissibility standard

145. 234 PA. CODE §§ 351-59. These rules govern the proper form that a jury verdict must follow in capital cases when a jury trial has not been waived. Id.
146. See U.S. CONST. amend. VI (guarantee of jury trial in criminal case); and U.S. CONST. amend. VII (guarantee of jury trial in civil cases).
148. An explanation of this limitation on scientific theory can be found in Bertrand Russell's Human Knowledge: Its Scope and Limits (1948).
149. Daubert, 509 U.S. at 590. In Daubert, the Court appears to understand the heightened level of proof that science requires and the concept that science is not able to truly prove any hypotheses. Id. at 509

Of course, it would be unreasonable to conclude that the subject of scientific testimony must be 'known' to a certainty; arguably, there are no certainties in science. Indeed, scientists do not assert that they know what is immutably 'true'—they are committed to searching for new, temporary, theories to explain, as best they can, phenomena. 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.

Id. (citations omitted).
150. Crews, 640 A.2d at 400 n.2.
than that of *Frye*. The usage of the General Acceptance Test produces two undesirable outcomes when valid evidence is introduced. The General Acceptance Test either excludes valid testimony, or causes a court to ignore the literal mandates of the test to admit valid evidence. Both outcomes are unsatisfactory. The exclusion of evidence may produce unjust results by preventing a party from proving his/her case. This is an affront to justice. However, the admission of valid evidence contrary to the literal terms of the general acceptance rule is equally disturbing because such disregard breeds inconsistency and uncertainty in the courts. This inconsistency and uncertainty destroys people’s faith in the judicial system. The only way to prevent both undesirable outcomes is by basing the admission of evidence on its reliability and relevance, despite its general acceptance. If evidence is reliable and relevant, it must be admitted. Only this allows the jury system to work as intended.

*Leonidas Pandeladis*