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The role of science and technology in criminal and civil trials has presented unique challenges to the judicial system since the first recorded use of an expert witness in 1782.1 Today the problem of the admissibility of scientific evidence is compounded by the availability of thousands of scientific studies to prove a party’s case.2 One of the principal dilemmas confronting judges today is conflicting evidence produced by different witnesses on the same issue.3


2. Attorney Accountability: Hearings on H.R. 10 Before the Subcomm. on Courts and Intellectual Property of the House Comm. on the Judiciary, 104th Cong., 1st Sess. 146 (1995) (statement of Dr. Franklin M. Zweig, Pres., Einstein Institute for Science, Health & the Courts) [hereinafter Hearings]. Dr. Zweig testified on Section 102, the Honesty in Evidence Act, part of H.R. 10, the Common Sense Legal Reforms Act of 1995. In 1992, Dr. Zweig directed a random sample survey of state court judges entitled, “Independent, Neutral Scientific Information and Experts for the State Courts.” One of the major problems reported by these judges was conflicting evidence produced by different witnesses on the same evidence. Id. at 147.

3. In a survey of federal and state judges conducted by Dr. Zweig for the 1994 National Conference on Mass Torts, 53% of the 106 judges surveyed found assessing scientific
Currently, society is experiencing an enormous expansion of scientific studies and discoveries, ranging from new synthetic chemicals and advanced industrial processes to the increased accuracy of Deoxyribonucleic Acid (DNA) in forensic science behavior. As science continues to progress, the legal system must develop coherent standards for the management of scientific evidence in federal and state courts. It is likely that the debate over the admissibility of scientific evidence will continue to challenge the judicial system until the parameters of science and law are defined more clearly.

In 1993, the United States Supreme Court considered the general question of the admissibility of scientific evidence in *Daubert v. Merrell Dow Pharmaceuticals, Inc.* Twenty-two amicus briefs were filed dealing with various definitions of scientific knowledge, scientific methods, scientific validity, and peer review. Although the Court provided four factors to aid judges in determining the admissibility of scientific evidence, the decision did not address numerous procedural problems. The Court's failure to apply its own reasoning to whether the scientific testimony in the case validity in testimony among the most difficult problems in dealing with expert testimony. *Id.* at 147. Additionally, toxic substance litigation was expected to increase with respect to 20 toxic substances and to decrease in regard to only five substances. *Id.*


5. See *Hearings*, supra note 2, at 147. The 1993 report of the Carnegie Commission on Science, Technology and Government, which conducted a five year study of the courts, found that due to the complexity of cases before the court, additional assistance with interpreting scientific evidence, concepts, and material was warranted. *Id.* at 147. Likewise, the 1990 study by the Federal Courts Study Committee recommended additional attention to science. *Id.*


7. *Id.* at 598 (Rehnquist, C. J., concurring in part, dissenting in part). The *Daubert* majority viewed peer review as one pertinent consideration in determining whether the expert's testimony is scientifically valid and whether the scientific reasoning or methodology can be applied or to understand or determine the facts at issue. *Id.* at 593. One aspect of peer review would be publication in a journal reviewed by the relevant scientific community. *Id.* The Court stated that submission to the scrutiny of the scientific community is viewed as a part of "good science" because publication helps to insure that flaws in methodology will be discovered. *Id.* at 592-93. The Court did acknowledge that publication or the lack of publication should not be "dispositive." *Id.* at 594.

8. The trial judge is required to make a two-step preliminary assessment under Federal Rule of Evidence 104(a): (1) "whether the reasoning or methodology underlying the testimony is scientifically valid" and (2) "whether that reasoning or methodology properly can be applied to the facts in issue." *Id.* at 592. The Court provided a list of factors for the trial judge to consider, but cautioned that this list should not be considered definitive. These factors are: (1) whether the scientific methodology can be or has been tested; (2) whether the theory or technique has been subjected to peer review and publication; (3) whether the scientific technique has a known error rate and standards controlling its opera-
was admissible has led to confusion and controversy.\(^9\)

This Note analyzes how the judicial system has attempted to regulate the admissibility of scientific evidence and identifies the strengths and weaknesses of the current test for the admissibility of expert testimony under Federal Rule of Evidence 702 ("Rule 702").\(^{10}\) Next, this Note examines the impact of Daubert v. Merrell Dow Pharmaceuticals, Inc. on the admissibility of scientific evidence at the federal and state level. Finally, this Note concludes that the legislative solutions proposed by Congress to amend the language of Rule 702 will not achieve the goal of "restor[ing] accountability, efficiency, and fairness to our federal civil justice system."\(^{11}\)

I. Legal Background: The Controversy Surrounding the Admissibility of Novel Scientific Evidence

A. The Frye Test

The general standard for the admissibility of expert testimony remained stable from the middle of the nineteenth century until the 1923\(^{12}\)
decision of the United States Court of Appeals for the District of Columbia in Frye v. United States.\textsuperscript{13} Before Frye, the admission of scientific evidence focused on the assumption that the superior experience and training of the expert would permit a presentation to the court and jury of the significance of scientific tests that laymen could not be expected to comprehend.\textsuperscript{14} Expertise was implied from the individual's superior qualifications and, in many cases, was based on the degree of professional success the expert enjoyed.\textsuperscript{15} Prior to the twentieth century, the courts did not evaluate separately whether a particular body of knowledge scientifically was accepted.\textsuperscript{16} The admission of expert testimony rested solely on the expert's qualifications.\textsuperscript{17}

Although there was discussion of the problems posed by expert testimony and the use of conflicting scientific evidence in the late nineteenth century,\textsuperscript{18} the decision in Frye v. United States began a new era of judicial regulation of scientific evidence.\textsuperscript{19} In Frye, the scientific evidence in controversy was related to the use of a new systolic blood pressure deception test.\textsuperscript{20} This evidence was to support the innocent plea of a defendant

\footnotesize{\textsuperscript{13} 293 F. 1013 (D.C. Cir. 1923).}
\footnotesize{\textsuperscript{14} Faigman et al., supra note 1, at 1803. In the 1500's experts were part of the jury.}
\footnotesize{\textit{Id.} at 1800 n.2. The basic test for the admissibility of expert testimony in the 1800's was summarized as:}
\footnotesize{The practice of the courts is to admit the testimony of a class of witnesses who are not supposed to have personal knowledge of any facts or circumstances bearing upon a pending case, but on the assumption that they are able from their special training and experience to apply scientific tests and present to the court and jury the import and value of such evidence as may appear, which laymen could not be expected to comprehend and properly estimate.}
\footnotesize{\textit{Id.} at 1803 (citing John B. Chapin, Experts and Expert Testimony, 22 ALB. L.J. 365 (1880).}
\footnotesize{\textit{Id.} at 1804 (explaining what the authors refer to as the commercial market place test).}
\footnotesize{\textit{Id.} at 1805 (explaining that the expert and the scientific knowledge were not viewed separately).}
\footnotesize{\textit{Id.}
\footnotesize{\textsuperscript{15} Id. at 1804 (explaining what the authors refer to as the commercial market place test).}
\footnotesize{\textsuperscript{16} Id. at 1805 (explaining that the expert and the scientific knowledge were not viewed separately).}
\footnotesize{\textsuperscript{17} Id.}
\footnotesize{\textsuperscript{18} Bert Black et al., Science and the Law in the Wake of Daubert: A New Search For Scientific Knowledge, 72 TEX. L. REV. 715, 722 (1994) (citing William L. Foster, Expert Testimony, — Prevalent Complaints and Proposed Remedies, 11 HARV. L. REV. 169 (1897) (maintaining that conflicting expert testimony caused more confusion than clarity); Lee M. Friedman, supra note 1, at 247-49 (detailing problems with expert medical testimony and discussing proposed reforms). See generally Hand, supra note 1, at 54-56 (discussing the difficulty of the jury in arriving at the truth when conflicting expert testimony is offered).}
\footnotesize{\textsuperscript{19} See Black et al., supra note 18, at 722.}
\footnotesize{\textsuperscript{20} Frye, 293 F. at 1013-14. The systolic blood pressure deception test was a primitive type of lie-detector test. At the time there were no polygraphers and the technique was new. Even today, polygraph expert testimony is generally admitted only on stipulation by the parties. Faigman et al., supra note 1, at 1805-06 n.20.}
In excluding the evidence, the D.C. Circuit based the admissibility of the lie-detector test on whether the principle on which the evidence was based was "sufficiently established to have gained general acceptance in the particular field in which it belongs." In sum, the Frye rule required expert opinion based on novel scientific evidence to have gained "general acceptance" by a large scientific group.

The "general acceptance" standard of Frye did not invoke particular scrutiny or wide-spread use until almost a quarter of a century after the decision was rendered. However, by the 1970's the Frye "general acceptance" standard for admissibility of scientific evidence was applied widely in federal and state courts. Criticism of the Frye standard, however, centered on its restrictiveness and uncertainty regarding when a scientific proposition has gained general acceptance. The Frye standard barred the admission of many types of novel scientific evidence because it was not yet acknowledged widely in the scientific community. Other

22. Id. at 1014. Judge Van Orsdal's solution on how to deal with this novel scientific evidence departed only slightly from the prior law. His short, two-page opinion stated: 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.

Id.
24. See Faigman et al., supra note 1, at 1808 n.25 (quantifying the number of times Frye has been cited in the past 25 years since the decision). For a decade after the decision, Frye was not cited by either a federal or a state court, nor were any law review articles written about it. Id. A review of Shepard's Federal Citations indicated that Frye was cited "17 times through 1953, and only 5 times prior to World War II." Black et al., supra note 18, at 722 n.30. With the increase in the use of scientific evidence, citations to Frye increased. For example, Frye was cited 470 times during the 1980s and 350 times in the early 1990s. Id.
25. Faigman et al., supra note 1, at 1808. See Reed v. State, 391 A.2d 364, 368 (Md. 1978) (declaring the Frye test to be the standard in most state courts considering the admissibility of scientific evidence). Frye was applied only in criminal cases for the next sixty years. In federal appellate court, the Frye test first was applied to a civil case in 1984. Gottesman, supra note 10, at 1837-38 n.6.
26. Faigman et al., supra note 1, at 1816.
commentaries supported a more stringent standard, claiming that "junk science" had no place in the courtroom.\textsuperscript{28} Support of the \textit{Frye} standard also centered on the view that scientists were more qualified than judges or juries to assess the reliability of scientific evidence.\textsuperscript{29}

Application of the \textit{Frye} standard can be difficult. Under \textit{Frye}, the court must: (1) identify the specific scientific principle, method, theory, or technique offered by the proponent; (2) define the particular field in which the scientific principle is to be generally accepted; and, (3) determine what demonstrates acceptance.\textsuperscript{30} Courts differed on who was the relevant community for acceptance and what that community was to approve.\textsuperscript{31}

\section{B. The Federal Rules of Evidence}

In 1975, Congress enacted the Federal Rules of Evidence which adopted a less restrictive approach towards the admission of evidence, and gave trial court judges broader discretionary power to screen evidence.\textsuperscript{32} The approach of Rule 702 presented a sharp contrast to the \textit{Frye}

profiles of battered women, and child abusers" were all excluded in jurisdictions that followed the \textit{Frye} standard. \textit{Id.}

\textsuperscript{28} \textit{See} \textit{Peter W. Huber, Galileo's Revenge: Junk Science in the Courtroom} 2-3 (1991). Huber defines "junk science" as a "catalog of every conceivable kind of error: data dredging, wishful thinking, truculent dogmatism, and, now and again, outright fraud." \textit{Id.} Huber opposes what he refers to as the liberal "let-it-all-in" approach, defining "good science" as "the science of publication, replication, and verification, the science of consensus and peer review." \textit{Id.} at 228. Huber advocates that:

[J]unk science is matched by what might be called liability science, a speculative theory that expects lawyers, judges and juries to search for causes at the far fringes of science and beyond. The legal establishment has adjusted rules of evidence accordingly, so that almost any self-styled scientist, no matter how strange or iconoclastic his views, will be welcome to testify in court. The same scientific questions are litigated again and again, in one courtroom after the next, so that error is almost inevitable. \textit{Id.} at 3. But cf. Kenneth J. Chesebro, \textit{Galileo's Retort: Peter Huber's Junk Scholarship}, 42 Am. U. L. Rev. 1637, 1722-26 (1993) (critiquing Huber's book as "junk scholarship").

\textsuperscript{29} \textit{See} People v. Barbara, 255 N.W.2d 171, 193-94 (Mich. 1977)(advocating that experts form a type of "technical jury, which must first pass on the scientific status of a procedure before the lay jury utilizes it in making its findings of fact.") \textit{Id.} at 194.

\textsuperscript{30} Black et al., \textit{supra} note 18, at 727-34.

\textsuperscript{31} \textit{Confronting the New Challenges of Scientific Evidence, supra} note 4, at 1486. A major difficulty with the general acceptance test is identification by the courts of the "pertinent field" in which to evaluate the scientific evidence when it overlaps into more than one discipline or subspeciality. Giannelli, \textit{supra} note 23, at 1208-11.

\textsuperscript{32} \textit{Confronting the New Challenges of Scientific Evidence, supra} note 4, at 1486-87; \textit{See Fed. R. Evid.} 401, 402. Rule 402 provides that "[a]ll relevant evidence is admissible, except as otherwise provided by the Constitution of the United States, by Act of Congress,
test, which required acceptance by a majority of the scientific community before novel scientific evidence could be admitted. Rule 702, which governs expert testimony, provides: "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." No mention is made in the text of Rule 702 or in the Advisory Committee Notes as to whether or not the Frye "general acceptance" standard is to be a prerequisite for admissibility.

After the adoption of Rule 702, some courts continued to apply the Frye test, while other courts followed Rule 702 which embraced a "general approach of relaxing the traditional barriers to 'opinion' testimony." The United States Courts of Appeal for the Second, Third and Fifth Circuits held that the Frye "general acceptance" standard did not survive the adoption of the Federal Rules of Evidence. In contrast, the Sixth, Seventh, and Ninth Circuits held that the validity of the Frye test continued to be in effect, despite the enactment of the Federal Rules of Evidence. Thus, the enactment of Rule 702 created uncertainty and disagreement among the circuits as to the status of the "general acceptance" by these rules, or by other rules prescribed by the Supreme Court pursuant to statutory authority. Evidence which is not relevant is not admissible." FED. R. EVID. 402. Rule 401 defines relevant evidence as "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." FED. R. EVID. 401.

33. FED. R. EVID. 702.

34. United States v. Downing, 753 F.2d 1224, 1234 (3d Cir. 1985); see also Federal Rules of Evidence for United States Courts and Magistrates, 56 F.R.D. 183, 282 (1973) (indicating that there is no reference to the Frye standard in the Advisory Committee's Note on Rule 702).


36. See United States v. Jakobetz, 955 F.2d 786, 794-97 (2d Cir. 1992)(rejecting the Frye test); cert. denied, 113 S. Ct. 104 (1992); Downing, 753 F.2d at 1232-37 (asserting that Frye should not be used as the controlling test of admissibility); Deluca v. Merrell Dow Pharmaceuticals, Inc., 911 F.2d 941, 955 (3d Cir. 1990) (dismissing the "general acceptance" standard); Viterbo v. Dow Chem. Co., 826 F.2d 420, 422 (5th Cir. 1987) (assuming Frye test did not survive adoption of Federal Rule of Evidence 703).

37. Confronting the New Challenges, supra note 4, at 1487-88, 1488 n.36; see also United States v. Metzger, 778 F.2d 1195, 1203 (6th Cir. 1985) (asserting that the United States Court of Appeals for the Sixth Circuit follows the Frye "general acceptance test"); United States v. Gillespie, 852 F.2d 475, 480-82 (9th Cir. 1988) (excluding testimony that did not meet the Frye standard); United States v. Smith, 869 F.2d 348, 350-51 (7th Cir. 1989) (asserting the Frye test survived the enactment of the Federal Rules of Evidence).
Frye test.  

C. Daubert v. Merrell Dow Pharmaceuticals, Inc.

The Supreme Court granted certiorari in Daubert v. Merrell Dow Pharmaceuticals, Inc. to resolve the division among the circuits regarding the standard for the admission of expert testimony. In Daubert, the Court outlined a new test for the admissibility of scientific evidence.

Daubert began when two minor children and their parents sued in California state court. Jason Daubert and Eric Schuller were born with limb reduction birth defects allegedly caused as a result of their pregnant mother's ingestion of Bendectin, an anti-nausea drug manufactured by Merrell Dow Pharmaceuticals. The defendant removed the suit to the United States District Court for the Southern District of California based on diversity of citizenship. After extensive discovery, Merrell Dow Pharmaceuticals moved for summary judgment claiming that the plaintiffs failed to establish an issue of material fact concerning causation because they were unable to present admissible evidence that Bendectin caused birth defects in humans. The defendant submitted an affidavit by Steven H. Lamm, a well-known expert on the risks from exposure of chemical substances. Lamm asserted that none of the more than thirty published studies established that Bendectin was a teratogen, a substance generally capable of causing limb reduction defects.

The plaintiffs did not dispute the published scientific reports on Bendectin. The plaintiffs responded, however, with the testimony of eight scientific experts who concluded that Bendectin can be a teratogen

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38. Confronting the New Challenges, supra note 4, at 1491.
40. Id. at 585.
41. Id. at 592-95.
42. Id. at 582.
43. Id. at 582.
44. Id.
45. Daubert, 727 F. Supp. at 571; Daubert, 509 U.S. at 582. "Summary judgment is proper 'after adequate time for discovery and upon motion, against a party who fails to make a showing sufficient to establish the existence of an element essential to that party's case, and on which that party will bear the burden of proof at trial...'" Daubert, 727 F. Supp. at 571. (quoting Celotex Corp. v. Catrett, 477 U.S. 317, 322 (1986)). Plaintiffs have the burden of proof. Id. The court must decide "whether a fair-minded jury could return a verdict for the plaintiff [based] on the evidence presented." Id. (citing Anderson et al. v. Liberty Lobby, Inc. et al., 477 U.S. 242, 251-52 (1986)).
46. Daubert, 509 U.S. at 582.
that can cause birth defects. These conclusions were based on three types of studies: (1) *in vitro* (test tube) and *in vivo* (live) animal studies that established a link between Bendectin and malformations; (2) pharmacological chemical structure analysis that showed similarities in the structure of Bendectin and other substances that cause malformations; and, (3) reanalysis of previously published epidemiological (human statistical) studies.

The district court granted the motion for summary judgment, concluding that a necessary requirement for the admissibility of scientific evidence is that it must be sufficiently established to have gained general acceptance in its field. The district court maintained that expert testimony that is not based on data reasonably relied on by experts in that particular field is "not helpful, but instead is confusing or misleading and should, therefore, be excluded."

The experts for the plaintiffs combined a number of theories to establish a causal nexus between Bendectin and limb reduction birth defects. The district court maintained, however, that in light of the vast amount of epidemiological data regarding Bendectin, expert opinion that is not based on epidemiological evidence was not admissible to establish causation. Thus, only the plaintiffs' epidemiological evidence, which was based on a reanalysis of previously published epidemiological studies, could be admitted.

Applying the *Frye* general acceptance standard, the district court ruled that the reanalysis was inadmissible because the data presented by the plaintiffs' experts had not been published or subjected to peer review.

The United States Court of Appeals for the Ninth Circuit also applied the "general acceptance" standard of *Frye* and affirmed the district court. The Ninth Circuit relied on the decisions of other appellate courts which refused to admit reanalysis of epidemiological studies that

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47. *Id.* at 583. *See Daubert*, 727 F. Supp. at 573-75 (describing the qualifications of the experts who offered testimony on the behalf of the plaintiff).


49. *Daubert*, 727 F. Supp. at 572 (quoting United States v. Kilgus, 571 F.2d 508, 510 (9th Cir. 1978)).


51. *Id.* at 574-75.

52. *Id.* at 575.

53. *Id.*

54. *Id.* *See Gottesman, supra* note 10, at 575.

were not published or subjected to peer review to evaluate the risks of Bendectin.\textsuperscript{56} The Ninth Circuit stated that reanalysis is accepted by the scientific community only when it has been subjected to evaluation by other experts in the field.\textsuperscript{57} According to the Ninth Circuit, the testimony offered by the plaintiff failed to establish a sufficient foundation to permit admission of expert testimony to show that Bendectin caused the limb reduction injuries.\textsuperscript{58} The Ninth Circuit affirmed the summary judgment in favor of Merrell Dow Pharmaceuticals, stating that expert opinion, which is based on scientific evidence, is inadmissible unless the methods are "generally accepted" in the scientific community.\textsuperscript{59}

In 1993, the United States Supreme Court reversed the Ninth Circuit, declaring that the rigid, general acceptance test of \textit{Frye} was at odds with the "liberal thrust" of the Federal Rules of Evidence and should not be applied in the federal courts.\textsuperscript{60} The Court arrived at this holding by focusing its analysis on the plain language of Rule 702 and the legislative intent behind the Federal Rules of Evidence.\textsuperscript{61}

The Court concluded that the Federal Rules of Evidence require that the trial judge ensure that all scientific testimony and evidence is both reliable and relevant.\textsuperscript{62} The test of admissibility of scientific evidence enunciated by the Court is tied closely to the literal language in Rule 702 which states: "If the 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, experi-

\textsuperscript{56} \textit{Id.} at 1130-31. The court cited four circuits that would not permit plaintiffs to rely on reanalysis of epidemiological studies that had not been either published or subjected to peer review. \textit{Id.} (citing Richardson v. Richardson-Merrell, Inc., 857 F.2d 823 (D.C. Cir. 1988); Lynch v. Merrell-National Labs., 830 F.2d 1190, 1193-96 (1st Cir. 1987); Christoffersen v. Allied-Signal Corp., 939 F.2d 1106, 1111 n.8 (5th Cir. 1991); Brock v. Merrell Dow Pharmaceuticals, Inc., 874 F.2d 307, 312-13 (5th Cir. 1989). The Ninth Circuit noted that the plaintiffs' expert testimony in \textit{Brock} was not held to be inadmissible, but insufficient to support the jury's verdict. \textit{Id.} at 1130 n.1.

\textsuperscript{57} \textit{Id.} at 1131.

\textsuperscript{58} \textit{Id.} The Ninth Circuit held that the plaintiffs do not comply with the standard for admissibility because they were "unpublished, not subjected to the normal peer review process and generated solely for use in litigation." \textit{Id.}

\textsuperscript{59} \textit{Id.} at 1129-30 (citing \textit{Frye} v. United States, 293 F. 1013, 1014 (D.C. Cir. 1923).

\textsuperscript{60} \textit{Daubert}, 509 U.S. at 588. The history of the Federal Rules of Evidence does not mention the rigid \textit{Frye} standard. \textit{Id.} at 588. The general approach of the Federal Rules of Evidence is one of "relaxing the traditional barriers to 'opinion testimony.'" \textit{Id.} (quoting Beech Aircraft Corp. v. Rainy, 488 U.S. 153, 169 (1988)).

\textsuperscript{61} \textit{Daubert}, 509 U.S. at 588-89; see Faigman et al., \textit{supra} note 1, at 1811-13 (analyzing the Advisory Committee notes, Congressional committee reports, and the hearings on the Federal Rules of Evidence).

\textsuperscript{62} \textit{Daubert}, 509 U.S. at 589.
ence, training, or education, may testify thereto in the form of an opinion or otherwise." 63

The Court reasoned that the test for admissibility of evidence under Rule 702 focuses on the reliability or trustworthiness of the scientific studies or data. 64 Analyzing the language of Rule 702, the Court concluded that the term "scientific" requires that the evidence be grounded in the methods and procedures of science. 65 The term "knowledge" in Rule 702 was defined by the Court as "more than subjective belief or unsupported speculation." 66 The Court asserted that knowledge is "any body of ideas inferred from such facts or accepted as truths on good grounds" but which may not necessarily be "known" to a certainty as there are no certainties in science. 67 Thus, the Court concluded that "the requirement that an expert's testimony pertain to 'scientific knowledge' establishes a standard of evidentiary reliability." 68

The Court then analyzed the language of the second part of Rule 702, requiring a relevancy or "helpfulness" determination. 69 This part of the inquiry focused on the probative value and relevance of the data in assisting the fact finder. 70 The Court asserted that the scientific evidence must have a valid connection or "fit" 71 that is "sufficiently tied to the facts of the case so that it will assist the jury in resolving a factual issue in dispute." 72

The Supreme Court presented a list of four factors to guide the trial court judge in determining whether the underlying methodology or reasoning of the testimony is scientifically valid, and whether it can be applied to the facts at issue in the case. The Court referred to trial court judges as evidentiary "gatekeepers" 73 and identified the following factors

63. Fed. R. Evid. 702.
64. Daubert, 509 U.S. at 591 n.9.
65. Id. at 590.
66. Id.
67. Id.
68. Id. at 590 & n.9 (distinguishing validity and reliability from the Court's reference to evidentiary reliability or trustworthiness); see David E. Bernstein, The Admissibility of Scientific Evidence After Daubert v. Merrell Dow Pharmaceuticals, Inc., 15 Cardozo L. Rev. 2139, 2142 (1994).
69. Daubert, 509 U.S. at 591.
70. Id.
71. See id. (discussing "fit" analysis of James E. Starrs, Frye v. United States Restructured and Revitalized: A Proposal to Amend Federal Evidence Rule 702, 26 Jurimetrics J. 249 (1986)).
72. Daubert, 509 U.S. at 591 (quoting United States v. Downing, 753 F.2d 1224, 1242 (3d Cir. 1985)).
73. Id. at 597.
to assist judges in determining whether the scientific evidence is sufficiently reliable and relevant: (1) whether the theory or technique can be tested, refuted, or falsified;\textsuperscript{74} (2) whether the theory or method was subjected to peer review and publication; (3) the known or potential rate of error for the scientific technique; and (4) whether the method or theory has acquired "general acceptance."\textsuperscript{75}

Although the Supreme Court clarified that the common law "general acceptance" standard was superseded by Rule 702, the \textit{Daubert} decision has led to confusion.\textsuperscript{76} Missing from the decision was clarity regarding the procedure that the lower courts were to follow in applying the reliability analysis under Rule 702. The Supreme Court provided only abstract, general guidance about how the lower courts should handle admissibility of scientific evidence under the Federal Rules of Evidence.\textsuperscript{77} The Court did not apply the general guidelines it outlined to the facts of the case. Instead, it chose to remand the case to the Ninth Circuit for a determination of whether the testimony was grounded on a reliable foundation and was relevant.\textsuperscript{78}

Some commentators predicted confusion regarding how federal judges would apply the general guidelines in \textit{Daubert}.\textsuperscript{79} In the dissent, Chief Justice Rehnquist, joined by Justice Stevens, characterized the Court's general observations regarding how federal judges are to screen expert testimony for relevance and reliability as "vague and abstract."\textsuperscript{80} Chief Justice Rehnquist concluded that there was "no doubt that Rule 702 confides to the judge some gatekeeping responsibility."\textsuperscript{81} This responsibility requires that federal judges must be satisfied that the scientific evidence meets a particular standard of reliability and relevance before it is admit-

\textsuperscript{74} Id. at 593-94 (citing C. Hempel, \textit{Philosophy of Natural Science} 49 (1966)). "['T]he statements constituting a scientific explanation must be capable of empirical test." Id. (citing K. \textit{POPPER}, \textit{Conjectures and Refutations: The Growth of Scientific Knowledge} 371 (5th ed. 1989)).

\textsuperscript{75} \textit{Daubert}, 509 U.S. at 593-94.

\textsuperscript{76} \textit{See Confronting the New Challenges of Scientific Evidence}, supra note 4, at 1488 (analyzing the problems left unresolved by the \textit{Daubert} Court).

\textsuperscript{77} \textit{Daubert}, 509 U.S. at 598 (Rehnquist, C. J., concurring in part and dissenting in part).

\textsuperscript{78} Id. at 597-98.


\textsuperscript{80} \textit{Daubert}, 509 U.S. at 598 (Rehnquist, C. J., concurring in part and dissenting in part).

\textsuperscript{81} Id. at 600.
However, Chief Justice Rehnquist accurately predicted that numerous questions and confusion would arise as district judges tried to apply the Court's opinion. Specifically, he questioned how active a role federal judges would be required to take in assessing scientific reliability under the "gatekeeping responsibility" asserted in Daubert.

The uncertainty surrounding the Supreme Court's decision in Daubert immediately became apparent. On remand, the United States Court of Appeals for the Ninth Circuit was required to determine whether the scientific testimony that Bendectin caused limb reduction defects rested on a reliable foundation and also whether the evidence was relevant to the issues in the case. The Ninth Circuit criticized the Supreme Court for putting federal judges, who generally are untrained in science, in the position of having to resolve disputes among "respected, well-credentialed scientists about matters squarely within their expertise, in areas where there is no scientific consensus as to what is and what is not 'good science.'"

The Ninth Circuit chose to disregard the framework established by the Supreme Court in determining the reliability of the evidence under Rule 702. Although the Supreme Court identified four factors that federal judges can apply to assess scientific evidence under Rule 702, the Ninth Circuit concluded that some of these factors would be difficult to apply to the present case. The Ninth Circuit then proceeded to craft its own criteria for assessing reliability. The Ninth Circuit asserted that there are two principle ways the proponent of expert testimony can demonstrate that evidence satisfies the first prong of Rule 702: "[1] that an expert's proffered testimony grows out of pre-litigation research or [2] that the

82. Id. at 589.
83. See Confronting the New Challenges of Scientific Evidence, supra note 4, at 1514-16 (detailing three avoidance techniques employed by some judges to avoid their gatekeeping responsibilities).
84. 43 F.3d 1311, 1313 (9th Cir. 1995).
85. Id. at 1316.
86. See Confronting the New Challenges of Scientific Evidence, supra note 4, at 1516 (providing that the Ninth Circuit's review of Daubert on remand is an example of evasive techniques judges utilize "to craft their own criteria haphazardly, disregarding the intent of the current doctrinal framework").
87. Daubert, 43 F.3d at 1317 n.4, 1318. "Two of the four factors mentioned by the Supreme Court would be difficult or impossible to apply to the expert testimony in this case." Id. "These factors raise many questions. . .Such questions only underscore the basic problem, which is that we must devise standards for acceptability where respected scientists disagree on what's acceptable." Id. at 1316-17 n.3.
expert's research has been subject to peer review." 88

Thus, rather than inquiring into the scientific principles and methodology of the testimony offered by the experts to satisfy the first prong or reliability test of Rule 702, the Ninth Circuit weighed heavily the motivation behind the research and whether the scientific evidence had been subjected to peer review. 89 According to the Ninth Circuit, if the proffered evidence failed to meet these two standards, then the proponent of expert scientific testimony may meet its burden of proof by:

point[ing] to some objective source—a learned treatise, the policy statement of a professional association, a published article in a reputable scientific journal or the like—to show that they have followed the scientific method, as it is practiced by (at least) a recognized minority of scientists in their field. 90

In Daubert, application of the reliability factors fashioned by the Ninth Circuit was fatal for the plaintiffs. The Ninth Circuit concluded that the plaintiffs' experts based their testimony on research conducted after they were hired for Bendectin litigation, and thus the evidence failed to meet the "pre-litigation" research requirement. 91 Next, the Ninth Circuit found that the expert testimony failed to satisfy the requirement that the scientists subject their research to peer review through publication. 92 Finally, the court concluded that the scientific evidence offered by the plaintiffs failed the reliability test because "they neither explain[ed] the methodology the experts followed to reach their conclusions nor point[ed] to any external source to validate that methodology." 93

The court excluded the evidence presented by Dr. Palmer, who testified "that Bendectin did cause the limb defects in each of the children." 94 Because Dr. Palmer offered no tested or testable theory regarding his method for determining that no other potential cause produced the birth defects, the court held that his testimony was "[p]ersonal

88. Id. at 1318.
89. See Mills, supra note 79, at 862 (analyzing the reasoning of the Ninth Circuit that testimony based on research undertaken independently of litigation is reliable).
90. Daubert, 43 F.3d at 1319.
91. Id. at 1317.
92. Id. at 1318.
93. Id. at 1319. The Court commented that it had been presented with the experts' qualifications, their conclusions, and their assertions that the methodology employed comported with standard scientific procedures. The Ninth Circuit, however, concluded this was insufficient under Daubert. Id.
94. Id. Dr. Palmer testified that he examined the medical records of the plaintiff's children, and that to a reasonable medical and scientific certainty, Bendectin was taken at a period of time so as to effect their development and cause their limb defects. Id.
opinion, not science.\textsuperscript{95}

In applying the second prong of Rule 702, the relevance test, the Ninth Circuit found that the plaintiff failed to show the expert scientific testimony would assist the jury on the issue of causation.\textsuperscript{96} The court looked to the substantive tort law of California, which required that the plaintiffs prove by a preponderance of the evidence that Bendectin was the cause of their injuries.\textsuperscript{97} Specifically, the plaintiffs were required to prove that among children whose mothers ingested Bendectin, the incidence of limb reduction defects more than doubled to more than two per thousand.\textsuperscript{98} The court concluded that none of the plaintiffs' experts, except Dr. Palmer whose testimony was inadmissible under the first prong of Rule 702, testified that ingestion of Bendectin during pregnancy more than doubled the risk of limb reduction defects.\textsuperscript{99} The Ninth Circuit held that the evidence was inadmissible under the second prong of Rule 702 because it did not tend to support the plaintiffs' burden of proving causation and would not be helpful to the trier of fact.\textsuperscript{100} Judge Kozinski reaffirmed the summary judgment granted by the district court.\textsuperscript{101}

II. THE EFFECTS OF \textit{DAUBERT} ON ADMISSION OF EVIDENCE

On remand, the Ninth Circuit established a precedent that if the expert's scientific evidence was not (1) created independent of litigation, (2) subjected to peer review and publication, and (3) supported by testimony that some objective source viewed the scientific methods acceptable, then the admissibility of expert testimony is unlikely.\textsuperscript{102} The effect of this precedent is unclear as members of the Ninth Circuit have not interpreted the Supreme Court's analysis of Rule 702 in \textit{Daubert} in the same manner.\textsuperscript{103}

However, if the Supreme Court had applied the framework it created

\begin{itemize}
\item \textsuperscript{95} Id.
\item \textsuperscript{96} \textit{Daubert}, 43 F.3d at 1320.
\item \textsuperscript{97} Id. at 1320.
\item \textsuperscript{98} Id. at 1320-21.
\item \textsuperscript{99} Id. at 1321.
\item \textsuperscript{100} Id. at 1322, 1320.
\item \textsuperscript{101} \textit{Daubert}, 43 F.3d at 1322; see also \textit{Mills}, supra note 79, at 866-77 (criticizing the Ninth Circuit's faulty application of Rule 702).
\item \textsuperscript{102} \textit{Daubert}, 43 F.3d at 1318.
\item \textsuperscript{103} See \textit{Mills}, supra note 79, at 878-79 & n.205 (citing Hopkins v. Dow Corning Corp., 33 F.3d 1116, 1124-25 (9th Cir. 1994) (admitting testimony that silicone breast implants caused tissue disease under the \textit{Daubert} standard; epidemiological studies, animal studies, medical records and expert's experience as toxicologist were admitted)); United States v. Chischilly, 30 F.3d 1144, 1152 (9th Cir. 1994) (admitting DNA evidence under \textit{Daubert} and
to the facts of *Daubert*, instead of remanding to a lower court, it is likely that there would be less confusion regarding the actual intent of the Court and the application of the reliability standard. According to the Court's decision, it is likely that there would be less confusion regarding the actual intent of the Court and the application of the reliability standard.

The Court sketched a very broad framework, making it more difficult for trial court judges to understand how to apply the reliability test.

**A. The Effect of *Daubert* in the Federal Courts**

An informal analysis of lower court opinions that cite to *Daubert* through May 18, 1994, indicates that trial judges actively are assuming their roles as "gatekeepers" by more carefully scrutinizing scientific evidence. This analysis indicates that prior to *Daubert*, scientific testimony by qualified experts in civil cases other than toxic tort litigation rarely was excluded. Since *Daubert*, the trend appears to be for courts to scrutinize more carefully and exclude evidence that may not have been questioned in the past. For example, courts at the federal level are more likely to utilize the "gatekeeper analysis" before admitting scientific testimony in accident and product liability cases.

asserting that the *Daubert* test is flexible and focuses on principles and methodology underlying the evidence rather than on the conclusion generated.

104. See *Daubert*, 509 U.S. at 598 (Rehnquist, C.J., with whom Justice Stevens joins, concurring in part and dissenting in part) Chief Justice Rehnquist criticizes the holding of the majority:

"General observations" by this Court customarily carry great weight with lower federal courts, but the ones offered here suffer from the flaw common to most such observations—they are not applied to deciding whether particular testimony was or was not admissible, and therefore they tend to be not only general, but vague and abstract. This is particularly unfortunate in a case such as this, where the ultimate legal question depends on appreciation of one or more bodies of knowledge not judicially noticeable, and subject to different interpretations in the briefs of the parties and their amici.

105. *Id.*

106. Bernstein, supra note 79, at 3. See Linda Himelstein, *Putting Science on Trial*, BUS. WEEK, Aug. 14, 1995, at 77 (referring to Mr. Bernstein’s unpublished article studying the impact of the Court’s ruling and his conclusions that scientific evidence has been barred in over two dozen cases since the ruling). Mr. Bernstein, a professor at the George Mason University School of Law, is the author of several articles regarding the admissibility of scientific evidence. *Id.* For a sampling of Mr. Bernstein’s articles, consult *The Admissibility of Scientific Evidence after Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 15 CARDOZO L. REV. 2139 (1994); David E. Bernstein & Peter W. Huber, *Daubert Plaintiffs Won Technical Battle But Plainly Lost the War*, 21 Prod. Safety & Liab. Rep. (BNA) 16 (Summer-Fall 1993).

107. See Bernstein, supra note 79, at 3.

108. *Id.* at 6.

The effect of the *Daubert* ruling also is apparent in criminal cases. Courts have admitted evidence based on generally accepted forensic techniques\(^\text{110}\) such as photogrammetry and cocaine identification.\(^\text{111}\) In contrast, testimony based on polygraph evidence\(^\text{112}\) and voice identification analysis\(^\text{113}\) both were held inadmissible. The lower courts have also begun to apply the *Daubert* "gatekeeper analysis" to technical evidence covered by Rule 702 that is not strictly scientific. In criminal cases, courts have applied the *Daubert* analysis to evaluate expert testimony in cases involving the possibility of arson,\(^\text{114}\) money laundering,\(^\text{115}\) the structure of organized crime families,\(^\text{116}\) and illegal drug marketing.\(^\text{117}\)

In addition, cases involving testimony by psychological experts were affected by *Daubert*.\(^\text{118}\) Since *Daubert*, the trend appears to be towards greater exclusion of psychiatric and psychological testimony related to child abuse and post-traumatic stress disorder.\(^\text{119}\) Through the first part

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12. Bernstein, *supra* note 79, at 8 (citing United States v. Black, 831 F. Supp. 120, 122-23 (E.D.N.Y. 1993) (holding that application of the *Daubert* analysis did not affect the precedent that results of polygraph tests are not sufficiently reliable to be admissible)).


14. *Id.* at 10 (citing United States v. Markum, 4 F.3d 891 (10th Cir. 1993) (admitting expert testimony)).

15. *Id.* at 8 (citing United States v. Daccarett, 6 F.3d 37 (2d Cir. 1993) (admitting expert testimony)).

16. *Id.* (citing United States v. Locascio, 6 F.3d 924 (2d Cir. 1993) (admitting testimony of expert)).

17. *Id.* (citing United States v. Sepulveda, 15 F.3d 1161 (1st Cir. 1993) (admitting testimony to assess validity of methods used)).


19. *Id.* (citing Gier v. Educational Serv. Unit No 16, 66 F.3d 940 (8th Cir. 1995);
of 1994, three courts excluded psychological and psychiatric evidence, while only one court admitted testimony that related to the expert’s clinical experience with the patient and the prognosis for recovery.\textsuperscript{120}

Initially, the effect of \textit{Daubert} appeared to be a heightened sensitivity to the court’s role in monitoring the reliability and relevancy of expert testimony. Many judges assumed an active role as the evidentiary “gatekeeper” by carefully scrutinizing and weighing expert testimony.\textsuperscript{121}

More recent circuit court decisions, however, reflect an underlying tension as to exactly how and when the \textit{Daubert} analysis will lead to the inadmissibility of expert testimony. In March 1996, the United States Court of Appeals for the Third Circuit reversed the district court’s exclusion of the plaintiff’s experts in \textit{Holbrook v. Lykes Brothers Steamship Co.},\textsuperscript{122} an asbestos exposure action. In \textit{Holbrook}, a split three-judge Third Circuit panel ruled that the testimony of a medical expert cannot be excluded solely because the expert did not have the specialization the court considered most appropriate.\textsuperscript{123} The court stated that it is an abuse of discretion to exclude testimony simply because the trial court does not deem the proposed expert to be the best qualified or because the proposed expert does not have the specialization that the court considers most appropriate.\textsuperscript{124}

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\textsuperscript{120} Id. (citing Doe v. Tag, Inc., 1993 WL 484212 (N.D. Ill. 1993) (excluding testimony related to child abuse accommodation syndrome)).

\textsuperscript{121} Id. at 13. Bernstein concludes that there can no longer be doubt regarding the effect of \textit{Daubert}: It is clear that \textit{Daubert} has ushered in a new era of judicial scrutiny of scientific testimony and, more broadly, of expert evidence in general. . . . Since \textit{Daubert}, courts can no longer avoid the difficult business of carefully scrutinizing expert testimony by reciting the conclusory fact that juries are ultimate triers of fact.

\textsuperscript{122} 80 F.3d 777, 788-89 (3d Cir. 1996).

\textsuperscript{123} Id. at 780, 782. In \textit{Holbrook}, the plaintiff alleged that he had contracted mesothelioma from exposure to asbestos. \textit{Id.} at 777. The United States District Court for the Eastern District of Pennsylvania excluded the testimony of the plaintiff’s treating physician with regard to the diagnosis or interpretation of the pathology report because the doctor was not an oncologist or an expert in cancer diagnosis. \textit{Id.} at 781. The United States Court of Appeals for the Third Circuit stated that:

It would be inconsistent with and run counter to the Rules’ liberal policy of admissibility to allow an outside expert, hired solely for litigation purposes, to rely on and testify about a pathology report, but exclude testimony by the treating physician who ordered the report and relied on it for life-and-death decisions about the patient’s treatment.

\textit{Id.} at 782.

\textsuperscript{124} Id.
Similarly, in Joiner v. General Electric Co., the United States Court of Appeals for the Eleventh Circuit reversed the trial court's exclusion of expert testimony in a suit claiming that exposure to polychlorinated biphenyls ("PCBs") and their derivatives promoted the plaintiff's cancerous condition. The Eleventh Circuit ruled that the experts utilized scientifically reliable methods and procedures. The court also found that the trial court's rejection of animal studies as unreliable was erroneous. The court stated that opinions are derived from individual pieces of evidence, each of which by itself might not be conclusive but when viewed in their entirety are the building blocks of a perfectly reasonable conclusion, one reliable enough to be submitted to a jury along with the test and criticisms cross-examination and contrary evidence would supply. The dissent, however, argued that the reliability criteria of Daubert had not been met.

In Rosen v. Ciba-Geigy Corp., however, the United States Court of Appeals for the Seventh Circuit ruled that the plaintiff's expert testimony on causation was inadmissible and failed the Daubert reliability test because the cardiologist's opinion did not possess "scientific rigor." The court held that scientific evidence sought to be admitted must be "genuinely scientific, as distinct from being unscientific speculation offered by a genuine scientist." Similarly, in Rutigliano v. Valley Business Forms, the United States District Court for New Jersey rejected the testimony of a causation expert in a formaldehyde exposure action because the ex-

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125. 78 F.2d 524 (11th Cir. 1996).
126. Id. at 528, 534.
127. Id. at 533-34. Two experts conducted a comprehensive occupational medical assessment and considered the testing and evaluation of toxic substances for carcinogenic risk in humans. Id. at 531. The doctors utilized numerous studies and authorities. Id. The experts discussed the studies of 13 researchers and utilized several World Health Organization reports addressing whether PCBs cause cancer. Id. at 533.
128. Id. at 532.
129. Id.
130. Id. at 533-40.
131. 78 F.2d 316 (7th Cir. 1996). The Seventh Circuit held that the district court did not abuse its discretion in determining that the deposition of the physician serving as an expert witness for a smoker, who suffered a heart attack three days after he began using a nicotine patch, and who subsequently sued the manufacturer of the patch, was not valid scientific evidence admissible under Daubert. Id. at 319-20.
132. Id. at 319.
133. Id. at 318.
pert's theory of causation was not testable and failed the reliability prong of Rule 702.\textsuperscript{135} The differences between the circuits indicate an underlying tension concerning the standard of admissibility of evidence articulated by the Court in \textit{Daubert}. It is only through additional application of the "gatekeeping" function and correction by the Supreme Court that clarification of the reliability standard will be determined.

\textbf{B. The Effect of Daubert at the State Level}

\textit{Daubert} has not had the same effect at the state level. Many states continue to follow the \textit{Frye} rule or some version of it.\textsuperscript{136} Courts in Montana, West Virginia, Louisiana, New Mexico, Wyoming, and Iowa adopted the \textit{Daubert} standard of admissibility of scientific evidence.\textsuperscript{137} Some states have rejected the \textit{Daubert} test. For example, New York, Washington, Florida, and Arizona are following the more stringent "general acceptance by the scientific community" test.\textsuperscript{138} The lower state courts in Alaska, California, Illinois, Maryland, Minnesota, and Missouri are following \textit{Frye} until their state supreme courts decide which standard to apply for the admissibility of expert testimony.\textsuperscript{139} Because many states adopt evidence codes similar to the federal rules, the reliability and rele-

\textsuperscript{135} Id.
\textsuperscript{136} Bernstein, supra note 79, at 11. New York, Washington, Florida, and Arizona adopted the \textit{Frye} standard. Id.
\textsuperscript{137} Id.
\textsuperscript{138} Id. (citing People v. Wesley, 1994 WL 99513 (N.Y. 1994); State v. Riker, 869 P.2d 43 (Wash. 1994); see also State v. Jones, 863 P.2d 85 (Wash. App. 1993); cf. State v. Cissne, 865 P.2d 564 (Wash. App. 1994) (announcing intention to apply \textit{Frye} until state supreme court addressed the issue); Flanagan v. State, 625 So. 2d 827 (Fla. 1993); see also Bass v. Florida Dept. of Law Enforcement, 627 So. 2d. 1321 (1993); Eldridge v. Riddell, Inc., 626 So. 2d 232 (Fla. App. 1993) (concurring opinion); State v. Bible, 858 P.2d 1152 (Ariz. 1993)).

Three state courts, North Dakota, New Hampshire, and Delaware are applying the state codes of evidence to determine whether to admit scientific evidence even though the state supreme courts of these states have recognized the standard articulated by the Supreme Court in \textit{Daubert}. Id. These states had rejected the \textit{Frye} test before the \textit{Daubert} decision. Id.
vancy criteria of *Daubert* can influence the state courts.\textsuperscript{140}

III. Is Congressional Revision of Federal Rule of Evidence 702 a Solution?

A. The "Common Sense Legal Reforms Act"

On January 4, 1995, Congressman Henry J. Hyde, a Republican Representative from Illinois, introduced the Common Sense Legal Reforms Act of 1995 in the 104th Congress.\textsuperscript{141} The goal of this legislation was to reform the federal civil justice system.\textsuperscript{142} Section 102 of H.R. 10, entitled "Honesty in Evidence," was a proposal to amend Federal Rule of Evidence 702 and an attempt to codify the Supreme Court's decision in *Daubert*.\textsuperscript{143} Section 102 would amend Rule 702 by adding the following new subsections:

- (b) Adequate basis for opinion. Testimony in the form of an opinion by a witness that is based on scientific knowledge shall be inadmissible in evidence unless the court determines that such opinion is
  - (1) based on scientifically valid reasoning; and
  - (2) sufficiently reliable so that the probative value of such evidence outweighs the dangers specified in rule 403.
- (c) Disqualification. Testimony by a witness who is qualified as described in subsection (a) is inadmissible in evidence if such witness is entitled to receive any compensation contingent on the legal disposition of any claim with respect to which such tes-

\textsuperscript{140} See *Hearings*, supra note 2, at 146.
\textsuperscript{142} *Id.* at 2.
\textsuperscript{143} *Hearings*, supra note 2, at 150. Section 102 of H.R. 10 has been described informally as an incorporation or codification of *Daubert*. However, careful analysis of Section 102 reveals that the proposed changes extend the intent of *Daubert*. For example, Franklin M. Zweig, President of the Einstein Institute for Science, Health & the Courts, remarks: [A] dispassionate assessment must observe that it goes way beyond the structuring of standards for assuring the reliability of scientific evidence and testimony in conduct of a judge's duty to screen the evidence. Section 102(b) is an entirely different species of evidence law than the one currently applied by the federal judiciary in the management of federal trials according to FRE 702, and its other provisions. Current law assumes the admissibility of evidence, conditioned by relevance proofs, exceptions, balancing tests, and other safeguards. Section 102(b) assumes the opposite. Section 102 turns off the scientific evidence faucet by introducing into the federal rules an initial, a priori, rebuttable presumption of scientific evidence's inadmissibility.

*Id.*
The purpose of H.R. 10 was to provide "steps to restore efficiency, accountability and fairness to our federal civil justice system." However, the goal of restoring efficiency to the civil justice system is not new. In 1992, a subcommittee of President Bush's Competitiveness Committee recommended revision of Rule 702 to incorporate a screening of the reliability of expert testimony by federal judges. One of the purposes of this proposal was to reduce the number of tort judgments against manufacturers, thereby increasing the competitiveness of American companies.

Similarly, Congressman Jim Ramstad claimed in his address to the House Judiciary Subcommittee, that the goal of the Common Sense Legal Reforms Act of 1995 was to curb abuses in the legal system which hurt the international competitiveness of United States businesses. For example, Representative Ramstad stated that tort costs have grown almost four times faster than the United States economy during the period of 1933 to 1991.

The text of proposed 702 also became part of H.R. 988, which was entitled, "A Bill to Reform the Federal Civil Justice System." H.R. 988 was introduced by Congressman Carlos J. Moorhead of California and referred to the Committee on the Judiciary. Section 3 of H.R. 988 entitled "Honesty in Evidence" is similar to the text of H.R. 702 except for the addition of section (d), which adds that the proposed changes do not apply to criminal proceedings.

145. Hearings, supra note 2, at 19.
147. Id. at 1861-62.
148. Hearings, supra note 2, at 19.
149. Id. "A 1991 study by Tillinghast, a prominent actuarial consulting firm, estimated the direct cost of the tort system at $132 billion in 1991." Id. Other studies indicate that the United States spends about $300 billion if indirect costs, such as federal and state court costs and value of time lost, is included. The Tillinghast study also estimated that U.S. tort cases rose by a factor of almost 400, between 1933 and 1991. Approximately 20 million civil lawsuits were filed in both state and federal courts in 1992. Id.
151. Id.
152. Id. at 3-4. Section 3 of H.R. 988 states:
Rule 702 of the Federal Rules of Evidence (28 U.S.C. App.) is amended — (1) by inserting "(a) IN GENERAL," before "IF", and
On January 21, 1997, S. 79 entitled, "Civil Justice Fairness Act of 1997," was introduced into the 105th Congress.\textsuperscript{153} Section 302, "Honesty in Evidence," parallels the legislation which was introduced in the 104th Congress but failed to become law.\textsuperscript{154} There are two distinguishing factors in

(2) by adding at the end the following:

"(b) Adequate Basis for Opinion. Testimony in the form of an opinion by a witness that is based on scientific knowledge shall be inadmissible in evidence unless the court determines that such opinion—[""

"(1) is scientifically valid and reliable;[""

"(2) has a valid scientific connection to the fact it is offered to prove; and[""

"(3) is sufficiently reliable so that the probative value of such evidence outweighs the dangers specified in rule 403.["]"

"(c) Disqualification. Testimony by a witness who is qualified as described in subdivision (a) is inadmissible in evidence if the witness is entitled to receive any compensation contingent on the legal disposition of any claim with respect to which the testimony is offered.["]"

"(d) Scope. Subdivision (b) does not apply to criminal proceedings.["].

\textit{Id.} at 3-4.


154. \textit{Id.} The pertinent parts of Section 302(B) of S. 79 state:

(B) Adequate Basis for Opinion

(1) Testimony in the form of an opinion by a witness that is based on scientific, technical or medical knowledge shall be inadmissible in evidence unless the court determines that such opinion

(A) is based on scientifically valid reasoning;

(B) is sufficiently reliable so that the probative value of such evidence outweighs the dangers specified in Rule 403;

and

(C) the techniques, methods, and theories used to formulate that opinion are generally accepted within the relevant scientific, medical or technical field.

(2) In determining whether an opinion satisfies conditions in paragraphs (1), the Court shall consider

(A) whether the opinion and any theory on which it is based have been, experimentally tested;

(B) whether the opinion has been published in peer-review literature;

and

(C) whether the theory or techniques supporting the opinion are sufficiently reliable and valid to warrant their use as support for the proffered opinion.

(C) Expertise in the field. Testimony in the form of an opinion by a witness that is based on scientific, technical, or medical knowledge shall be inadmissible in evidence unless the witness's knowledge, skill, experience, training, education, or other expertise lies in the particular field about which such witness is testifying.

(D) Disqualification. Testimony by a witness who is qualified as described in subsection (A) is inadmissible in evidence if such witness is entitled to receive any compensation contingent on the legal disposition of any claim with respect to which such testimony is offered.

\textit{Id.}
the new Senate version of the bill. First, S. 79 is written broadly to apply to “scientific, technical or medical knowledge” rather than opinion testimony based only on scientific knowledge.\textsuperscript{155} Second, S. 79 includes a provision that requires the court to consider “whether the opinion has been published in peer-review literature.”\textsuperscript{156}

B. The Position of the Judicial Conference Advisory Committee on Evidence Rules

In 1934, Congress adopted the Rules Enabling Act\textsuperscript{157} which clarified the appropriate roles of the courts and Congress in revising rules of evidence and civil procedure.\textsuperscript{158} The Rules Enabling Act provided that the Supreme Court shall have the power to promulgate rules governing the district courts and the courts of appeals.\textsuperscript{159} Rules creating, abolishing, or modifying a federal rule of evidence are to be approved by an act of Congress.\textsuperscript{160} This procedure ensures that proposed revisions and changes are subject to public comment and widespread examination by judges, practicing lawyers, and law professors.\textsuperscript{161}

In 1993, Chief Justice Rehnquist appointed members to serve on the Judicial Conference Advisory Committee on Evidence Rules with the purpose of reviewing the Federal Rules of Evidence.\textsuperscript{162} Public meetings

\textsuperscript{155} Id. § 302(B)(1).
\textsuperscript{156} Id. § 302(B)(2)(B).
\textsuperscript{159} 28 U.S.C. § 2072(b) and Commentary on 1988 and 1990 Revisions.
\textsuperscript{160} Id. § 2074. Section 2074 prescribes the final step in the rulemaking process: (a) The Supreme Court shall transmit to the Congress not later than May 1 of the year in which a rule prescribed under section 2072 is to become effective a copy of the proposed rule. Such rule shall take effect no earlier than December 1 of the year in which such rule is so transmitted . . . (b) Any such rule creating, abolishing, or modifying an evidentiary privilege shall have no force or effect unless approved by Act of Congress.
\textit{Id.}

\textsuperscript{162} Letter, supra note 161.
were conducted on May 9-10, 1994 and October 17-18, 1994 to discuss the Federal Rules of Evidence regarding expert testimony. The Committee concluded that adoption of the proposed amendment to Rule 702 contained in H.R. 10 [proposed Rule 702] would be "counterproductive." \textsuperscript{164}

The rationale for opposing the adoption of proposed Rule 702 centered on the view that there had not been sufficient time to assess the effect of the decision of the Supreme Court in \textit{Daubert}.\textsuperscript{165} The Committee believed that a valid assessment could only be made after more experience had been acquired applying the \textit{Daubert} criteria. In addition, the Committee asserted that it would be unnecessary to attempt to codify \textit{Daubert} when it is already "the law of the land."\textsuperscript{166}

Additionally, there was great concern by the Judicial Conference Committee on the Rules of Evidence that proposed Rule 702 did not accurately codify \textit{Daubert}. Proposed Rule 702 drew a distinction between the "validity" and the "reliability" of scientific evidence.\textsuperscript{167} Under proposed Rule 702, the judge is first required to make a determination of whether the opinion is valid.\textsuperscript{168} This distinction between validity and reliability was not made by the Supreme Court in \textit{Daubert} and is likely to cause additional confusion regarding the requirements of Rule 702.\textsuperscript{169}

\textsuperscript{163. Id. 164. Id. 165. Id. Judge Winter served as the Chairman of the Advisory Committee on Evidence Rules of the Judicial Conference of the United States. His February 7, 1995 letter to Congressman Hyde stated:

The committee unanimously concluded that amendment of Rule 702 would be counterproductive at this time in light of the recent decision of the Supreme Court in \textit{Daubert v. Merrell Dow Pharmaceuticals, Inc.} (1993). It is yet too early to determine whether \textit{Daubert} curbs abuses in the use of expert testimony. A valid assessment of its effects can only be made after courts acquire more experience with it. The committee will continue to study the operation and effect of the rule as construed under \textit{Daubert} by the courts.

\textit{Id.}

\textsuperscript{166. Letter, supra note 161. Judge Winter emphasized that: "\textit{Daubert} is now the law of the land. Restating the Court's opinion, even if drafted accurately, is unnecessary. But Rule 702(b) as proposed in H.R. 10 does not accurately codify \textit{Daubert}. And if enacted would cause mischief." \textit{Id.}}

\textsuperscript{167. Id.}

\textsuperscript{168. Id. at 1-2.}

\textsuperscript{169. Id. In the letter to the House Judiciary Committee, Judge Winter, Chairman of the Advisory Committee on Evidence Rules, stated that:

This new requirement imposes an ill-defined burden on the courts. Indeed, it is difficult to see how scientific evidence can be "reliable" and yet not be "valid."

The uncertainties created by the requirements could cause significant problems,
Proposed Rule 702 also would restrict the scope of the rule to an opinion by a witness that is based on "scientific knowledge."\textsuperscript{170} And does not encompass a broader field of specialized knowledge. However, Rule 702 is not limited to scientific knowledge but also encompasses "scientific, technical, or other specialized knowledge."\textsuperscript{171} In fact, lower courts have applied the \textit{Daubert} "gatekeeping" interpretation of Rule 702 to a broad range of specialized knowledge such as economics, statistics, and accounting.\textsuperscript{172}

The proposed Rule 702 would also reverse the underlying intent of the Federal Rules of Evidence.\textsuperscript{173} Specifically, the language in proposed Rule 702 reverses the intent of Federal Rule of Evidence 403, which the Supreme Court in \textit{Daubert} applied to Rule 702 evidence.\textsuperscript{174} In \textit{Daubert}, the Court cautioned that in assessing expert scientific testimony under Rule 702, the judge also must consider Rule 403.\textsuperscript{175} This rule excludes relevant evidence "if its probative value is substantially outweighed by particularly for prosecutors who often rely heavily on "scientific evidence" in establishing the guilt of defendants.

\textit{Id. at 2.}
\textsuperscript{170} \textit{Id. at 2.}
\textsuperscript{171} \textit{FED. R. EVID. 702.}
\textsuperscript{172} Bernstein, \textit{supra} note 79, at 10.
\textsuperscript{173} \textit{Hearings II, supra} note 158, at 164 (statement of Anthony Z. Roisman, Counsel, Cohen, Milstein, Hausfeld & Toll). Roisman strongly argued against adoption to Section 102 of H.R. 10:

\textit{[P]roposed Section 102 runs contrary to basic principles which are vitally important to our civil justice system and to the goals of the American public. First, it centralizes power in the federal bureaucracy by shifting the focus of decision from the public, functioning as jurors, to a handful of government officials appointed for life. Second, it reverses the underlying premise of the Federal Rules of Evidence that, absent some strong evidence to the contrary, all relevant evidence should be heard by the jury who will make the final decision in the case. Third, it adds confusion to the federal courts thereby increasing the work of federal judges and slowing down the process of resolving disputes. Finally, there is no scientifically reliable evidence to support the changes proposed in Section 102. If, the Congress is to be properly concerned that decisions in individual cases in federal courts should be based upon reliable scientific evidence, then Congress should itself insist that reliable scientific evidence support any major changes in the civil justice system, particularly where the effect of those changes is to narrow the constitutionally protected right to trial by jury.

\textit{Id. at 6-7.}
\textsuperscript{174} Letter, \textit{supra} note 161, at 2. "The proposed Rule 702(b) would also reverse the present Evidence Rule 403 balancing test, which \textit{Daubert} expressly applies to Rule 702 testimony." \textit{Id.}
\textsuperscript{175} \textit{Daubert}, 509 U.S. at 595. "Throughout, a judge assessing a proffer of expert scientific testimony under Rule 702 should also be mindful of other applicable rules . . . . Rule 403 permits the exclusion of relevant evidence 'if its probative value is substantially out-
the danger of unfair prejudice, confusion of the issues or misleading the jury."\textsuperscript{176} Proposed Rule 702 reverses the balancing test in Rule 403, however, by requiring that the opinion be "sufficiently reliable so that the probative value of such evidence outweighs the dangers specified in Rule 403."\textsuperscript{177}

In addition, the proposed Rule 702 reverses the balancing test for only scientific evidence.\textsuperscript{178} Under the proposed change to Rule 702, other types of technical or specialized expert testimony would continue to be evaluated under Rule 403.\textsuperscript{179} There appears to be no rationale for applying different balancing tests.\textsuperscript{180}

Section 102 of H.R. 10 also would add a new Evidence Rule 702(c) which excludes testimony from an expert who is "entitled to receive any compensation contingent on the legal disposition of any claim with respect to which such testimony is offered."\textsuperscript{181} This provision is redundant, as contingent fee expert testimony is already barred in most jurisdictions by the American Bar Association Model Code of Professional Responsibility.\textsuperscript{182} It is also unclear what the effect of proposed Rule 702(c) would be with respect to \textit{pro bono} cases that are regulated by more than 2,000 fee-shifting statutes, and that, in some instances, provide for expert witness fees.\textsuperscript{183}

Another commentator claims that the rule changes proposed in H.R. 10 demonstrate the problems of "political interference in the rulemaking process and the ineptness of the result that political rulemaking can produce."\textsuperscript{184} If Congress believes that codification of \textit{Daubert} is important, then Congress can recommend that the Judicial Conference give this immediate attention. An appropriate procedure for formulation and adopt-

\textsuperscript{176} Letter, supra note 161, at 2 (quoting H.R. 10).
\textsuperscript{177} Id.
\textsuperscript{178} Id.
\textsuperscript{179} Id.
\textsuperscript{180} Id.
\textsuperscript{182} Hearings II, supra note 158, at 190 (citing ABA Model Code of Professional Responsibility DR 7-109(c) and Model Rules of Professional Conduct Rule 3.4(b). In those courts where this practice is permitted, cross-examination is also permitted. (citing United States v. Abel, 469 U.S. 45 (1984) (bias impeachment permitted under Federal Rules of Evidence)). Id. See Letter, supra note 161, at 2 (expressing uncertainty regarding the effects of Rule 702 on the regulation of contingent fee expert testimony).
\textsuperscript{183} Hearings II, supra note 158, at 190.
\textsuperscript{184} Id. The American Bar Association supports delegating rulemaking authority to the Judicial Conference. Id.
tion of rules of evidence was created by Congress.\textsuperscript{185} Under the Rules Enabling Act, the United States Judicial Conference drafts the rules, which are then exposed to thorough public comment and consideration.\textsuperscript{186} These rules are then submitted to the United States Supreme Court for consideration and promulgation.\textsuperscript{187} Finally, rule changes are submitted to Congress for veto before any rule takes effect.\textsuperscript{188} This time-proven process should be followed for changes to Rule 702.

IV. Conclusion

Clearly there is much controversy and confusion regarding what is, and what should be, the standard for the admissibility of expert evidence and how that standard should be applied under Federal Rule of Evidence 702. Consequently, it is not surprising that many solutions for change will be proposed.

However, it is too soon to amend Rule 702 as proposed in Section 103 of H.R. 10. The warning of Chief Justice Rehnquist that “the unusual subject matter should cause us to proceed with great caution” in deciding how Rule 702 should be applied,\textsuperscript{189} must be heeded. Questions will continue to arise as district court judges attempt to apply \textit{Daubert} to determine the admissibility of scientific testimony. Further developments in the application of Rule 702 are best left for judicial decisions in future cases challenging the admissibility of expert testimony. Although the Federal Rules of Evidence technically do not apply to state courts, which currently manage more than ninety-five percent of the cases filed in the


Furthermore, this procedure preserves the doctrine of separation of powers:

Rules of evidence and procedure are inherently a matter of intimate concern to the judiciary, which must apply them on a daily basis;

Each rule forms just one part of a complicated, interlocking whole, rendering due deliberation and public comment essential, otherwise the impact of any rule may be quite different in quality or force than that which was intended; and

The Judicial Conference is in a unique position to draft rules with care in a setting isolated from pressures that may interfere with painstaking consideration and due deliberation.


\textsuperscript{186} \textit{Hearings II, supra} note 158, at 189.

\textsuperscript{187} \textit{Id.}

\textsuperscript{188} \textit{Id.} at 190.

\textsuperscript{189} \textit{Daubert}, 509 U.S. at 599 (Rehnquist, C. J., concurring in part and dissenting in part).
United States, development of a federal model for the admissibility of expert testimony will influence rules adopted at the state level. Thus, a change in Rule 702 is likely to have a great impact.

For these reasons, the proposed Congressional amendments to Rule 702 should not be adopted. The rulemaking process established under the Rules Enabling Act should be followed for revision of evidence rules governing the admission of expert testimony in civil and criminal cases.

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190. *Hearings, supra* note 2, at 146.