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Keeping Junk Science Out Of Asbestos Litigation

David E. Bernstein*

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In 1997, the U.S. Supreme Court stated that this country is in the midst of an "asbestos litigation crisis."¹ Claims continue to pour in at an extraordinary rate, scores of employers have been forced into bankruptcy, and payments to sick individuals known to have contracted asbestos-related disease are threatened.

Much of the controversy in the media and in political circles regarding the asbestos litigation crisis involves the issue of whether 'healthy' or 'unimpaired' plaintiffs who have been diagnosed as having an asbestos-related abnormality should be compensated, or whether compensation

* Professor, George Mason University School of Law. The Law and Economics Center at George Mason University and the Coalition for Litigation Justice, Inc. provided financial support for this article.

1. *Amchem Prods., Inc. v. Windsor*, 521 U.S. 591, 597 (1997); see also Lawrence Martin, *Runaway Asbestos Litigation - Why it's a Medical Problem*, at <http://www.mtsinai.org/pulmonary/Asbestos/AsbestosEditorial.html>.

should be reserved for claimants who are 'ill' or 'impaired.' This debate neglects another important issue: the frequent reliance by plaintiffs on unreliable 'junk science' medical expert testimony.

There are two primary contexts in which junk science arises in the asbestos litigation. The first is misdiagnosis of unimpaired patients as having an asbestos-related lung or chest abnormality. This occurs when an 'expert' claims to find a lung or chest abnormality and states that this abnormality is a manifestation of asbestosis, and the expert is wrong on one or both counts. The need for care in diagnosing asbestosis-related abnormalities is evident.² As one recent article has noted, "incipient or marginal asbestosis as picked up on an X-ray bears at least a superficial resemblance to more than 130 other lung inflammations." Given courts' leniency in accepting unreliable diagnoses, asbestos defendants are likely compensating individuals for "every occupational disease known to man."

The second important context in which 'junk science' arises in the asbestos litigation is when an impaired plaintiff claims an injury that might be, but is not necessarily, related to asbestos exposure. Asbestos exposure can clearly cause lung cancer, and some scientists believe that other cancers, such as colon cancer, can also be caused by asbestos exposure. However, most instances of lung cancer have nothing to do with asbestos exposure, and even taking a generous view of the evidence, the vast majority of colon cancers and other cancers purported to be linked to asbestos have nothing to do with asbestos exposure.³ Even mesothelioma, which is considered a 'signature disease' closely related to asbestos exposure, can be caused by other factors.⁴ There is little evidence that brief, minimal exposure to asbestos fibers causes disease. Yet impaired plaintiffs with diseases that can be caused by lengthy and significant exposure to asbestos may proffer an expert who presents claims that the plaintiff's disease was likely caused by fleeting exposure to asbestos.⁵

I. THE PROBLEM OF MISDIAGNOSIS

Misdiagnosis of purported lung abnormalities often occurs when plaintiffs' law firms seeking clients transport physicians they have hired to workplaces and union halls, where the physicians test workers for asbestos

2. See, e.g., Roger Parloff, *The \$200 Billion Miscarriage of Justice: Asbestos Lawyers are Pitting Plaintiffs Who Aren't Sick Against Companies that Never Made the Stuff and Extracting Billions for Themselves*, FORTUNE, Mar. 4, 2002, at 154.

3. Indeed, there do not appear to be any scientifically sound studies suggesting that exposure to asbestos creates a relative risk for colon cancer of more than 2.0, i.e., more than doubles the risk of colon cancer. A relative risk of more than 2.0 is required for the admissibility of epidemiologic evidence of specific causation in many jurisdictions.

4. See Lester Brickman, *The Asbestos Litigation Crisis: Is There a Need For an Administrative Alternative?*, 13 CARDOZO L. REV. 1819, 1843 (1992).

5. For example, during this symposium Professor Priest gave an example of a case involving a baby having been exposed for a few minutes to asbestos in a church building. Forty years later, the now-grown 'victim' claims that this exposure caused his cancer, rather than genetics, random bad luck, or other more plausible factors.

exposure.⁶ The attorneys, often working with labor unions and other organizations, offer free X-rays to the workers in exchange for the workers signing an agreement saying that the attorneys will get forty percent of the recovery if they turn out to have a lung abnormality related to asbestos.⁷ The X-rays are interpreted by physicians qualified to do so by passing an examination administered by physicians certified by National Institute of Occupational Safety and Health (NIOSH). They are known as ‘B-readers’ because they pass Part B of a test on X-ray interpretation.⁸

The point for present purposes is that the doctors involved are by no means neutral, detached experts, but instead are hired guns looking to gain clients for their employers by finding an asbestos-related abnormality on an X-ray. Even when plaintiffs’ attorneys do not arrange mass screenings, they hire their own physicians to examine potential claimants. Whether physicians hired by plaintiffs engage in mass or individual screenings, they typically report incredibly high levels of asbestos-related abnormalities in the workers they examine. This is because, as one expert on the litigation points out, “the chest x-rays are not read blindly, but always with knowledge of some asbestos exposure and that the lawyer wants to file litigation on the worker’s behalf.”⁹ Moreover, “when you are paid to read chest x-rays as abnormal, subjectivity will naturally favor excessive diagnosis.”¹⁰

Studies by neutral experts confirm the unreliability of diagnoses made by physicians engaged in mass screening and by other physicians hired by plaintiffs’ lawyers. In one study of 439 tire workers diagnosed as having an abnormal chest X-ray due to inhaled asbestos, an independent panel of three radiologists could confirm that diagnosis in less than four percent of the cases.¹¹

Federal District Judge Carl Rubin of the Southern District of Ohio studied the merits of asbestos claims by appointing medical experts to evaluate claimants in sixty-five asbestos bodily injury cases.¹² Although all

6. Pamela Sherrid, *Looking for Some Million Dollar Lungs*, U.S. NEWS & WORLD REP., Dec. 17, 2001, at 36. (“To unearth new clients for lawyers, screening firms advertise in towns with many aging industrial workers or park X-ray vans near union halls. To get a free X-ray, workers must often sign forms giving law firms 40 percent of any recovery. One solicitation reads: ‘Find out if YOU have MILLION DOLLAR LUNGS!’”).

7. See Lawrence Martin, *Runaway Asbestos Litigation—Why it’s a Medical Problem*, at <http://www.mtsinai.org/pulmonary/Asbestos/AsbestosEditorial.html> (“The vast majority of current claimants are current or retired factory, railroad and shipyard workers, solicited through union rolls or newspaper ads. Told asbestos was in their plant or workplace years ago, they are offered a free screening chest x-ray.”). The practice of recruiting clients and signing them up in exchange for free medical care obviously raises ethical issues for the doctors and attorneys involved, but those issues are beyond the scope of this paper.

8. *Id.*

9. *Id.*

10. *Id.*

11. *Id.* (citation omitted).

12. Hon. Carl B. Rubin & Laura Ringenbach, *The Use of Court Experts in Asbestos Litigation*.

the plaintiffs claimed not just an abnormal X-ray, but a manifested asbestos-related disease, the court-appointed experts found that nearly sixty-five percent of the claimants had no asbestos-related conditions at all.¹³ Of the remaining thirty-five percent of claimants, approximately fifteen percent had asbestosis, and the rest presented pleural plaques (which do not necessarily suggest that asbestos-related disease is present).¹⁴ A similar study was conducted by neutral scientists appointed by the Manville Personal Injury Settlement Trust to review claims of people who reportedly had asbestos-related disease.¹⁵ In forty-one percent of the claims, both experts agreed that the claimant's X-ray did not present evidence of an asbestos-related disease.¹⁶ That study was published seven years ago, and the statistics are probably worse now, given that the number of non-malignant asbestos cases filed is on the rise and are, therefore, more prone to exaggeration and fraud.¹⁷

Ensuring appropriate diagnosis has become an especially pressing issue thanks to the Supreme Court's recent decision in *Norfolk & Western Railway v. Ayers*,¹⁸ allowing claims for fear of contracting cancer due to asbestos exposure.¹⁹ *Ayers* governs only relatively rare claims that arise under federal law, but is likely to be highly influential in state cases as well.²⁰ The decision undoubtedly encourages claims based on fraudulent or highly-questionable diagnosis of 'asbestos-related' abnormalities on chest X-rays.²¹ It is relatively difficult for a plaintiff to pursue a fraudulent or exaggerated claim that he has a well-defined serious asbestos-related disease such as mesothelioma. It is, however, relatively easy for a plaintiff to find a physician to back up his claim that there are some spots on his lung or some pleural thickening that, based on fraudulent or exaggerated expert testimony, has caused the plaintiff to fear that he will develop cancer in the future.

A. Dealing With Misdiagnosis: Using Neutral Experts

As discussed in Part B below, only physicians certified as 'B-readers' who are probably qualified in a relevant field, such as radiology and perhaps pulmonology, should be permitted to testify in court regarding their interpretation of X-rays that they used to diagnose asbestos-related

137 F.R.D. 35, 37-39 (1991).

13. *Id.*

14. *Id.*

15. Griffin B. Bell, *Asbestos Litigation and Judicial Leadership: The Courts Duty to Help Solve the Asbestos Litigation Crisis*, available at <http://nlcpi.org/books/pdf/vol6/number6June2002.pdf>.

16. *Id.*

17. Deborah Hensler, et al., *Asbestos Litigation in the U.S.: A New Look at an Old Issue*, RAND INST. FOR CIV. JUST. 29 (2001).

18. 123 S. Ct. 1210 (2003).

19. *Id.*

20. *See id.* at 1214-15 n.1 (allowing "fear of cancer" claims under the Federal Employer's Liability Act, which may be brought in federal or state court).

21. *See id.* at 1224 (stating that fear of cancer must stem from a current physical injury).

abnormalities.²² Using an appropriately stringent qualifications test, however, may not be sufficient to turn the tide with regard to medical quackery in asbestos injury diagnosis. A recent letter to the editor published in an occupational health journal described how some attorneys will pass an X-ray around to numerous radiologists until they find one who is willing to say that the X-ray shows symptoms of an asbestos-related disease.²³ Oddly enough, there is no ethical or other rule against this. In fact, the rule in most jurisdictions is that a defendant cannot take discovery with respect to such physician shopping. A defendant cannot ask how many experts the plaintiff spoke to or what they said.

The best solution to this problem would be if courts would appoint panels of neutral experts, perhaps three experts, to review each X-ray.²⁴ All federal and state courts have the inherent authority to appoint neutral experts and can tax the costs in a variety of ways; in many cases involving 'junk science,' the defendant would likely volunteer to reimburse the court for any expenses involved, but many other solutions are possible. After I first proposed the use of court-appointed experts for diagnosis purposes,²⁵ I came across the following proposal by Dr. Lawrence Martin, which is an excellent starting place for discussion of replacing hired guns with neutral experts:

Two panels of expert physicians should be created: board-certified radiologists to interpret the chest X-rays and board-certified pulmonary physicians to examine any claimants with truly abnormal films. Physicians comprising both panels would be agreed to beforehand by both plaintiff and defense attorneys. As a practical matter, this would probably entail about 100 radiologists and 200 pulmonary physicians, spread geographically around the country.

Physicians eligible for the two panels would take a course on asbestos-related diseases, and have to pass some sort of test to be

22. See Martin, *supra* note 1.

23. David Egilman, *Asbestos Screenings*, 42 AM. J. INDUS. MED. 163 (2002).

24. See Bell, *supra* note 15, at 41 (suggesting that state and federal courts should use neutral physician panels to review medical evidence in asbestos claims); see also *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 149-50 (1997) (Breyer, J., concurring) ("Judges should be strongly encouraged to make greater use of their inherent authority . . . to appoint experts.").

25. See David E. Bernstein, *Keeping Junk Science out of Asbestos Litigation*, *Mealey's Asbestos Litig. Rep.*, Sept. 6, 2002, at 1, 2. I wrote that the best solution to the problem of expert shopping would be if courts would appoint panels of neutral experts, perhaps three experts, to review each X-ray. *Id.* If the three experts agree that there is no asbestos-related disease, the judge should grant summary judgment and dismiss the claim. If two of the experts think that there is no asbestos-related impairment, but one expert does think that there are signs of disease, then the court should inform the jury that two-thirds of the appointed panel of neutral experts thought that there was no sign of disease. *Id.*

included. For radiologists, the B-reader exam might suffice. For pulmonologists, a new exam would be designed to test general knowledge of asbestos-related diseases. This might seem an expensive enterprise, but the total cost would be far less than what is now spent on screening evaluations, re-evaluations, and legal costs for the tens of thousands of claimants.

All chest X-rays would be read in a blinded fashion by radiologists from the panel. The physicians would be paid for each film read, with the money coming equally from both sides out of a common fund. Among the chest X-rays submitted for reading would be a large portion (at least 20%) from patients *never exposed* to friable asbestos at work, who are otherwise matched to the workers who were exposed (e.g., similar smoking history and age). Inclusion of this group of chest X-rays should help guard against bias in the interpretations. Every chest X-ray would be interpreted on its own merits, and the radiologist would have no way of knowing anything about the person whose film is being read. The radiologist would not know if the subject was ever an asbestos worker, if he was party to any claim, or even if he ever smoked. In this way the radiologist would have no attorney to please or displease with his interpretation and have only his own integrity to worry about.

In this scheme each chest X-ray would be read by three experienced, unbiased, board-certified radiologists. If at least two of the three radiologists found no asbestos disease on the chest X-ray, that worker would not be allowed to file a claim for asbestos lung disease. Any worker whose claim is rejected in this fashion would be allowed to re-enter the review process after three years.

If two of the three radiologists felt there was some asbestos-related disease on the screening chest X-ray, the individual's work history would be checked; if in fact he ever worked with or around asbestos, he would then go for a clinical examination by the pulmonary physician to evaluate his overall medical condition (including lung function tests).

A final report would be filed by the pulmonary physician. He or she would also be paid from a common fund and not directly by either side. After the report is filed any dispute (other than about interpretation of the initial chest X-ray) could be litigated. In this

manner, bogus cases based on over-interpretation of chest X-rays would be eliminated.²⁶

[Another possible] solution to the expert-shopping problem would be to allow defendants to discover how many doctors the plaintiff's attorney consulted before he found one willing to testify regarding disease diagnosis. [A major] weakness of this solution is that it would only affect plaintiffs who consult ten doctors before they find one, but it would not inhibit plaintiffs' attorneys who have a stable of hired guns who consistently say whatever they want.²⁷ This problem, however, could be solved by the adoption of my suggestion that pure hired gun experts should not be allowed to testify at all, because a reasonable person would not consult such persons outside the context of litigation.²⁸

B. Dealing With Misdiagnosis: Ensuring Physicians Have Appropriate Qualifications

All jurisdictions in the United States require expert witnesses to be properly qualified. The traditional rule for the qualification of medical experts was that almost any physician could testify to almost any medical issue.²⁹ This rule arose because of the difficulties plaintiffs in medical malpractice cases used to have in finding experts to testify on their behalf.³⁰ This problem no longer exists, and in any event the rule should never have been applied outside of the specific context of malpractice cases.

Not surprisingly then, courts are moving away from the traditional rule.³¹ In the forthcoming *The New Wigmore: Volume on Expert and Demonstrative Evidence*,³² my co-authors and I advance a more appropriate test for the qualification of medical experts on diagnosis, which we call the

26. Lawrence Martin, *Asbestos Lung Disease: A Primer for Patients, Physicians and Lawyers*, at <http://www.mtsinai.org/pulmonary/Asbestos/asbestos-questions.htm#solutiontoproblem>

27. David E. Bernstein, *Improving the Qualifications of Experts in Medical Malpractice Cases*, 1 LAW, PROBABILITY & RISK 10 (2002).

28. *Id.*

29. *Id.*; see, e.g., *Smith v. Ortho Pharm. Corp.*, 770 F. Supp. 1561, 1568 (N.D. Ga. 1991) (quoting *Payton v. Abbott Labs*, 780 F.2d 147, 155 (1st Cir. 1985)) ("The fact that the physician is not a specialist in the field in which he is giving his opinion affects not the admissibility of his opinion but the weight the jury may place on it."); GRAHAM C. LILLY, AN INTRODUCTION TO THE LAW OF EVIDENCE 485 (2d ed. 1987) ("[A] general practitioner of medicine can qualify as an expert on a specialty within medicine . . . even though there are specialists who presumably are more knowledgeable within the restricted field.")

30. Bernstein, *supra* note 27, at 2.

31. See *id.* at 12-13.

32. DAVID E. BERNSTEIN, DAVID H. KAYE, & JENNIFER MNOOKIN, *THE NEW WIGMORE: EXPERT EVIDENCE* (forthcoming 2003).

reasonable patient test: would a well-informed reasonable person seek a diagnosis from the proffered expert on whatever this expert wants to testify about? In the asbestos context, the test could be stated as follows: would a reasonable person who thought he had the asbestos-related abnormality that he is claiming in litigation go to the testifying physician for a diagnosis?³³

The reasonable patient would first of all want a physician who is actually qualified to make a diagnosis.³⁴ Thus, for example, as Dr. Martin suggests, testimony interpreting X-rays as showing (or not showing) asbestos-related abnormalities should be limited to radiologists and perhaps pulmonologists who have been specially trained to do so.

Physicians who diagnose plaintiffs as having cancer should also be appropriately qualified as specialists in oncology, pulmonology (if lung cancer is involved), or another relevant specialty.³⁵ It's hard to image that a reasonable patient would not seek a competent specialist for a cancer diagnosis.

Some progress in the direction of ensuring that cancer diagnoses are made by competent physicians has been made in a recent ruling in a bankruptcy case involving personal injury claims against bankrupt asbestos corporations.³⁶ The court held that for a claim of cancer to proceed, a diagnosis of cancer must be "demonstrated by a medical report of a *board-certified internist, pulmonary specialist, oncologist or pathologist* showing the diagnosis as a primary cancer, which states to a reasonable degree of medical certainty that the cancer in question is caused by asbestos exposure."³⁷ The court is too permissive regarding the relevant specialties (would a reasonable patient really be satisfied with a diagnosis of cancer from an internist?), but it certainly is a welcome step away from allowing virtually any medical doctor to diagnose asbestos-related cancer.

A clearer problem with this ruling is that it does not reach the problem of hired gun experts. Being a hired gun expert is not usually thought of as

33. Bernstein, *supra* note 27, at 2.

34. *Id.*

35. In contrast, it has been reported that one osteopath, Dr. Gregory Nayden: testified in a deposition that he had evaluated approximately 14,000 people as part of these litigation screenings, for which he was paid more than \$1 million. He concluded that every single one had asbestosis. Nayden, the testimony showed, was not an expert in asbestosis, was unfamiliar with much of the medical criteria, was unlicensed in the states in which he was working, and he didn't even write up his own reports.

Asbestosis Litigation: A Shining Example of Fraud, Abuse, and Obscene Greed By Trial Lawyers, at http://www.rangelmd.com/2002_09_01_archive.html.

The Claims Resolution Management Corporation eventually refused to accept medical reports generated by Nayden and his facility. The CRMC gave as a partial list of reasons:

The repeated misconception that a diagnosis can be based solely upon a B- reading; the incomplete and unreliable work and exposure history taken by the AMT "intake" workers and available for review by Dr. Nayden; Dr. Nayden's inadequate familiarity with the PFT, ILO and B-Reading processes and terminology; and Inconsistent testimony given by AMT personnel. Memorandum from David Austern, President of CRMC, to Dr. Gregory Nayden, Sept. 24, 2002, available at <http://www.claimers.com/Home/PDF/MEM-ATM.PDF>.

36. See *In re* USG Corp., 290 B.R. 223 (Bankr. D. Del. 2003).

37. *Id.* at 227.

an issue of qualifications, but considered from the perspective of the reasonable patient test it clearly is such an issue. A reasonable patient would want to be diagnosed not only by a physician qualified in a relevant specialty, but one who does not spend most of his time participating in litigation as a 'hired gun.' For example, a reasonable person who suspected he had lung cancer would not want to be diagnosed by a physician who spends the better part of his time participating in litigation and rarely actually sees any of his own patients. And if a reasonable patient would not seek that physician's opinion, then why should the court admit that physician's testimony?³⁸ An expert on diagnosis should be someone who makes his living as a doctor who actually sees the patients, or at least as a researcher who actually does research, and not simply as a hired gun that spends ninety-five percent of their time reviewing asbestos X-rays.

II. 'JUNK SCIENCE' REGARDING THE CAUSATION OF ASBESTOS-RELATED DISEASES

In addition to misdiagnosis of asbestos-related disease, the second context in which 'junk science' has arisen in asbestos litigation is in the area of causation. With regard to causation, the most pressing issue is whether fleeting exposure to minute amounts of asbestos causes disease. For example, the Big 3 American automakers have been deluged with lawsuits

38. A similar view is reflected in statutes attempting to crack down on hired gun testimony in medical malpractice litigation. Connecticut requires that an expert testifying in a medical malpractice action have had an active involvement in the practice or teaching of medicine within the five-year period before the incident giving rise to the claim. CONN. GEN. STAT. ANN. § 52-184c(b) (2) (West 1999). In Kansas, medical experts must have spent at least fifty percent of the two-year period prior to the malpractice action in active clinical practice. KAN. STAT. ANN. § 60-3412 (1994). Maryland decrees that "[t]he attesting expert may not devote annually more than 20 percent of the expert's professional activities to activities that directly involve testimony in personal injury claims." MD. CODE ANN. CTS. & JUD. PROC. § 3-2A-04(b)(4) (2002). In Michigan, the expert must have devoted a majority of his professional time in the year before the incident to either the active clinical practice of the same health profession and specialty as the defendant, or to the instruction of students in an accredited health professional school or accredited residency or clinical research program in the defendant's health profession and specialty. MICH. COMP. LAWS ANN. § 600.2169(1)(b) (West 1999). Ohio, meanwhile, requires medical expert witnesses to devote seventy-five percent of their professional time to active clinical practice. OHIO REV. CODE ANN. §2743.43(A) (2) (West 1992). In Texas, an expert witness must be practicing at the time of the testimony or have practiced at the time the claim arose. TEX. REV. CIV. STAT. ANN. art. 4590i, subch. N, § 14.01(a) (1) (Vernon 2000). Illinois law requires the trial court to examine whether the witness has devoted a 'substantial portion' of his time to the medical practice, teaching, or research related to the issue at hand. 735 ILL. COMP. STAT. ANN. § 5/8-2501 (2000). A later version of this statute, passed as part of a broad 'tort reform' measure, required a malpractice expert to devote seventy-five percent of his time to practicing medicine, or engaging in teaching or research relating to the underlying medical problem at issue in the case. The state supreme court declared the entire tort reform statute unconstitutional in *Best v. Taylor Machine Works*, 689 N.E.2d 1057, 1062 (Ill. 1997), thereby reviving the 'substantial portion' rule.

from auto mechanics claiming that exposure to asbestos from brake-repair work caused disease, despite contrary scientific evidence.³⁹

A. Ensuring Qualified Experts

Until recently, courts were much too liberal about allowing doctors, especially treating physicians, to testify with respect to causation evidence. Courts have had a mistaken notion that if a doctor examines a patient in his office, this means that the doctor has some special insight into what caused the patient's disease. In fact, clinical physicians (as opposed to doctors who engage in research) are trained to diagnose and treat medical problems, not to determine whether an injury was caused by exposure to a particular substance. Therefore, unless a particular treating physician is actually immersed in the literature discussing the possible external causes of a plaintiff's health problems, he should generally not be permitted to testify regarding causation.

Physicians who are not trained researchers are vulnerable just like laypeople to the 'post hoc ergo propter hoc'—after which, therefore, because of which—fallacy. Post hoc evidence is based solely on a temporal sequence of events. For example, if an infant develops a brain tumor after getting a measles vaccine, the baby's physician may conclude that there is a problem with measles vaccines. In fact, however, there are several million babies getting measles vaccine every year and every now and again one of them will get a brain tumor. The fact that these babies happen to get the brain tumor after the measles vaccine does not mean the measles vaccine caused the brain tumor.⁴⁰

Nevertheless, this is the kind of reasoning that physicians often use in all sorts of medical causation contexts⁴¹ including asbestos. A physician may

39. See Steve Hantler, *Toward Greater Judicial Leadership on Asbestos Litigation*, Manhattan Inst. Civ. Just. F. No. 41, Apr. 2003, at 6.

40. Recognizing the problem of post hoc clinical evidence, the Food and Drug Administration ("FDA") has promulgated regulations describing the necessary preconditions before it will consider a clinical study purporting to show the effectiveness of a drug to be valid. These regulations are instructive because proving the effectiveness of an agent, i.e., that it does good things, involves the same methodology as proving that an agent causes harm. As the introduction to the regulations note, they are based on principles "recognized by the scientific community as the essentials of an adequate and well-controlled clinical investigation." 21 C.F.R. § 314.126(a) (1993). The FDA regulations state that "[i]solated case reports, random experience, and reports lacking the details which permit scientific evaluation will not be considered." *Id.* at § 314.126(e). This language is quoted with approval in one of the most persuasive opinions on the admissibility of scientific evidence, Merrell Dow Pharm., Inc. v. Havner, 953 S.W.2d 706, 720 (Tex. 1997).

For a recent opinion excluding the testimony of a treating physician that breast implants caused the immune system disease scleroderma, see *Meister v. Engineering Corp.*, 267 F.3d 1123 (D.C. Cir. 2001). The court wrote:

Whether Meister's condition was atypical or not, Dr. Borenstein failed to show any nexus between her atypical symptoms and her breast implants; *the mere simultaneous existence of the two clearly is not an appropriate methodology*. His reliance on case reports, temporal methodology, and Meister's atypical symptoms are not sufficient to show that silicone breast implants are capable of causing scleroderma, and therefore his reliance on differential analysis does not meet *Daubert* standards. *Id.* at 1129 (emphasis added).

41. For example, as detailed in *Galileo's Revenge* and *Phantom Risk*, family physicians often

think, "I've been told that my patient was exposed to occasional asbestos from insulation. He now has some lung disease or some form of cancer, it must be related." Physicians who are sufficiently disengaged from the scientific process that they use such reasoning should not be permitted to testify as qualified experts in causation cases.

Fortunately, beginning in the early 1990s as part of a general trend toward stricter scrutiny of expert evidence, the federal courts have started to crack down on the use of unqualified physicians who seek to testify about causation. For example, in *Diaz v. Johnson Matthey, Inc.*,⁴² the plaintiff alleged that working conditions at his former job caused him to develop platinum salt allergies.⁴³ His lawyers sought to introduce a pulmonologist to testify about his condition and to support his causation theory, but this doctor, while perfectly qualified to treat the plaintiff for his problems, was not board-certified in occupational medicine and was not an expert in epidemiology, toxicology, biostatistics, animal biology, or in industrial hygiene.⁴⁴ The district court concluded that this physician was not qualified to testify about the causation of the alleged injury at issue because he had at best a limited familiarity with the literature in the field.⁴⁵ Other federal courts have issued similar rulings,⁴⁶ and state courts should follow their lead.

B. Requiring Expert Testimony on Causation to be Reliable

Even if experts testifying regarding causation are qualified, the testimony must, of course, meet the particular jurisdiction's reliability

testified successfully on behalf of plaintiffs alleging that simple trauma caused their cancer, to the detriment of defendants who had competent oncologists familiar with the relevant scientific evidence testifying on their behalf. KENNETH R. FOSTER, ET AL., PHANTOM RISK: SCIENTIFIC INFERENCE AND THE LAW (1993); PETER W. HUBER, GALILEO'S REVENGE: JUNK SCIENCE IN THE COURTROOM (1991); see also *Ferebee v. Chevron Chem. Co.*, 736 F.2d 1529, 1535 (D.C. Cir. 1984) (holding that a treating physician may rely on test results and physical examination of plaintiff to prove causation of cancer from exposure to the herbicide paraquat).

42. 893 F. Supp. 358 (D.N.J. 1995).

43. *Id.* at 361.

44. *Id.* at 363.

45. See *id.* at 373.

46. See, e.g., *Christophersen v. Allied-Signal Corp.*, 939 F.2d 1106, 1112-13 (5th Cir. 1991) (stating that a medical expert must be qualified on the specific causation issue before the court); *Porter v. Whitehall Labs., Inc.*, 9 F.3d 607, 615 (7th Cir. 1993) (excluding the causation testimony of an unqualified medical expert); *O'Conner v. Commonwealth Edison Co.*, 807 F. Supp. 1376 (C.D. Ill. 1992), *aff'd*, 13 F.3d 1090 (7th Cir. 1994) (concluding that while the plaintiff's expert was a qualified ophthalmologist, he was not qualified in the specific area of radiation-induced cataracts); *Wade-Greaux v. Whitehall Labs, Inc.*, 874 F. Supp. 1441, 1476 (D.V.I. 1994), *aff'd*, 46 F.3d 1120 (3d Cir. 1994) (finding that a witness educated as a pediatrician, pharmacologist, and toxicologist was unqualified to testify regarding causation of birth defects because he had merely reviewed, for the purpose of litigation, selected literature on the subject); see also *Broders v. Heise*, 924 S.W.2d 148, 152-53 (Tex. 1996) ("the proponent of the testimony has the burden to show that the expert possesses special knowledge as to the very matter on which he proposes to give an opinion").

standards.⁴⁷ In federal court, the standard is the ‘*Daubert* trilogy,’ named after three major federal Supreme Court cases in the 1990s that revolutionized the standards for the admissibility of expert testimony—*Daubert v. Merrell Dow Pharmaceuticals, Inc.*,⁴⁸ *General Electric Co. v. Joiner*,⁴⁹ and *Kumho Tire Co., Ltd. v. Carmichael*.⁵⁰ *Daubert* held that scientific evidence must be subjected to a reliability test;⁵¹ *Joiner* concluded that under *Daubert* district courts should scrutinize the reliability of an expert’s reasoning process as well as his general methodology;⁵² and *Kumho Tire* extended *Daubert*’s reliability test to non-scientific expert evidence.⁵³

Thus far, nine states—Arkansas,⁵⁴ Delaware,⁵⁵ Louisiana,⁵⁶ Massachusetts,⁵⁷ Mississippi,⁵⁸ Nebraska,⁵⁹ Oklahoma,⁶⁰ Texas,⁶¹ and Wyoming⁶²—have fully adopted the *Daubert* trilogy, while another six states—Kentucky,⁶³ Ohio,⁶⁴ New Hampshire,⁶⁵ North Carolina,⁶⁶ Rhode Island,⁶⁷ and South Dakota,⁶⁸ have adopted *Daubert* and *Kumho Tire*.

47. See generally *Hantler*, *supra* note 39 (calling for courts to be much more vigorous in their application of *Daubert* to asbestos cases).

48. 509 U.S. 579 (1993).

49. 522 U.S. 136 (1997).

50. 526 U.S. 137 (1999).

51. *Daubert*, 509 U.S. at 579.

52. *Joiner*, 522 U.S. at 136.

53. *Kumho Tire*, 526 U.S. at 137.

54. *Farm Bureau Mut. Ins. Co. of Ark. v. Foote*, 14 S.W. 3d 512 (Ark. 2000) (adopting *Daubert*); *Coca-Cola Bottling Co. of Memphis, Tenn. v. Gill*, 100 S.W.3d. 715 (Ark. 2003) (adopting *Kumho Tire* and *Joiner*).

55. *M.G. Bancorporation, Inc. v. LeBeau*, 737 A.2d 513 (Del. 1999) (adopting *Daubert* and *Kumho Tire*); *Minner v. Am. Mortg. & Guar. Co.*, 791 A.2d 826 (Del. Ch. 2000) (adopting *Joiner*).

56. *State v. Foret*, 628 So. 2d 1116 (La. 1993) (adopting *Daubert*); *Darbonne v. Wal-Mart Stores, Inc.*, 774 So. 2d 1022 (La. App. 2000) (adopting *Kumho Tire*); *Lemaire v. CIBA-GEIGY Corp.*, 793 So. 2d 336 (La. 2001) (adopting *Joiner*).

57. *Commonwealth v. Lanigan*, 641 N.E.2d 1342 (Mass. 1994) (adopting *Daubert*); *Case of Canavan*, 733 N.E.2d 1042 (Mass. 2000) (adopting *Joiner* and *Kumho Tire*).

58. *Miss. R. Evid.* 702 (amended 2003).

59. *Schafersman v. Agland Coop*, 631 N.W.2d 862 (Neb. 2001) (expressly adopting the *Daubert/Joiner/Kumho* trilogy).

60. *Christian v. Gray*, 65 P.3d 591 (Okla. 2003) (civil cases); *Harris v. State*, 13 P.3d 489 (Okla. Crim. App. 2000) (criminal cases).

61. *E.I. du Pont de Nemours and Co. v. Robinson*, 923 S.W.2d 549 (Tex. 1995) (adopting *Daubert*); *Merrell Dow Pharm., Inc. v. Havner*, 953 S.W.2d 706 (Tex. 1997); *Gammill v. Jack Williams Chevrolet, Inc.*, 972 S.W.2d 713 (Tex. 1998) (announcing a test consistent with *Kumho Tire* and *Joiner*); *Exxon Pipeline v. Zwahr*, 88 S.W.3d 623 (Tex. 2002).

62. See *Bunting v. Jamieson*, 984 P.2d 467 (Wyo. 1999) (adopting *Daubert* and *Kumho Tire*); *Williams v. State*, 60 P.3d 151 (Wyo. 2002) (adopting *Joiner*).

63. See *Mitchell v. Commonwealth*, 908 S.W. 2d 100 (Ky. 1995), *overruled on other grounds*, *Fugate v. Commonwealth*, 993 S.W. 2d 931 (Ky. 1999) (adopting *Daubert*); *Goodyear Tire and Rubber Co. v. Thompson*, 11 S.W. 3d 575 (Ky. 2000) (adopting *Kumho Tire*).

64. See *State v. Nemeth*, 694 N.E. 2d 1332 (Ohio 1998).

65. See *Baker Valley Lumber, Inc. v. Ingersoll-Rand Co.*, 813 A.2d 409 (N.H. 2002).

66. See *State v. Goode*, 461 S.E.2d 631 (N.C. 1995) (adopting *Daubert*); *Taylor v. Abernethy*, 560 S.E. 2d 233 (N.C. App. 2002) (adopting *Kumho Tire*).

67. See *Raimbeault v. Takeuchi Mfg. (U.S.), Ltd.*, 772 A.2d 1056 (R.I. 2001).

68. See *State v. Hofer*, 512 N.W.2d 482 (S.D. 1994) (adopting *Daubert*); *Rogen v. Monson*, 609 N.W. 2d 456 (S.D. 2000) (adopting *Kumho Tire*).

Kumho Tire implicitly incorporates the substantive holding of *Joiner*, that courts may scrutinize not just an expert's general methodology, but also his reasoning process. Of the rest of the thirty or so *Daubert* jurisdictions, most have not had occasion to discuss *Joiner* or *Kumho Tire*. However, Oregon has implicitly rejected *Joiner*, holding that courts may only scrutinize an expert's general methodology and not his reasoning,⁶⁹ and West Virginia has rejected *Kumho Tire*.⁷⁰ With these two exceptions, it appears that the full *Daubert* trilogy is on its way to becoming the standard in *Daubert* jurisdictions.

Daubert, however, is not the whole story. Many states continue to utilize the 'general acceptance' test stated in *Frye v. United States*,⁷¹ including the populous states of California, Florida, New York, and Pennsylvania.⁷² *Frye* can be just as strict as *Daubert/Joiner* if a court looks not just to the general acceptance of an expert's broad methodology, but also to general acceptance with respect to the way that the expert extrapolates from the evidence.⁷³ In a jurisdiction that applies a sound version of *Frye*, it is not enough for a plaintiff's expert to simply testify that he or she is relying on a particular methodology, such as epidemiology, in forming the opinion, and that the methodology in question is generally accepted. Instead, that expert has to show that he extrapolated in a generally accepted way from the epidemiological study to his causation conclusion.

Several states are applying *Frye* in this way.⁷⁴ For example, the Florida Supreme Court, though reversing a lower court ruling excluding evidence under *Frye*,⁷⁵ recently accepted the proposition that *Frye* requires experts to have "extrapolated from the data to reach their conclusions" in a generally

69. *Jennings v. Baxter Healthcare Corp.*, 14 P.3d 596 (Or. 2000).

70. *Watson v. Inco Alloys Int'l, Inc.*, 545 S.E. 2d 294 (W. Va. 2001).

71. 293 F. 1013 (D.C. Cir. 1923).

72. See David E. Bernstein, *Frye, Frye, Again: The Past, Present, and Future of the General Acceptance Test*, 41 JURIMETRICS 385 (2001). The *Frye* states are Alabama, Arizona, California, Florida, Illinois, Kansas, Maryland, Michigan, Minnesota, Missouri, New Jersey, New York, North Dakota, Pennsylvania, and Washington. See *Courtaulds Fibers, Inc. v. Long*, 779 So. 2d 198 (Ala. 2000); *Turner v. State*, 746 So. 2d 355 (Ala. 1998); *Logerquist v. McVey*, 1 P.3d 113 (Ariz. 2000); *People v. Leahy*, 34 Cal. Rptr. 2d 663 (1994); *Murray v. State*, 692 So. 2d 157 (Fla. 1997); *Donaldson v. Central Ill. Pub. Serv. Co.*, 767 N.E.2d 314 (Ill. 2002); *Kuhn v. Sandoz Pharms. Corp.*, 14 P.3d 1170 (Kan. 2000); *Burrall v. State*, 724 A.2d 65 (Md. 1999); *Anton v. State Farm Mut. Auto. Ins. Co.*, 607 N.W.2d 123 (Mich. Ct. App. 1999); *Goeb v. Tharaldson*, 615 N.W.2d 800 (Minn. 2000); *Long v. Mo. Delta Med. Ctr.*, 33 S.W.3d 629 (Mo. Ct. App. 2000); *State v. Harvey*, 699 A.2d 596 (N.J. 1997); *People v. Wesley*, 633 N.E.2d 451 (N.Y. 1994); *City of Fargo v. McLaughlin*, 512 N.W.2d 700 (N.D. 1994); *Blum ex rel. Blum v. Merrell Dow Pharms. Inc.*, 764 A.2d 1 (Pa. 2000); *State v. Copeland*, 922 P.2d 1304 (Wash. 1996).

73. See *Toledo v. Med. Eng'g Corp.*, 50 Pa. D. & C. 4th 129 (Pa. Dist. Ct. 2000) (noting that how *Frye* and *Daubert* are applied is more important than which standard is used).

74. See Bernstein, *supra* note 72, at 399-400.

75. *E.I. DuPont De Nemours & Co. v. Castillo ex rel. Castillo*, 748 So. 2d 1108, 1121 (Fla. Dist. Ct. App. 2000).

accepted way.⁷⁶ Similarly, in *Goeb v. Tharaldson*, the Minnesota Supreme Court held that under its version of *Frye*, a novel scientific technique must not only be generally accepted in the relevant scientific community, but “particular evidence derived from that test must have a foundation that is scientifically reliable.”⁷⁷ Before *Daubert* superceded *Frye* in federal court, the United States Court of Appeals for the Fifth Circuit interpreted *Frye* in this way as well.⁷⁸

On the other hand, the Illinois Supreme Court has held that judicial scrutiny under *Frye* is limited to ensuring that an expert is relying on a methodology that experts generally accept as potentially providing useful data on the subject at issue.⁷⁹ Under the Illinois rule, it does not matter if the methodology is used in a manner that is not generally accepted by experts in the field.⁸⁰ For example, epidemiology is a generally accepted methodology for showing the relationship between exposure to a substance and causation of injury from that substance, so in Illinois *Frye* is no barrier to an expert who claims to be relying on epidemiological evidence when testifying regarding causation, even if the leap from the evidence to the conclusion is patently absurd.

California is the most populous and influential *Frye* jurisdiction, and it is yet unclear how (or if) *Frye* (known as the *Kelly* test in California) is applicable to the types of scientific evidence typically proffered in toxic tort cases. As of this writing, there are no reported cases applying *Frye* to toxic tort or products liability cases, and pre-*Daubert* opinions suggest that *Frye* would rarely if ever be applicable to personal injury litigation.⁸¹ It is nevertheless likely that in the wake of the U.S. Supreme Court’s expert evidence trilogy, California will follow other states and either apply *Frye* to expert testimony in toxic tort cases⁸² or establish a separate, but equally strict test for the admissibility of expert testimony in civil cases.⁸³

76. *Castillo v. E.I. Du Pont De Nemours & Co., Inc.*, 854 So. 2d 1264 (Fla. 2003).

77. *Goeb v. Tharaldson*, 615 N.W.2d 800, 816-17 (Minn. 2000). See generally *Checchio v. Frankford Hosp.-Torresdale Div.*, 717 A.2d 1058 (Pa. Super. 1998) (applying *Frye* to medical causation evidence in a malpractice case).

78. *Christopherson v. Allied Signal Corp.*, 939 F.2d 1106 (5th Cir. 1991).

79. See *Donaldson v. Cent. Ill. Pub. Serv. Co.*, 767 N.E.2d 314 (Ill. 2002).

80. *Id.*

81. See RAOUL D. KENNEDY & JAMES C. MARTIN, CALIFORNIA EXPERT WITNESS GUIDE §4.15, at 56 (2d ed., Supp. Mar. 1999) (noting the absence of reported cases applying *Kelly/Frye* to toxic tort or product liability evidence).

In the past, California limited *Frye*, even in criminal cases, to situations in which “the evidence is produced by a machine” or by other seemingly objective means. *People v. McDonald*, 690 P.2d 709, 724 (Cal. 1984); *overruled on other grounds*, *People v. Mendoza*, 4 P.3d. 265 (Cal. 2000). The state supreme court reasoned that “like many laypersons, jurors tend to ascribe an inordinately high degree of certainty to proof derived from an apparently ‘scientific’ mechanism, instrument, or procedure.” *Id.* The court further explained that for *Frye* to apply there must be an “unproven technique or procedure [that] appears both in name and description to provide some definitive truth which the expert need only accurately recognize and relay to the jury,” such as “machines or procedures which analyze physical data.” *People v. Stoll*, 783 P.2d 698, 710 (Cal. 1989).

82. The introduction of genetic testing of various types in toxic tort and other cases may afford California courts an opportunity to apply *Frye* in these types of cases. See Gary E. Marchant, *Genetic Susceptibility and Biomarkers in Toxic Injury Litigation*, 41 JURIMETRICS J. 67, 105-06

Indeed, since *Daubert* no state has held that *Frye* is not applicable to evidence of causation in toxic torts cases, while courts have applied *Frye* in products liability and toxic torts cases in Arizona,⁸⁴ the District of Columbia,⁸⁵ Florida,⁸⁶ Illinois,⁸⁷ Maryland,⁸⁸ Minnesota,⁸⁹ New York,⁹⁰ and Pennsylvania.⁹¹ It makes sense to apply *Frye* to complex scientific evidence in civil cases because “[t]he same concerns for reliability that led to the adoption and application of *Frye* in criminal cases ‘are no less present because the action is civil in nature.’”⁹² As Justice Breyer wrote in his concurring opinion in *Joiner*:

(2000) (discussing procedural considerations resulting from the use of biomarkers in toxic tort cases). But even ignoring that issue, California is likely to follow the national trend toward applying a stringent admissibility standard in both civil and criminal litigation, as there are few if any other jurisdictions that have a stringent admissibility standard that only applies to a very limited category of scientific evidence. *But cf.* *People v. Bui*, 103 Cal. Rptr. 2d (Cal. Ct. App. 2001) (holding that a toxicologist’s testimony, based on two epidemiologic studies that methamphetamine use can and did cause impairment of motor coordination, was not subject to *Kelly-Frye*).

83. For example, even though the California Supreme Court has only applied *Kelly* to scientific evidence, lower California courts have begun to create reliability tests for non-scientific expert evidence. *See Charles M. Miller, Kumho Tire v. Carmichael and Expert Testimony in Insurance Coverage and Bad Faith Cases*, at http://expertpages.com/news/kumho_tire_insurance_coverage.html. Moreover, the California Supreme Court has been willing to uphold grants of summary judgments to defendants when causation evidence is too tenuous to raise a genuine issue of fact. *See Saelzler v. Advanced Group* 400, 23 P.3d 1143 (Cal. 2001) (upholding summary judgment where the experts’ opinions were “simply too tenuous” to raise an issue of fact); *Merrill v. Navegar*, 28 P.3d 116, 132 (Cal. 2001) (granting summary judgment where plaintiff’s evidence of causation amounted to “little more than guesswork, reasoning that ‘it is insufficient’ when plaintiff’s evidence ‘leaves the question of causation in the realm of mere speculation and conjecture’”); *cf. Ochoa v. Pac. Gas and Elec. Co.*, 72 Cal. Rptr. 2d 232 (Cal. App. 1998) (upholding a grant of summary judgment because the plaintiff’s expert allergist was not an expert on the causation issue in question).

84. *Lofgren v. Motorola, Inc.*, 1998 WL 299925, at *20 (Ariz. Super. Ct. June 1, 1998).

85. *Bahura v. S.E.W. Investors*, 754 A.2d 928, 943 (D.C. 2000).

86. *E.I. DuPont De Nemours & Co. v. Castillo ex rel. Castillo*, 748 So. 2d 1108, 1113-15 (Fla. Dist. Ct. App. 2000); *Berry v. CSX Transp., Inc.*, 709 So. 2d 552, 555-57 (Fla. Dist. Ct. App. 1998); *Centex-Rooney Constr. Co. v. Martin County*, 706 So. 2d 20, 26-28 (Fla. Dist. Ct. App. 1997); *Eldridge v. Riddell, Inc.*, 626 So. 2d 232, 233-34 (Fla. Dist. Ct. App. 1993) (Warner, J., concurring).

87. *Donaldson v. Cent. Illinois Pub. Serv. Co.*, 730 N.E.2d 68 (Ill. App. Ct. 2000); *Duran v. Cullinan*, 677 N.E.2d 999 (Ill. App. Ct. 1997).

88. *United States Gypsum Co. v. Mayor of Baltimore*, 647 A.2d 405 (Md. 1994); *Owens Corning v. Bauman*, 726 A.2d 745 (Md. Ct. Spec. App. 1999); *Keene Corp. v. Hall*, 626 A.2d 997 (Md. Ct. Spec. App. 1993).

89. *Goeb v. Tharaldson*, 615 N.W.2d 800, 814-16 (Minn. 2000).

90. *Oppenheim v. United Charities*, 698 N.Y.S.2d 144 (N.Y. App. Div. 1999) (mem.); *Selig v. Pfizer, Inc.*, 713 N.Y.S.2d 898, 901-03 (Sup. Ct. 2000); *Collins v. Welch*, 678 N.Y.S.2d 444 (Sup. Ct. 1998).

91. *Blum ex rel. Blum v. Merrell Dow Pharms., Inc.*, 764 A.2d 1, 3-4 (Pa. 2000). *But see Kuhn v. Sandoz Pharms. Corp.*, 14 P.3d 1170 (Kan. 2000). In the confusing *Kuhn* case, the Kansas Supreme Court acknowledged that *Frye* applies to evidence of general causation, but held that (1) it does not apply to expert testimony based on “pure opinion” regarding specific causation; and (2) expert evidence regarding general causation is not necessary in drug exposure cases involving only an individual case of exposure. *Id.* at 1179, 1184.

92. *Blum v. Merrell Dow Pharms. Inc.*, 705 A.2d 1314, 1319 (Pa. Super. Ct. 1997) (quoting Liles

[M]odern life, including good health as well as economic well-being, depends upon the use of artificial or manufactured substances, such as chemicals. And it may . . . prove particularly important to see that judges fulfill their *Daubert* gatekeeping function, so that they help assure that the powerful engine of tort liability, which can generate strong financial incentives to reduce, or to eliminate, production, points toward the right substances and does not destroy the wrong ones.⁹³

Moreover, the California Supreme Court's main reasons for adopting *Frye* in *Kelly* are just as applicable to the civil context as to the criminal context. According to the court, the general acceptance test has the following advantages: (1) it "ensures that those most qualified to assess the general validity of a scientific method will have the determinative voice" on such issues; (2) it ensures "that a minimal reserve of experts would be available to scrutinize critically each technique in a particular case; (3) it reflects a consensus that develops in the scientific community "regarding the reliability of particular scientific evidence" which would promote uniformity of decisions; and (4) its conservative nature protects the parties in a given case from fads and charlatans.⁹⁴

Some California judges might be reluctant to apply *Frye* in toxic tort cases for fear of excessively raising the evidentiary barrier for plaintiffs. Reluctant courts should recognize that ensuring the reliability of expert evidence is particularly important in toxic tort cases, and asbestos litigation in particular, because the economic stakes to the parties and to society are extremely high. Creating a sound barrier to junk science may be all that stands between legitimate compensation for plaintiffs that were truly injured by asbestos products and a litigation free-for-all that will bankrupt hundreds of companies to pay mostly for injuries not actually caused by asbestos.

Once it is established that *Kelly* is applicable in California toxic tort cases, California will very likely follow the lead of other *Frye* jurisdictions that apply a robust version of *Frye* that ensures that a proffered expert is using a generally accepted methodology and will not follow the much weaker Illinois version of *Frye*. It is already well-established in California that, in order to pass the *Kelly* test, not only must the general acceptance of the reliability of the scientific technique at issue be established, but the profferer of the evidence must show that "in the particular case, the correct and accepted scientific technique was actually followed."⁹⁵

Indeed, one California trial court, in an unpublished opinion, has excluded evidence in a case alleging that breast implants caused the plaintiff's immune system disease because the evidence failed to satisfy the

v. Balmer, 653 A.2d 1237, 1243 (Pa. Super. Ct. 1994), *aff'd*, 764 A.2d 1 (Pa. 2000)); *see also* Thomas v. West Bend Co., 760 A.2d 1174 (Pa. Super. Ct. 2000).

93. Gen. Elec. Co. v. Joiner, 522 U.S. 136, 148-49 (1997) (Breyer, J., concurring).

94. People v. Kelly, 549 P.2d 1240, 1244-45 (Cal. 1976) (emphasis omitted).

95. People v. Brown, 110 Cal. Rptr. 2d 750, 753 (Ct. App. 2001) (citing *Kelly*).

Kelly test.⁹⁶ This court stated that in California “the proponent of evidence must demonstrate that correct scientific procedures were used in the particular case,” and that “expert opinions must emanate from and be centered and grounded in what is current and predominant in the scientific ‘marketplace.’”⁹⁷ The court drew no distinction between civil and criminal cases.

In another breast implant case, a California appellate court did not directly apply the *Kelly* test.⁹⁸ Instead, the court held that the trial court acted within its discretion under Evidence Code section 352⁹⁹ to exclude causation evidence that was contrary to a clear scientific consensus and for which there was no sound basis. Thus, even lower California courts that are hesitant to apply *Kelly/Frye* in toxic tort cases because of a lack of explicit state supreme court guidance can use section 352 to exclude unreliable causation testimony in asbestos cases.

Even if *Daubert* and *Frye* are interpreted to strictly limit junk science evidence of causation in asbestos cases, the problem will not be solved, as there are a few states, such as Wisconsin¹⁰⁰ and Nevada¹⁰¹ that have no reliability standard for the admissibility of expert testimony. In these states, if a plaintiff proffers a qualified expert, that expert may pretty much say whatever he wants before the jury.

If state courts are unwilling to proactively serve as gatekeepers in order to keep out unreliable evidence, the legislature should step in where appropriate. The *Daubert* trilogy has been codified in section 702 of the amended Federal Rules of Evidence. States that currently follow the old version of Rule 702 should amend their rules of evidence to adopt the modern version. Even Mississippi, once notorious for having extremely liberal standards for the admissibility of scientific evidence, has adopted a counterpart to the amended version of Rule 702.

C. Using Neutral Experts

Causation testimony is another area where courts could use neutral court-appointed experts to testify in place of adversarial hired gun experts. There have been proposals, such as one by David Bernick of Kirkland & Ellis, to use neutral court-appointed experts for consolidated claims in

96. *Dinerman v. McGhan Med. Corp.*, No. BC 065884 (Cal. Super. Ct. 1997) (mem.).

97. *Id.* at 2-3.

98. *Smith v. Minn. Mining & Mfg.*, 2002 WL 32264 (Cal. Ct. App. Jan. 11, 2002). The trial court had apparently relied on *Kelly*. See <http://www.herrickassociates.com/Daubert.html>.

99. “The court in its discretion may exclude evidence if its probative value is substantially outweighed by the probability that its admission will (a) necessitate undue consumption of time or (b) create substantial danger of undue prejudice, of confusing the issues, or of misleading the jury.” Cal. Evid. Code § 352 (West 1995).

100. See *Bernstein supra* note 27, at n.25 (citing *State v. Peters*, 534 N.W.2d 867 (Wis. 1995)).

101. *Dow Chem. Co. v. Mahlum*, 970 P.2d 98, 108 n.3 (Nev. 1998).

federal bankruptcy courts.¹⁰² It is not necessary, however, for individual federal or state judges to wait for federal bankruptcy courts to act before using court-appointed experts in their own courtrooms. The beginning of the end of the breast implant litigation came when individual federal district courts in New York and Oregon appointed expert panels to investigate the relationship between silicone breast implants and immune system disease.¹⁰³ Once these courts did so and embarrassed the multi-district litigation judge, he then turned around and appointed his own panel of experts, which concluded there was no relationship between silicone breast implants and immune system disease. That was pretty much the end of the litigation in federal court, and state court settlement values went down dramatically.

There is clearly some relationship between asbestos and diseases. The effects of exposure to asbestos on a particular individual, however, depend on the level of exposure and what type of asbestos one was exposed to and for how long. Those are issues that a neutral expert panel appointed by a court would generally be much better at resolving than partisan experts who are hired and compensated by parties with a vested interest in the litigation.

III. CONCLUSION

The crisis in asbestos litigation has been discussed by many commentators, in law journals, newspaper articles, and editorials.¹⁰⁴ A federal legislative solution would be one way to address the problem.¹⁰⁵ Unless or until a national legislative solution is enacted, however, state courts and legislatures need to take measures, such as those suggested above, to address the serious problems in asbestos litigation today.

102. See Parloff, *supra* note 2, at 154.

103. See David E. Bernstein, *The Breast Implant Fiasco*, 87 CAL. L. REV. 457, 491-92 (1999).

104. See, e.g., Bell, *supra* note 15; Mark A. Behrens, *Some Proposals for Courts Interested in Helping Sick Claimants and Solving Serious Problems in Asbestos Litigation*, 54 BAYLOR L. REV. 331 (2002); Paul F. Rothstein, *What Courts Can Do in the Face of the Never-Ending Asbestos Crisis*, 71 MISS. L.J. 1, 15-20 (2001); *Lawyers Torch the Economy*, WALL ST. J., Apr. 6, 2001, at A14; *The Job-Eating Asbestos Blob*, WALL ST. J., Jan 23, 2002, at A22; Parloff, *supra* note 2, at 154; Lisa Girion, *Firms Hit Hard as Asbestos Claims Rise*, L.A. TIMES, Dec. 17, 2001, at A1; Eric Roston, *The Asbestos Pit*, TIME, Mar. 11, 2002, at Y9.

105. See *Amchem Prods., Inc. v. Windsor*, 521 U.S. 591, 628-29 (stating that “[t]he argument is sensibly made that a nationwide administrative claims processing regime would provide the most secure, fair, and efficient means of compensating victims of asbestos exposure.”); *Ortiz v. Fibreboard Corp.*, 527 U.S. 815, 821 (1999) (“[T]he elephantine mass of asbestos cases . . . defies customary judicial administration and calls for national legislation.”); *Id.* at 865 (“[T]he ‘elephantine mass of asbestos cases’ cries out for a legislative solution.”) (Rehnquist, C.J., joined by Scalia & Kennedy, JJ., concurring) (internal citation omitted).