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Citation: 86 Va. L. Rev. 801 2000

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ESSAY

SCIENTIFIC AUTHORITY: THE BREAST IMPLANT LITIGATION AND BEYOND

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INTRODUCTION

The breast implant litigation has produced the first National Science Panel appointed by a federal trial judge.¹ The Panel, composed of four members picked from various disciplines, was charged with making findings about general causation and silicon

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¹See Order No. 31, *In re Silicone Gel Breast Implant Prods. Liab. Litig.*, Master File No. CV 92-P-10000-S [hereinafter MDL 926] (N.D. Ala. May 30, 1996) (establishing the National Science Panel subject to a showing of good cause to the contrary); Order No. 31B, MDL 926 (N.D. Ala. June 13, 1996) (confirming the appointment of the National Science Panel as originally proposed). All MDL 926 Orders are available at Significant MDL926 Orders and Other Materials (last modified Jan. 28, 2000) <<http://www.fjc.gov/BREIMLIT/ORDERS/orders.htm>>. As noted by John Coffee, “[t]here have been expert panels, but . . . [none have] reached a nationwide judgment on whether injuries are outside scientific evidence.” Thomas M. Burton, *Top Judge in Breast-Implant Case Calls on Doctors to Hear Evidence*, *Wall St. J.*, July 22, 1997, at B6. Prior to the Panel’s consideration of testimony regarding scientific evidence, Judge Samuel Pointer noted that “this proceeding is essentially without precedent.” *Id.* The breast implant litigation is described generally in Marcia Angell, *Science on Trial: The Clash of Medical Evidence and the Law in the Breast Implant Case* (1996). The decision to appoint a National Science Panel is reminiscent of a proposal for a National Science Court. See Arthur Kantrowitz, *Proposal for an Institution for Scientific Judgment*, 156 *Sci.* 763 (1967). Specifically, the Science Court would have held an “adversary hearing, open to the public, governed by a disinterested referee, in which expert proponents of the opposing scientific positions argue their cases before a panel of scientist/judges” who are “experts in areas adjacent to the dispute.” Task Force of the Presidential Advisory Group on Anticipated Advances in Science and Technology, *The Science Court Experiment: An Interim Report*, 193 *Sci.* 654 (1976), *reprinted in* 4 *Risk: Issues in Health & Safety* 179, 180 (1993). The proposal was never adopted.

implants.² After more than two years of study and at a cost to the parties of \$800,000,³ on December 1, 1998, the four Panel members reported they did not find a sufficient scientific basis to link silicon implants to either connective tissue diseases or immune system dysfunctions.⁴ On June 21, 1999, the Institute of Medicine of the National Academy of Sciences issued a report—as requested by Congress—that reached the same result.⁵ But the appointment of the Panel and even the completion of the Panel's work mark only the beginning of what will likely be a long and contentious struggle over the proper use of science panel results in both the current implant litigation and in future litigation.

In this Essay, we propose a “scientific authority” model that will yield a comprehensive plan for resolving questions about the use of science panel results in the trial court, on appeal, and in collateral cases in the breast implant litigation and other mass tort cases. Recent Supreme Court decisions have dramatically reduced the prospects for widespread settlement in mass tort litigation and prompted the need for adjudicative solutions.⁶ Our proposal is not

² Order No. 31, *supra* note 1, at 4.

³ See *An Unnatural Disaster*, Wall St. J., Dec. 10, 1998, at A22 (noting the duration and cost for the “team of independent researchers”). The results of the study were completed and submitted to the judge in November 1998. See National Science Panel, *Silicone Breast Implants in Relation to Connective Tissue Diseases and Immunologic Dysfunction: Executive Summary*, reprinted in 3 David L. Faigman et al., *Modern Scientific Evidence: The Law and Science of Expert Testimony* § 41-2.1 (1999) [hereinafter *Executive Summary*].

⁴ See National Science Panel, *Silicone Breast Implants in Relation to Connective Tissue Diseases and Immunologic Dysfunction*, (November 17, 1998), available at Report from National Science Panel (last modified December 15, 1998) <<http://www.fjc.gov/BREIMLIT/SCIENCE/report.htm>>. The Panel found that, based upon their review of research that had been conducted, implants “do not alter incidence or severity of autoimmune disease” and that women with implants “do not display a silicone-induced systemic abnormality in the . . . cells of the immune system.” *Executive Summary*, *supra* note 3, §§ 41-2.1.5[1]–[2]. The Panel also found that “[n]o association was evident between breast implants and any of the . . . connective tissue diseases . . . or the other autoimmune/rheumatic conditions,” and no association was evident between implants and “undifferentiated connective tissue disease.” *Executive Summary*, *supra* note 3, §§ 41-2.1.5[3]–[4].

⁵ See Institute of Medicine, *Safety of Silicone Breast Implants*, available at <<http://books.nap.edu/books/0309065321/html/index.html>> (noting Congress's request for a study of the safety of silicone breast implants); *Study Again Clears Silicone: Breast Implants Said to Cause No Major Disease*, Wash. Post, June 22, 1999, at A2 (summarizing the findings of the Institute of Medicine's report).

⁶ See *Ortiz v. Fibreboard Corp.*, 119 S. Ct. 2295, 2323 (1999) (reversing the Fifth

intended to favor either plaintiffs or defendants, but is intended to promote the efficient and just use of science panel results.

In Part I, we will describe the National Science Panel and explain how the members were chosen, the procedures used in carrying out the study, and the content of the report. In Part II, we will describe early responses to the Panel's findings. These responses cast doubt on the hope that the Panel's results will be used to eliminate conflicting outcomes and redundant expert testimony in the breast implant litigation. In Part III, we will introduce our proposal for correcting this trend by specifying our scientific authority model. We extend our earlier work,⁷ which was limited to social science research, and argue that where the results of scientific research are generalizable in nature, those results should be treated as law-like, at least for the purpose of resolving questions about the use of science panels. In Part IV, we will elaborate our proposal by applying our scientific authority model to suggest specific procedures for using science panel results that, we argue, will reduce costly redundancy of proof and encourage courts to decide similar cases similarly. In Part V, we will illustrate the use of our model in cases involving different subject matters by applying it to current cases involving emissions from the Hanford Nuclear Reservation.

I. THE NATIONAL SCIENCE PANEL

In this Part, we examine the role played by the National Science Panel in the federal breast implant litigation. We begin by providing a brief history of the breast implant litigation. We then discuss the National Science Panel's appointment, the investigation it carried out, and the results of its work.

A. History of Breast Implant Litigation

Dow Corning Corporation created the first silicone gel breast implants in 1962.⁸ The devices consisted of a silicone shell filled

Circuit's approval of a limited fund asbestos settlement pursuant to Fed. R. Civ. P. 23(b)(1)); *Amchem Prods. v. Windsor*, 521 U.S. 591, 619-29 (1997) (requiring substantial compliance with Fed. R. Civ. P. 23 in certifying classes for settlement).

⁷ See John Monahan & Laurens Walker, *Social Authority: Obtaining, Evaluating, and Establishing Social Science in Law*, 134 U. Pa. L. Rev. 477 (1986).

⁸ See Angell, *supra* note 1, at 39; Institute of Medicine, *supra* note 5, at 69.

with silicone gel.⁹ In some cases the shell ruptured after implant, permitting the gel to spread into the area of the implant, and sometimes beyond.¹⁰ In addition, even an intact shell may have permitted the release of small amounts of gel.¹¹ These developments resulted in claims by some implant recipients that the leaking gel caused various diseases and led to lawsuits against Dow Corning and other manufacturers.¹² In January 1992, the Food and Drug Administration banned the use of silicone gel implants, and "a tidal wave of litigation" followed.¹³ Although in April 1992, the FDA relaxed the ban to permit use of implants for reconstruction after mastectomy, correction of congenital deformities, or replacement of ruptured implants, the surge of litigation continued.¹⁴

⁹ See Angell, *supra* note 1, at 39. Subsequently, additional manufacturers entered the breast implant market. The resulting competition produced innovations such as saline-filled implants, which are now generally available. See *id.* at 43-44; see also Institute of Medicine, *supra* note 5, at 58 ("[S]ince the 1992 FDA moratorium on gel-filled implants, single-lumen saline implants . . . have almost completely replaced gel implants.").

¹⁰ See Angell, *supra* note 1, at 42; FDA, *Breast Implants: An Information Update* 1998, at 15-16 (1998).

¹¹ See Angell, *supra* note 1, at 41; Institute of Medicine, *supra* note 5, at 64-65.

¹² See Angell, *supra* note 1, at 69 ("Dow Corning alone saw a surge in lawsuits from about 200 at the end of 1991 to 10,000 by the end of 1992."); see also Executive Summary, *supra* note 3, § 41-2.1.4:

The first suggestion that there might be adverse systemic reactions to augmentation mammoplasty were reports of autoimmune disease in Japanese women who received liquid paraffin or silicone injections for breast augmentation. Subsequently, concerns were raised regarding an association of silicone breast implants with classic connective tissue diseases and less well-defined atypical syndromes. These initial concerns were expressed in case reports in the medical literature and raised the call for examination of the effects of silicone on the immune system.

Id. § 41-2.1.4.

¹³ Angell, *supra* note 1, at 69. See also FDA, *supra* note 10, at 36. In the two years following the FDA ban, more than 16,000 state and federal lawsuits were filed on behalf of women with breast implants. See Angell, *supra*.

¹⁴ See FDA, *supra* note 10, at 36; see also David A. Kessler, *The Basis of the FDA's Decision on Breast Implants*, 326 *New Eng. J. Med.* 1713 (1992) (explaining that 1976 Medical Device Amendments to the Food, Drug and Cosmetic Act required that manufacturers affirmatively demonstrate to the FDA that medical devices are safe, but that the safety of silicone gel breast implants was uncertain). See generally Angell, *supra* note 1, at 69-70 (describing the methods the plaintiffs' bar used to organize for breast implant litigation).

In mid-1992 the Judicial Panel on Multidistrict Litigation ("MDL Panel")¹⁵ determined that the number of breast implant cases pending in the federal courts required consolidation of those cases for pretrial proceedings.¹⁶ The panel ordered the cases transferred to the United States District Court for the Northern District of Alabama for proceedings to be conducted by Judge Samuel Pointer.¹⁷ Eventually, over 21,000 cases were transferred to the Alabama district court.¹⁸

After months of pretrial proceedings and negotiation,¹⁹ Judge Pointer approved a global settlement in April 1995, for \$3.72 billion.²⁰ As part of the settlement, Judge Pointer certified a class²¹ defined primarily as "all persons with breast implants that were manufactured before June 1, 1993, whose implants were manufactured by a settling defendant."²² Initially claimants were told to

¹⁵ The MDL Panel is authorized to transfer cases pending in federal district courts to a single federal district court for pretrial proceedings. See Manual for Complex Litigation § 31.13 (3d ed. 1993). Such pretrial consolidation of federal cases with "one or more common questions of fact . . . pending in different districts" is permitted if such consolidated proceedings "will be for the convenience of parties and witnesses and will promote the just and efficient conduct of such actions." 28 U.S.C. § 1407 (1994).

¹⁶ See *In re Silicone Gel Breast Implants Prods. Liab. Litig.*, 793 F. Supp. 1098, 1100 (J.P.M.L. 1992) (concluding that consolidation under § 1407 was "necessary in order to avoid duplication of discovery, prevent inconsistent pretrial rulings, and conserve the resources of the parties, their counsel and the judiciary").

¹⁷ See *id.* at 1099-1100.

¹⁸ See Richard B. Schmitt, Panel of Experts to Study Silicone Breast Implants, *Wall St. J.*, June 3, 1996, at B6 (citing to total cases handled by Judge Pointer pretrial); Order No. 31, *supra* note 1, at 1 n.2.

¹⁹ See Jack W. Snyder, *Silicone Breast Implants: Can Emerging Medical, Legal, and Scientific Concepts Be Reconciled?*, 18 *J. Legal Med.* 133, 182 (1997) (noting that ten months of negotiation between plaintiffs' counsel and manufacturers' representatives preceded the proposal of the global settlement in September 1993).

²⁰ See \$3.72 Billion Global Accord Preliminarily Approved; 2 No. 11 Mealey's Litig. Rep.: Breast Implants 3 (Apr. 7, 1994) *available in* Westlaw, MLRBI database [hereinafter *Global Accord*]. The settlement fund "later [grew] to \$4.25 billion as other manufacturers join[ed]." Aslibel S. Green, *Chronology Brief History Silicone Breast Implants*, *Portland Oregonian*, June 19, 1998, at A18.

²¹ See *Class Actions in Drug and Medical Device Cases: The Trend Against Class Certification*, 1997 *Andrews Breast Implant Litig. Rep.* 8576 (Jan. 28, 1997), *available in* Westlaw, ANBRIMLR database [hereinafter *Class Actions*] (noting the certification of the class "for settlement purposes").

²² See *Global Accord*, *supra* note 20. The proposed class additionally included "any person with a relationship to such a person and/or any child whose mother was implanted before their [sic] birth and was born before April 1, 1994." *Id.*

expect between \$200,000 and \$2 million.²³ By June 1, 1995, however, the number of claimants had unexpectedly increased to approximately 440,000²⁴ and projected recoveries diminished to a small percentage of the earlier predicted amounts.²⁵ About 15,000 plaintiffs chose to leave the class action and pursue individual litigation.²⁶ The defendants refused to increase the settlement fund²⁷ and Judge Pointer on October 8, 1995 permitted plaintiffs a second opportunity to opt out of the settlement class.²⁸ The prospect of yet more individual litigation prompted Dow Corning on May 15, 1995, to ask a Michigan federal court for Chapter 11 bankruptcy protection,²⁹ effectively ending the settlement.³⁰ Efforts to develop

²³ See *In re Dow Corning Corp.*, 211 B.R. 545, 552 (Bankr. E.D. Mich. 1997) (citing John C. Coffee, Jr., *Class Wars: The Dilemma of the Mass Tort Class Action*, 95 Colum. L. Rev. 1343, 1407–08 (1995)). The anticipated sum to which each claimant would be entitled varied depending upon the total number of claims submitted. See *id.*

²⁴ See Angell, *supra* note 1, at 22.

²⁵ See *Dow Corning*, 211 B.R. at 552 (estimating that the proposed recovery amounts would be reduced to as little as five percent of the sum originally promised). Because as many as two million women received implants and were provided with high recovery estimates when given notice of the settlement, the offer might have “entice[d] many potential plaintiffs to file a claim when they otherwise would not have done so.” *Id.* at 552 n.5.

²⁶ See Angell, *supra* note 1, at 22.

²⁷ See *Dow Corning*, 211 B.R. at 552. In order to provide claimants with the amount originally estimated in the settlement after the higher than expected return of claims, the defendants “would have had to jointly contribute another \$24 billion. . . . Not surprisingly, the defendant manufacturers were not interested in increasing their already substantial monetary commitment.” *Id.* (citation omitted).

²⁸ See Judge Pointer Orders Second Opt-Out for Implant Plaintiffs, 3 No. 23 Mealey’s Litig. Rep.: Breast Implants (Oct. 12, 1995), *available in* Westlaw, MLRBI database (discussing Judge Pointer’s decision to allow a second opportunity for opt-out given the reduced recovery estimates and the failure to restructure the settlement).

²⁹ See *Dow Corning*, 211 B.R. at 553.

³⁰ See Burton, *supra* note 1, at B6 (noting the collapse of the global settlement “under the weight of voluminous claims and a Dow Corning Chapter 11 bankruptcy filing”). There have been some limited settlements. For example, after the Global Settlement Agreement failed, Judge Pointer requested that defendants Bristol-Myers Squibb Co., Baxter Healthcare Co., and Minnesota Mining and Manufacturing Co. propose a revised settlement agreement. The revised agreement was granted approval in December 1995 and notice was sent to potential claimants in January 1996. See Snyder, *supra* note 19, at 184–85; see also Plaintiffs Urge 11th Cir. To Void Injunctions Issued with Revised Settlement, 5 No. 3 Mealey’s Litig. Rep.: Breast Implants 10 (Dec. 12, 1996), *available in* Westlaw, MLRBI database [hereinafter Revised Settlement] (citing Order 27 granting approval to the limited settlement

a new agreement failed,³¹ and the parties necessarily turned to the prospect of an adjudicated outcome.³²

The National Plaintiffs' Steering Committee asked Judge Pointer to appoint a "Science Panel."³³ Apparently other judges were considering the use of science panels³⁴ and the Plaintiffs' Steering Committee preferred the appointment of a science panel in the Alabama proceeding.³⁵ Defendants opposed the appointment of the panel.³⁶

agreement).

³¹ See Thomas M. Burton, *Breast Implant Accord Appears Near Collapse: Judge Says He May Allow More Suits by Women Against Manufacturers*, Wall St. J., Sept. 7, 1995, at A3 (explaining the collapse of the 1993 global settlement and the subsequent order by Judge Pointer directing the parties to "reopen the talks and try to reach a new agreement that might more fully compensate women"). On September 6, 1995, lawyers for the parties met with representatives for defendant Bristol-Myers Squibb but failed to negotiate a new deal. Judge Pointer noted his skepticism for any potential deal at that time and stated his intent to enter an order allowing for the filing of new suits. See *id.*

³² See Thomas M. Burton, *New Offer Readied in Breast-Implant Case*, Wall St. J., Oct. 3, 1995, at B4 (referencing Judge Pointer's intent to permit the pursuit of individual lawsuits if settlement negotiations failed).

³³ See Order No. 31, *supra* note 1, at 1-2 (ordering the creation of the National Science Panel and noting the motion and arguments of the Plaintiffs' Steering Committee in favor of the appointment of Rule 706 experts). The Plaintiffs' Steering Committee is "a group of individuals appointed by the court to coordinate litigation efforts on behalf of all plaintiffs participating in the multidistrict litigation." See Karen Butler Reisinger, *Court-Appointed Expert Panels: A Comparison of Two Models*, 32 Ind. L. Rev. 225, 227 n.22 (1998).

³⁴ See Judge Pointer Looking Into Appointment of Scientific Panel, 4 No. 14 Mealey's Litig. Rep. 15: Breast Implants (May 23, 1996), *available in* Westlaw, MLRBI database. On April 3, 1996, Judges Harold Baer, Jr., and Jack Weinstein ordered the formation of a science panel to "review scientific issues" in the breast implant cases pending in New York federal district courts. See New York Judges Order Formation of Panel to Address Science Issues, 4 No. 11 Mealey's Litig. Rep.: Breast Implants 9 (Apr. 11, 1996), *available in* Westlaw, MLRBI database [hereinafter *New York Judges*]. They appointed special masters to assist in the creation of a Rule 706 panel. See *id.* In addition, New York Supreme Court Justice Joan B. Lobis, who was coordinating all the state implant cases, also participated. See *id.* The panel was appointed to "report to the court on the feasibility of providing useful general causation, scientific data and opinions and procedures for collecting and presenting information" and was "empowered to aid the federal courts in choosing neutral scientific experts." *Id.*

³⁵ See Order No. 31, *supra* note 1, at 1. The Plaintiffs' Steering Committee argued that the appointment of a science panel could avoid "potentially redundant or even conflicting results . . . arising from multiple Rule 706 appointments by different courts" and that "it would be preferable to have a single set of nationally-appointed experts." *Id.*; see also National Science Panel's Report Expected by Month's End, Mealey's Litig. Rep.: Breast Implants, Nov. 19, 1998, *available in* WL, 7 No. 2 MLRBI

B. Appointment of the National Science Panel

In May 1996, Judge Pointer responded to the Plaintiffs' Steering Committee request with an order outlining a plan for the creation of a National Science Panel.³⁷ The order described a "two-step process" beginning with the designation of a "Selection Panel" charged with the provision of "names of neutral, impartial persons who have the indicated expertise, who would be able to communicate effectively with judges and jurors, and who, if selected, would be willing to serve."³⁸ Judge Pointer requested up to three names each from the fields of epidemiology, immunology, rheumatology, and toxicology.³⁹

The second step was the designation of the National Science Panel itself, which was to be composed of four members chosen by the Court from the names furnished by the Selection Panel.⁴⁰ The Science Panel would be asked to "review, critique, and evaluate existing scientific literature, research, and publications" on subjects believed by the Court to be "relevant in breast-implant litigation, particularly on issues of 'general causation.'"⁴¹ The members were not asked to conduct independent research, but were permitted to consult with other experts from fields like mathematics, biology, and statistics.⁴²

Judge Pointer appointed six members to the Selection Panel, three based on prior selection by New York federal judges and three based on suggestions from state and federal judges in other areas of the nation.⁴³ In early August 1996, Judge Pointer appointed Dr. Betty A. Diamond to the National Science Panel as an

13 (discussing the arguments by the Plaintiff's Steering Committee in favor of appointing a panel).

³⁶ See Order No. 31, *supra* note 1; Order No. 31B, *supra* note 1.

³⁷ See Order No. 31, *supra* note 1, at 2.

³⁸ *Id.* at 2-3.

³⁹ See *id.* at 2.

⁴⁰ See *id.* at 2-3.

⁴¹ *Id.* at 4.

⁴² See *id.* at 4-5. The order also approves the use of experts from the fields of biomedicine, polymer chemistry, hematology, internal medicine, neurology, oncology, plastic and reconstructive surgery, and radiology. See *id.* The parties were directed to respond to the proposal by June 10, and Judge Pointer provided that his order would take effect June 12 unless cause to the contrary was shown. See *id.* at 6. In a confirming order issued June 13, 1996, Judge Pointer determined the appointment process should proceed. See Order No. 31B, *supra* note 1, at 3.

⁴³ See Order No. 31, *supra* note 1.

expert in immunology, Dr. Barbara S. Hulka as an expert in epidemiology, and Dr. Peter Tugwell as an expert in rheumatology.⁴⁴ In September 1996, he added Dr. Nancy I. Kerkvliet as an expert in toxicology.⁴⁵

C. *The Panel's Investigation*

In October 1996, Judge Pointer specified the questions for study.⁴⁶ Judge Pointer's request was divided into three parts: issues, scope, and contrary opinions.⁴⁷ With respect to issues, he asked, "To what extent, if any—and with what limitations and caveats—do existing studies, research, and reported observations provide a reliable and reasonable scientific basis for one to conclude that silicone-gel breast implants cause" connective tissue diseases and immune system dysfunctions?⁴⁸ With respect to scope, Judge Pointer asked the Panel to consider a list of other "diseases, symptoms, conditions, or complaints" and comment on any connection with implants.⁴⁹ Finally, Judge Pointer asked the panel to report any opinions contrary to their own that would be viewed as "legitimate and responsible disagreement within your profession."⁵⁰

⁴⁴ Dr. Diamond is a Professor in the Department of Microbiology and Immunology at the Albert Einstein College of Medicine. Dr. Hulka is the Kenan Professor in the Department of Epidemiology of the School of Public Health at the University of North Carolina, Chapel Hill. And Dr. Tugwell is Professor and Chairman of the Department of Medicine at the University of Ottawa. See Order No. 31C, MDL 926, at 1 (N.D. Ala. Aug. 23, 1996) [hereinafter Order No. 31C].

⁴⁵ Dr. Kerkvliet is a Professor and Extension Toxicologist Specialist in the Department of Agricultural Chemistry at Oregon State University. See Order No. 31D, MDL 926, at 1 (N.D. Ala. Sept. 17, 1996) [hereinafter Order No. 31D]; See also Barbara S. Hulka, Nancy L. Kerkvliet, and Peter Tugwell, Experience of a Scientific Panel Formed to Advise the Federal Judiciary on Silicone Breast Implants, 342 *New Eng. J. Med.* 812 (2000) (describing the experience of three panel members).

⁴⁶ See Order No. 31E, MDL 926, at 1 (N.D. Ala. Oct. 31, 1996) [hereinafter Order No. 31E].

⁴⁷ See *id.*

⁴⁸ *Id.* In addition to the questions detailed in Judge Pointer's Order, the Judge also provided general guidance with respect to the scope of the Panel's responsibilities in a two-day conference held in October 1996 where "general guidance and procedural directions were developed and recorded." *Id.* at 2.

⁴⁹ *Id.*

⁵⁰ *Id.*

To answer Judge Pointer's questions the Panel heard from experts chosen by plaintiff and defense attorneys.⁵¹ In the spring of 1997 over 2000 documents were submitted to the Panel, though the attorneys eventually designated forty key documents for each panel member.⁵² The Panel members also employed, throughout the investigation, their own search strategies and were not limited to reviewing materials submitted by the parties.

D. The Panel's Results

On December 1, 1998, the Panel reported to Judge Pointer that they had found no sufficient scientific basis to link silicone implants to either connective tissue diseases or immune system dysfunctions.⁵³ In a letter accompanying the results the members stated they

⁵¹ See Thomas M. Burton, Testimony at Silicone-Implant Hearing Apparently Fails to Prove Link to Illness, Wall St. J., July 25, 1997, at B3; Experts on Silicone Breast Implants Speak at Science Panel in Birmingham, 5 No. 18 Mealey's Litig. Rep. 9: Breast Implants (July 24, 1997), available in Westlaw, MLRBI database. In October 1996, the Panel heard from experts selected by the parties after receiving instructions from the judge. See Executive Summary, supra note 3, § 41-2.1.1. In July 1997, the National Science Panel conducted its first session to hear the presentations of parties' experts. More than nineteen "research scientists and physicians" presented testimony on their research into "a wide range of scientific issues, including implant rupture, silicone gel leakage and migration into the liver and other organs, chronic inflammation and joint pain." National Science Panel on Silicone Breast Implants Ends its First Session, 5 No. 19 Mealey's Litig. Rep. 21: Breast Implants (Aug. 11, 1997), available in Westlaw, MLRBI. Scientists selected by the plaintiffs presented data for the first two days and argued that "silicone particles that leak from broken implants migrate . . . creating dangerous situations and disease in women." *Id.* On the third and last day of the hearings, the defense experts responded, and although some acknowledged some evidence of physiological response to the presence of silicone in the body, all testified that the research did not support the conclusion that silicone implants cause disease. See *id.* In October 1997, the parties' attorneys "presented to the National Science Panel findings of fact to support their respective positions." Plaintiffs and Defendants Submit Findings of Fact on Testimony Presented During Science Panel Hearings, 6 No. 1 Mealey's Litig. Rep. 5: Breast Implants (Nov. 6, 1997), available in Westlaw, MLRBI database. In November 1997, researchers that did not present at the first session were invited to a second session. See Judge Pointer's Second National Science Panel Hearings Set for Next Week, 6 No. 1 Mealey's Litig. Rep. 7: Breast Implants (Nov. 6, 1997) available in Westlaw, MLRBI database. On November 10-11, the Panel conducted its second session and heard additional testimony from experts who did not initially appear. See National Science Panel End Second Session, Third Session Expected, 6 No. 2 Mealey's Litig. Rep. 15: Breast Implants (Nov. 20, 1997) available in Westlaw, MLRBI database.

⁵² See Executive Summary, supra note 3, § 41-2.1.1.

⁵³ See National Science Panel, supra note 4, at 1.

were “in general agreement on the contents of the report” although they noted “the Panel as a group has relied heavily on the specialized expertise of each Panel member for the specific information provided in the individual chapters.”⁵⁴ The report was divided into four chapters, with each chapter based on the expertise of one panel member.⁵⁵ With respect to toxicology, the Panel reported that

[a]nimal studies have addressed the possibility that silicone may promote systemic disease in women by acting as an adjuvant or an antigen to induce immune responses, by altering normal regulation of the immune system, or by inducing systemic inflammation. These potential effects have been tested in specialized animal models of autoimmune diseases. The preponderance of data from these studies indicate that silicone implants do not alter incidence or severity of autoimmune disease.⁵⁶

As to immunology, the Panel reported that “[t]he main conclusion that can be drawn from existing studies is that women with silicone breast implants do not display a silicone-induced systemic abnormality in the types or functions of cells of the immune system.”⁵⁷ As to epidemiology, the Panel concluded that “[n]o association was evident between breast implants and any of the individual connective tissue diseases, all definite connective diseases combined, or the other autoimmune/rheumatic conditions.”⁵⁸ Finally, as to rheumatology, the Panel reported that “[b]reast implant patients have reported a diversity of symptoms . . . associated with rheumatic or autoimmune diseases. For each sign or symptom showing an association with breast implants in a given study, other studies found no association.”⁵⁹ With respect to contrary opinions, the Panel stated that “the large majority of scientists in our respective disciplines would find merit in our re-

⁵⁴ See Letter from the National Science Panel to Judge Pointer (Nov. 19, 1998) (on file with the Virginia Law Review Association).

⁵⁵ See Executive Summary, *supra* note 3, § 41-2.1.2.

⁵⁶ *Id.* § 41-2.1.5[1].

⁵⁷ *Id.* § 41-2.1.5[2].

⁵⁸ *Id.*

⁵⁹ *Id.* § 41-2.1.5[4], at 361.

view and analyses.”⁶⁰ The Panel noted, however, that “a few individuals may find disagreements with our statements.”⁶¹

Significantly, six months after the National Science Panel presented Judge Pointer with its results, a report by the Institute of Medicine of the National Academy of Sciences confirmed the Panel’s basic conclusions. The Institute’s report was not generated as part of the National Science Panel process; rather, it was created at Congress’s request.⁶² In 1997 Congress asked the U.S. Department of Health and Human Services to sponsor a study of silicone breast implants,⁶³ after a House Report expressed concern “with the fragmentation of research on the safety of silicone breast implants and the relationship, or lack thereof, between silicone gel breast implants and connective tissue disease, classic auto-immune symptoms and other serious diseases.”⁶⁴ The lead agency for the study was the National Institute of Arthritis and Musculoskeletal and Skin Disease, and the plan was to carry out an evaluation of the evidence of association between silicone breast implants and disease.⁶⁵ A Committee on the Safety of Silicone Breast Implants was convened by the Institute composed of thirteen experts from a variety of medical and scientific fields.⁶⁶ The Committee conducted a scientific workshop, held a public meeting, and reviewed issues together over the course of fifteen months.⁶⁷

In June 1999 the Institute published its report. According to the Committee, a review of toxicology studies “does not provide a basis for health concerns.”⁶⁸ As to immunology, the Committee concluded that existing studies provide “no support for an immunologic role of silicone,” and further, that “there does not appear to be even suggestive evidence of a novel syndrome in women with breast implants” and “[t]here is no increase in primary or recurrent breast cancer in implanted women.”⁶⁹ Finally with respect to im-

⁶⁰ *Id.*

⁶¹ *Id.*

⁶² See Institute of Medicine, *supra* note 5, at 13.

⁶³ See *id.* at 13.

⁶⁴ *Id.* (quoting H.R. Rep. No. 104-659, at 120 (1997)).

⁶⁵ See *id.*

⁶⁶ See *id.* *supra* note 5, at 15–16.

⁶⁷ See *id.* at 16.

⁶⁸ *Id.* at 11.

⁶⁹ *Id.*

planted women, the Committee reported that epidemiological evidence with respect to a number of diseases or conditions of concern suggest they are "no more common in women with breast implants than in women without implants."⁷⁰

II. RESPONSE TO THE PANEL'S RESULTS

Early responses to the Panel's results have cast serious doubt on the prospect that the its conclusions will reduce conflict and redundancy, as had been hoped. One federal judge refused to allow the Panel's findings to be heard by a jury, which then returned a verdict in conflict with the Panel's findings. Another judge nearly duplicated the Panel process, and Judge Pointer, who appointed the Panel, has continued the Panel process after the issuance of the report by permitting depositions of Panel members. Finally, state court judges have paid almost no attention to the National Panel process.

Judge William B. Bryant did not allow a jury to consider the Panel's report in a breast implant case tried in the federal district court for Washington D.C., although the Panel's report was filed before the trial ended early in January 1999.⁷¹ The plaintiff in that case alleged that breast implants manufactured by Bristol-Myers Squibb Co. had caused her a variety of health problems, including a serious connective tissue disease, scleroderma.⁷² The trial involved weeks of conflicting expert testimony on the question of causation. The jury awarded the plaintiff ten million dollars in compensatory damages.⁷³

Judge Robert E. Jones, sitting in the District of Oregon, repeated much of the Panel's work. Several implant cases were filed in his federal district court, and others were removed to that court from Oregon state courts.⁷⁴ All of these cases were transferred by the MDL Panel for pretrial proceedings to the Northern District of

⁷⁰ *Id.*

⁷¹ See Bill Miller, \$10 Million Awarded in Breast Implant Suit; Doctor Blamed Scleroderma on Silicone, *Wash. Post*, Jan. 5, 1999, at B1.

⁷² See *id.*

⁷³ See *id.*

⁷⁴ See *Hall v. Baxter Healthcare Corp.*, 947 F. Supp. 1387, 1392 (D. Or. 1996) (noting the procedural history of the breast implant litigation in Oregon).

Alabama, as described above.⁷⁵ In 1995 and 1996, before the National Science Panel was launched, Judge Pointer remanded a number of the cases to the Oregon federal court for trial, and all of the cases were assigned to Judge Robert E. Jones.⁷⁶ In July 1996, after the National Panel process had begun,⁷⁷ defendants filed motions to exclude testimony about causation by plaintiffs' experts.⁷⁸ Judge Jones scheduled a hearing to consider the admissibility of scientific evidence, and in preparation for the hearing, Judge Jones appointed "technical advisors" from the fields of epidemiology, rheumatology, immunology/toxicology, and chemistry.⁷⁹

At the hearing held in August 1996, both sides presented experts who were questioned by the court, the advisors, and counsel.⁸⁰ Later, Judge Jones asked the advisors to review the testimony and to answer a series of questions about the scientific basis of the proffer.⁸¹ The technical advisors reported in September 1996, each submitting a separate report, and all focusing narrowly on the proposed testimony of particular experts.⁸² Although several of the advisors found some of the proposed testimony acceptable,⁸³ others were quite critical of key parts of plaintiffs' expert testimony.⁸⁴ After a second hearing and review of the entire record and the

⁷⁵ See *id.* at 1392; *supra* notes 15–18 and accompanying text.

⁷⁶ See *Hall*, 947 F. Supp. at 1392.

⁷⁷ See Order No. 31, *supra* note 1.

⁷⁸ See *Hall*, 947 F. Supp. at 1392.

⁷⁹ See *id.* at 1392–93.

⁸⁰ See *id.* at 1393.

⁸¹ See *id.* at 1393–94.

⁸² See *id.* at 1394. All of the questions and answers contained in the separate reports appear *id.* at 1415–76.

⁸³ For example, the epidemiologist generally endorsed the methodology employed by both the plaintiffs' and defendants' experts and noted that the conclusions reached by both sides were plausible despite identifying specific flaws in the science relied upon. See *id.* at 1446–51. The chemistry advisor observed that both the plaintiffs' and defenses' experts based their opinions on valid science, although they reached different conclusions from the same data. See *id.* at 1466–76.

⁸⁴ The rheumatology advisor and immunology advisor generally criticized the data provided by the plaintiffs' experts. The rheumatologist reviewed the basis for two of the plaintiff's witnesses' conclusions and found that the science underlying their conclusions was invalid because it was insufficient, inapplicable, or based on flawed methodology. See *id.* at 1451–59. Although the immunology advisor concluded that the studies relied upon were generally valid, he observed that some were insufficiently exposed to peer review, suffered from improper methodology, and that the conclusions drawn on the basis of these studies were weak. See *id.* at 1459–66.

advisors' reports, Judge Jones granted the defendants' motions to exclude plaintiffs' proposed testimony.⁸⁵ Judge Jones, however, also took the highly unusual step of deferring the effective date of his opinion "until the findings of the national . . . panel are available."⁸⁶ Judge Jones continued: "Depending on the court's evaluation of those findings, plaintiffs in these cases may seek reconsideration, if appropriate, of this decision."⁸⁷

Judge Pointer, who appointed the National Science Panel, conducted a "discovery-type" deposition for the four Panel members.⁸⁸ In his original order of appointment, Judge Pointer provided that this discovery opportunity would be followed shortly thereafter by a second deposition of the four experts that would be videotaped

⁸⁵ See *id.* at 1414–15. Judge Jones excluded "any expert testimony concerning a general causal link between silicone gel breast implants and . . . any systemic illness or syndrome." *Id.* at 1414.

⁸⁶ *Id.* at 1394; see also *Evidence on CTD, Autoimmune and Other Diseases Thrown Out by Oregon Federal Judge*, 5 No. 4 Mealey's Litig. Rep.: Breast Implants 3 (Dec. 30, 1996), available in Westlaw, MLRBI database. Despite his decision to await the results of the National Science Panel, Judge Jones commented that he was "unlikely to amend these findings and conclusions absent substantial and compelling developments in the scientific arena." *Hall*, 947 F. Supp. at 1415; see also Dave Hogan & Bryan Smith, *Breast Implant Lawsuits Hit Wall*, *Portland Oregonian*, Dec. 18, 1996, at A1 (discussing the postponement and predicting the date for completion of the National Science Panel report); Dave Hogan, *Ruling Puts Oregon Breast-Implant Suits in Limbo*, *Portland Oregonian*, Dec. 20, 1996, at C3 (discussing the delay in appealing Judge Jones' finding given the order's lack of finality pending resolution of the National Panel review); Richard B. Schmitt, *Women in Silicone-Implants Case Are Dealt a Major Blow by Judge*, *Wall St. J.*, Dec. 19, 1996, at B8 (noting the postponement of Judge Jones's order taking effect but highlighting the reluctance of Judge Jones to make any change in the order at that point).

⁸⁷ *Hall*, 947 F. Supp. at 1394–95 (D. Or. 1996). Judges Jack Weinstein and Harold Baer, Jr., responsible for hearing the breast implant cases pending in New York federal district courts, followed an approach similar to Judge Jones's, although they did not duplicate the Panel's work. In a joint opinion issued by Judges Weinstein and Baer, the defendants were denied summary judgment pending the report of the National Science Panel. See *In re Breast Implant Cases*, 942 F. Supp. 958, 961 (E. & S.D.N.Y. 1996). The judges noted the possibility that "further information will in time support plaintiffs' . . . claims [D]ismissal of plaintiffs' cases now would be unfair since scientists are still developing relevant information." *Id.*

⁸⁸ See *Science Panel Members Explain Methodologies*, According to Deposition Transcripts, 7 No. 12 Mealey's Litig. Rep. 4: Breast Implants (May 13, 1999), available in Westlaw, MLRBI database [hereinafter *Panel Members Explain*] (outlining the testimony given by the National Science Panel members in the April 1999 depositions).

and might be used as trial testimony.⁸⁹ But the order provides that plaintiffs and defendants will not be permitted to otherwise depose the experts or to subpoena the experts to testify at trial “[e]xcept for good cause.”⁹⁰ According to Judge Pointer, “[t]hese restrictions are essential to protect court-appointed experts from potential demands for attendance at depositions or trials in the hundreds or perhaps thousands of cases in which their testimony might be deemed desirable by the trial judge presiding over such cases or by one of the parties.”⁹¹ The fate of Judge Pointer’s plan is uncertain; it will be determined by other district judges who will try the breast implant cases on remand.

Finally, a substantial number of breast implant cases have been litigated in state courts. Just as in the federal cases, there has been conflict and redundancy, and the National Panel process has had little impact. For example, in *Dow Chemical Co. v. Mahlum*,⁹² plaintiffs brought suit against defendant Dow in a Nevada state court, claiming that Dow was liable for damages alleged to have resulted from the rupture of plaintiff’s silicone implants.⁹³ At trial, the plaintiff introduced the testimony of three experts—an immunologist, a neurologist, and a rheumatologist—all of whom testified that the rupture of the implants and release of silicone was linked to disease suffered by the plaintiff.⁹⁴ On appeal, the Nevada Supreme Court affirmed a judgment for the plaintiffs for \$3,973,654.⁹⁵

On the other hand, in *Minnesota Mining & Manufacturing Co. v. Atterbury*,⁹⁶ four plaintiffs sued, claiming that silicone gel implants manufactured by the defendant had caused them to suffer from a variety of diseases.⁹⁷ At trial, the plaintiffs introduced the testimony of four experts—two neurologists, an osteopathic rheumatologist,

⁸⁹ See Order No. 31, *supra* note 1, at 5. The stated purpose of the initial non-videotaped deposition was to examine the results of the report and was limited to “examination . . . needed by the parties to fairly prepare for the trial-perpetuation deposition” which was to be videotaped. *Id.*

⁹⁰ *Id.*

⁹¹ *Id.*

⁹² 970 P.2d 98 (Nev. 1998).

⁹³ See *id.* at 106.

⁹⁴ See *id.* at 107–08.

⁹⁵ See *id.* at 124.

⁹⁶ 978 S.W.2d 183 (Tex. App. 1998).

⁹⁷ See *id.* at 186.

and a biomaterials expert—in order to link silicone to their diseases.⁹⁸ The jury found for the plaintiffs and awarded damages to the plaintiffs that totaled \$1,555,000.⁹⁹ The Texas Court of Appeals reversed, holding that the testimony of the plaintiffs' experts was not acceptable proof of general causation.¹⁰⁰ Thus far, the results of National Science Panel have played no role in state courts, although at least the *Atterbury* court noted the potential importance of the Panel's appointment.¹⁰¹

These early signs of conflict and redundancy jeopardize the utility of the Panel findings and, even more importantly, may discourage the future appointment of similar panels. In our view, this pattern of judicial response to the Panel and its results suggests a lack of certainty as to the particular classification of the results, and hence uncertainty as to the proper management of the Panel's conclusions. Our scientific authority model, developed in Part III below, represents an attempt to mitigate some of this uncertainty.

III. SCIENTIFIC AUTHORITY MODEL

Judge Pointer has thus far treated the results of the National Science Panel as "fact." He has required the Panel members to submit to depositions and to give testimony about their findings.¹⁰² Judge Pointer's reliance on Federal Rule of Evidence 706 as authority to appoint the Panel mandates this treatment,¹⁰³ which is consistent with the common judicial classification of scientific results as fact.¹⁰⁴ Such a classification is plausible because the results

⁹⁸ See *id.*

⁹⁹ See *id.*

¹⁰⁰ See *id.* at 203.

¹⁰¹ See *id.* at 196 ("[W]e note . . . that a national panel of experts has been appointed pursuant to Fed. R. Evid. 706 to try to arrive at a consensus concerning the admissibility of expert testimony in silicone gel breast implant cases. The report of this panel may resolve the controversy surrounding claims of atypical connective tissue disease related to silicone breast implants.").

¹⁰² See Panel Members Explain, *supra* note 88 (outlining the testimony given by the National Science Panel members in the April 1999 depositions).

¹⁰³ See Fed. R. Evid. 706 ("[The witness'] deposition may be taken by any party; and [the witness] may be called to testify by the court or any party.").

¹⁰⁴ See Harold L. Korn, Law, Fact, and Science in the Courts, 66 *Colum. L. Rev.* 1080, 1081 (1966) (presenting a "speculative and exploratory analysis" regarding the question "[w]hy indeed is decision based on scientific knowledge so generally treated as 'fact' determination?").

of scientific research are positive in character,¹⁰⁵ just as other materials classified as fact are. In this sense, the results of science are indeed similar to factual reports about the time of day, weather conditions, stoplight color, or the existence of a signature on a contract. Neither science nor such mundane reports suggest conditions which *ought* to exist.¹⁰⁶ Neither have a normative component, and therefore both can be distinguished from law, which always has a normative component.¹⁰⁷

In this Part, however, we argue that science can also plausibly be classified as law-like, at least in some circumstances, and thus the choice of classifications is inherently contingent. Ultimately, we propose that the choice between science-as-fact-like and science-as-law-like should be made pragmatically, according to which classification is best under the particular circumstances.¹⁰⁸

¹⁰⁵ See *id.* at 1094 (“Much scientific knowledge . . . is purely descriptive; its ‘laws’ seek not to control or judge the phenomena of the real world, but to describe and explain them in neutral terms.”).

¹⁰⁶ See *id.*

¹⁰⁷ See *id.* at 1093–94 (“Concerned with ordering men’s conduct in accordance with certain standards, values, and societal goals, the legal system is a prescriptive and normative one dealing with the ‘ought to be.’”).

¹⁰⁸ See Henry M. Hart, Jr. & Albert M. Sacks, *The Legal Process: Basic Problems in the Making and Application of Law* 352 (1994) (“To ask whether the *initial* question of law application ‘is’ a question of law or fact is to conceal crucial issues of policy as to whether this further elaboration should take place. The real problem about such questions is not whether they *are* questions of law or fact but rather whether they *ought to be treated* as law or fact.”). The genealogy of the idea that the law/fact classification is malleable based on practical considerations dates back to the 19th century. See, e.g., James Bradley Thayer, *A Preliminary Treatise on Evidence at the Common Law* 183–262 (1898) (discussing the distinction between law and fact in jury trials).

This idea received its most prominent treatment by Oliver Wendell Holmes, Jr. in *Commonwealth v. Wright*, 137 Mass. 250 (1884), then-Judge Holmes upheld a jury verdict convicting the defendant of promoting a lottery, after the jury reached the factual decision that the game at issue constituted a lottery. In *Commonwealth v. Sullivan*, 146 Mass. 142 (1888), Holmes treated the *Wright* jury decision as a rule of law, explaining that the game at issue was “determined to be a lottery,” and asserting that

it is not necessary to go on forever taking the opinion of the jury in each new case that comes up. Whether or not a definitely described game falls within the prohibition of the statute, is a question of law. . . . Whatever practical uncertainty courts may have felt upon a subject with which they are less well acquainted than some others of the community, in theory of law there is no uncertainty, and the sooner the question is relieved from doubt the better.

Id. at 145.

Our argument builds on our earlier work, in which we developed a “social authority” model for the use of social science research in court.¹⁰⁹ Under our “social authority” model, social science materials would be regarded as a source of authority rather than a source of facts—i.e., courts would treat social science research as they would treat legal precedent under the common law.¹¹⁰ Treating social science research in such a manner would have a number of implications. For instance, our model would suggest that courts should take the initiative in developing social science findings, use the standard of scientific validity to evaluate these findings, and employ valid results in the same way that they would employ legal precedents.¹¹¹ In this essay, we extend the authority model to another category of evidence—the findings of a court-appointed panel of experts charged with making findings concerning the issues of general causation in mass tort litigation.

A. General Science

Our argument that science can sometimes be plausibly classified as law-like begins with the observation that scientific research is typically *generalizable* in character. That is, scientific findings have application beyond the specific subjects or materials involved in a given research project. Although scientific results are derived from particular pieces of research, those results are often addressed to entities or events that were not directly studied.¹¹² This aspect of scientific research is often called the “external validity” of a study, the extent to which results can be applied to conditions other than those actually investigated.¹¹³ As stated in a leading text in scientific methodology,

¹⁰⁹ See Monahan & Walker, *supra* note 7.

¹¹⁰ See *id.* at 478.

¹¹¹ *Id.* at 495–508.

¹¹² 1 David L. Faigman et al., *Modern Scientific Evidence: The Law and Science of Expert Testimony* § 2-5.0 (1999) (“Usually one does research at a specific time and place on a particular population, but hopes to be able to generalize the findings beyond the immediate people and circumstances of the study.”).

¹¹³ Of course, science is not always generalizable in nature because scientific methods can be used primarily to learn about the very situation which is the subject of the research. Such very specific research does not raise questions of external validity, but only questions about the validity of the specific conclusions, referred to as “internal validity.” *Id.* § 2-4.3.2. When case specific scientific research is undertaken

the usual strategy for increasing the generalizability of experimental findings is replication. That is, the experiment is repeated—by the same or another investigator who conducts the research at a different time, in a different setting or with slightly different procedures, or with a different sample of subjects. Indeed, the strongest argument for generality is that widely varying experimental tests have produced similar results.¹¹⁴

For example, given the consistency of the finding from many studies across the fields of epidemiology, immunology, rheumatology, and toxicology that silicone gel breast implants do not cause connective tissue diseases or immune system dysfunctions, that result can be taken to be highly generalizable. It is extremely implausible as a scientific matter that breast implants result in these maladies among women who live in one judicial district but not among women who live in another. As stated in *Modern Scientific Evidence*:

For reasons of generality, among other reasons, [scientists] prefer to see findings replicated in other places, using other participants, under various other conditions. The more different circumstances a phenomenon can be replicated in, the greater its generality, and the more confidence researchers as well as consumers of research should have in the phenomenon.¹¹⁵

B. General Law

Law is almost always general in character. Like science, law derives from particular situations—the decision of cases in a common law system and the enactment of legislation—but the effect of both

for litigation (e.g., in “consumer confusion” cases under the Lanham Trademark Act, or in “community standards” obscenity cases) the risk of bias—i.e., lack of internal validity—is apparent because the stakes of the parties will be known. See John Monahan & Laurens Walker, *Social Science in Law: Cases and Materials* 92–150 (4th ed. 1998) (providing examples of case-specific research involving both “consumer confusion” and “community standards”).

¹¹⁴ See Royce Singleton et al., *Approaches to Social Research* 177 (1988); see also David H. Kaye & David A. Freedman, *Reference Guide on Statistics*, in *Federal Judicial Ctr., Reference Manual on Scientific Evidence* 330, 350 (1994) (“Sometimes, several experiments or other studies, each having different limitations, all point in the same direction. Such convergent results strongly suggest the validity of the generalization.”) (footnotes omitted).

¹¹⁵ 1 Faigman, *supra* note 112, § 2-5.0.

case law and statutes is chiefly on the future. Just as science has forged guidelines for external validity, the future effect of law has caused the development of major doctrines concerned with precedent and statutory construction, both of which furnish guidelines for the general application of discrete decisions and enactments.¹¹⁶ There are occasions when statutory law is focused only on particular events, but these situations are highly controversial. Indeed, the Constitution itself forbids Congress to pass a “bill of attainder or ex post facto law,”¹¹⁷ both of which single out particular situations for discrete, rather than general treatment. Obviously, laws made only for particular events can easily be the vehicles for the expression of bias.

C. General Science as Law-Like

The aspect of generality is thus common to some science and most law, and lends credibility to both. This similarity between general science and general law leads us to propose that it is plausible on occasion to treat general science as law-like. Our criteria for determining those occasions are frankly pragmatic: Treat generalizable science as “authority”—i.e., as precedent is treated in a common law system—when an efficient process will be enabled to produce a just result. For this purpose, our definition of an efficient process is one that yields valid scientific conclusions without wasteful redundancy, and our definition of a just result is one that treats like cases alike.¹¹⁸ Our proposal for law-like treatment of generalizable science does not prevent accommodation to change in

¹¹⁶ See generally Hart & Sacks, *supra* note 108, at 113–30 (discussing the definition of law); *id.* at 350–97 (discussing the role of precedent in the common law system). Law is defined as general, directive, and authoritative. See *id.* at 113–14. A system of law must possess “institutions authorized to reach additional general understandings for handling new problems.” *Id.* at 113. When directive, law must “speak out of the past to the present.” *Id.* As authority, laws must “project . . . into the future . . . on the hope that in their ultimate operation . . . [they] will prove to be sufficiently sensible and workable to command at least that minimum of assent which is necessary for the maintenance of public authority.” *Id.* at 114.

¹¹⁷ U.S. Const. art. I, § 9, cl. 3.

¹¹⁸ See Hart & Sacks, *supra* note 108, at 399 (“Adjudication can be effective only when it is attended by that minimum, formal rationality which demands a like treatment of like cases.”); see also Richard A. Posner, *An Economic Approach to the Law of Evidence*, 51 *Stan. L. Rev.* 1477, 1535–42 (1999) (discussing the costs of expert testimony and the economic impact on litigation).

scientific results. Inevitably, science changes over time just as law changes over time, and so reception of new scientific developments is inherent in our model.¹¹⁹

Our proposed approach is supported by a remarkable series of events in the Fifth Circuit involving claims for damages alleged to be caused by the drug Bendectin.¹²⁰ The drug was produced by the Wm. S. Merrell Co. (now Merrell Dow Pharmaceuticals) and was prescribed for nausea during pregnancy.¹²¹ Some of the women who had taken Bendectin delivered children with birth defects, and eventually thousands of law suits were filed claiming that in utero prenatal ingestion of the drug caused the defects.¹²²

The issue of general causation was repeatedly litigated, with conflicting results.¹²³ One of the Bendectin cases was *Brock v. Merrell Dow Pharmaceuticals*.¹²⁴ The plaintiffs filed a diversity suit in the U. S. District Court for the Eastern District of Texas on behalf of their daughter to recover damages from Merrell Dow for birth defects allegedly caused by maternal prenatal use of Bendectin.¹²⁵ The issue of general causation was vigorously litigated with testimony by several experts. At the close of all the evidence Merrell Dow moved for a directed verdict claiming there was no credible evidence of general causation, but the motion was denied, and the jury ultimately found for the plaintiffs, awarding both compensatory and punitive damages. Merrell Dow then moved for judgment notwithstanding the verdict, and that motion was also denied, so the company appealed.¹²⁶

¹¹⁹ See, e.g., Heidi Li Feldman, Science and Uncertainty in Mass Exposure Litigation, 74 Tex. L. Rev. 1, 16 (1995) ("As scientists acquire new data and change their collective judgments about which background assumptions to hold constant, they revise and replace even well-established scientific theories. Scientific theory does not achieve absolute finality.") (footnote omitted).

¹²⁰ For an overview of Bendectin litigation, see Michael D. Green, Bendectin and Birth Defects: The Challenges of Mass Toxic Substances Litigation (1996); Joseph Sanders, Bendectin on Trial: A Study of Mass Tort Litigation (1998).

¹²¹ See Green, *supra* note 120, at 62, 91.

¹²² See *id.* at 17-18.

¹²³ See *id.* at 328 ("[A]pproximately 40 percent of all juries found for plaintiffs.").

¹²⁴ 874 F.2d 307 (5th Cir. 1989), as modified at 884 F.2d 166 (5th Cir. 1989), cert. denied, 494 U.S. 1046 (1990).

¹²⁵ See *id.* at 308. The child suffered from Poland's Syndrome, which is a limb reduction defect.

¹²⁶ See *id.* at 308.

The Fifth Circuit held that the motion for judgment notwithstanding the verdict should have been granted and ordered that the suit be dismissed.¹²⁷ In reaching this result the appeals court undertook a direct analysis of both epidemiological research and animal studies bearing on the issue of causation and found the research did not provide a sufficient scientific basis to find general causation.¹²⁸ In conclusion, the court remarked: "We expect that our decision here will have a *precedential* effect on other cases pending in this circuit which allege Bendectin as the cause of birth defects."¹²⁹ The court added—quite correctly, in our view—that the decision should not "stand as a bar to future Bendectin cases in the event that new and conclusive studies emerge which would give a jury a firmer basis on which to determine the issue of causation."¹³⁰

In a similar action, *LeBlanc v. Merrell Dow Pharmaceuticals*,¹³¹ a woman who suffered from the same birth defects claimed damages because her mother had taken Bendectin during pregnancy.¹³² Merrell Dow filed a motion for summary judgment, relying primarily on the *Brock* case.¹³³ The district court granted Merrell Dow's motion, finding "that plaintiff has failed to distinguish *Brock* in any material way or to show that statistically significantly [sic] epidemiological studies have emerged since *Brock* that would enable a reasonable jury to find for plaintiff on the issue of causation."¹³⁴

Thus, the *LeBlanc* court granted summary judgment for the defendants because it chose to treat the *Brock* court's resolution of the general causation issue as a type of authority. Yet the material given precedential effect was the result of scientific inquiry.

IV. APPLICATION OF THE MODEL

In this Part we treat general science as law-like to propose a comprehensive procedure for using science panel results that will reduce conflict and redundancy. For convenience, we write with re-

¹²⁷ See *id.* at 315.

¹²⁸ See *id.* at 311–15.

¹²⁹ *Id.* at 315 (emphasis added).

¹³⁰ *Id.*

¹³¹ 932 F. Supp. 782 (E.D. La. 1996).

¹³² See *id.* at 782.

¹³³ See *id.* at 783.

¹³⁴ *Id.* at 784.

spect to federal courts, but much of what we suggest could be easily adopted by state courts as well. First, we outline a procedure for district court response to panel results and then describe appellate review of district court determinations. In the last section of this Part we suggest how a panel's results should be brought to bear in collateral cases. The Supreme Court decisions in *Amchem Products v. Windsor*¹³⁵ and *Ortiz v. Fibreboard Corp.*¹³⁶ have surely reduced the option of widespread settlement in mass tort cases.¹³⁷ These decisions shift the focus to adjudication and to the necessity of crafting procedures for efficient and just outcomes. The suggestions which follow respond, in part, to this new imperative.

A. Trial Court Procedure

1. Source of Power

The first step in our proposed trial court procedure is the choice of a source of authority for appointing a science panel. There are at least four potential sources of power to name science panels.¹³⁸

The salient choice is Federal Rule of Evidence 706 which is titled "Court Appointed Experts."¹³⁹ The object of the power, the expert, is described throughout the Rule as a "witness," and the Rule expressly grants to the parties a right to depose anyone appointed.¹⁴⁰ The Rule also provides that "the witness may be called to testify by the court or any party," and provides for cross-examination.¹⁴¹ Judge Pointer cited Federal Rule of Evidence 706 as the source of his authority to appoint the National Science Panel in the breast implant litigation.¹⁴²

¹³⁵ 521 U.S. 591 (1997).

¹³⁶ 119 S. Ct. 2295 (1999).

¹³⁷ See *supra* note 6 and accompanying text.

¹³⁸ See generally Joe S. Cecil & Thomas E. Willging, *Accepting Daubert's Invitation: Defining a Role for Court-Appointed Experts in Assessing Scientific Validity*, 43 *Emory L.J.* 995, 998-1004 (1994) (discussing the authority of courts to appoint experts under either Rule 706 or under the inherent authority of the court); Joe S. Cecil & Thomas E. Willging, *Fed. Jud. Ctr., Court-Appointed Experts*, in *Reference Manual on Scientific Evidence* 525, 531-34 (1994) (explaining sources of authority to appoint an expert).

¹³⁹ Fed. R. Evid. 706.

¹⁴⁰ See Fed. R. Evid. 706(a).

¹⁴¹ *Id.*

¹⁴² See Order No. 31, *supra* note 1, at 1.

A second source of authority to appoint a science panel is Federal Rule of Evidence 104. That rule, titled "Preliminary Questions," provides in 104(a) that "[p]reliminary questions concerning the qualification of a person to be a witness . . . or the admissibility of evidence shall be determined by the court."¹⁴³ The section continues by providing that the court, under the rule, "is not bound by the rules of evidence except those with respect to privileges."¹⁴⁴ Judge Jones cited Federal Rule of Evidence 104(a) as the source of his power to name the Oregon "technical advisors."¹⁴⁵

A third source of authority is Federal Rule of Civil Procedure 53, which provides that a court may appoint a special master.¹⁴⁶ Federal Rule of Civil Procedure 53(b) states that "reference to a master shall be the exception and not the rule" and also provides that in jury cases "a reference shall be made only when the issues are complicated."¹⁴⁷ Neither Judge Pointer nor Judge Jones used Federal Rule of Civil Procedure 53 to appoint science panels.¹⁴⁸

Finally, there is general agreement that courts have "inherent" authority to appoint advisors incidental to the duty to decide cases.¹⁴⁹ In the Oregon breast implant litigation Judge Jones referred to an "inherent" authority,¹⁵⁰ but he later directly cited

¹⁴³ Fed. R. Evid. 104(a).

¹⁴⁴ Id.

¹⁴⁵ *Hall v. Baxter Healthcare Corp.*, 947 F. Supp. 1387, 1392 n.8 (D. Or. 1996).

¹⁴⁶ See Fed. R. Civ. P. 53.

¹⁴⁷ Fed. R. Civ. P. 53(b).

¹⁴⁸ See *Hall*, 947 F. Supp. at 1392 n.8 (D. Or. 1996) (referencing the appointment of scientific advisors by Judge Jones in Oregon under the authority of Federal Rule of Evidence 104); Order No. 31, *supra* note 1, at 1 (ordering the appointment of the National Science Panel under Federal Rule of Evidence 706). Judges Weinstein and Baer took the first step in appointing special masters at another stage in the New York federal breast implant litigation. Three special masters were appointed to "supervise, organize and coordinate the work of the experts." New York Judges, *supra* note 34.

¹⁴⁹ See *Goetz v. Crosson*, 967 F.2d 29, 37 (2d Cir. 1992) (Van Graafeiland, J., concurring in part and dissenting in part) (discussing the appointment of expert witnesses at the discretion of the judge); *Scott v. Spanjer Bros.*, 298 F.2d 928, 930-31 (2d Cir. 1962) (discussing the "well-accepted" power and duty of a judge "to seek impartial assistance" when necessary).

¹⁵⁰ See *Hall*, 947 F. Supp. at 1392 (D. Or. 1996) (discussing invocation of Judge Jones's "inherent authority as a federal district court judge to appoint independent advisors").

Federal Rule of Evidence 104(a) as the basis for naming “technical advisors.”¹⁵¹

The scientific authority model suggests that Federal Rule of Civil Procedure 53, which gives the district court power to appoint special masters, should be used as the source of power. Of the four potential sources of power to appoint science panels, only Rule 53 plainly permits law-like treatment of results. Rule 53’s specification of reporting requirements refers to “conclusions of law,”¹⁵² and numerous cases support the proposition that special masters may report legal conclusions.¹⁵³

2. District Court Review of Panel Results

When a science panel reports to the district court, we propose that the court should consider the report *de novo*, as suggested by Rule 53 precedents,¹⁵⁴ and either accept or reject the panel’s conclusions. If the panel is unanimous, the court should remain free to reject the findings. Likewise, if the panel is divided, the court should be free to accept either point of view.

For some, this specification of the judge role will suggest that the parties will be denied the right to jury trial. A party, it could be ar-

¹⁵¹ See *id.* at 1392 n.8 (discussing the appointment of the technical advisors under Fed. R. Evid. 104 in order “[t]o keep the advisors independent of any ongoing proceedings”). Judge Jones rejected the arguments of some plaintiffs to appoint experts under Rule 706 to avoid subjecting advisors to deposition and trial testimony as contemplated in the Rule. See *id.*

¹⁵² Fed. R. Civ. P. 53(e). The Rule provides that at the conclusion of the master’s performance of assigned acts as provided in the order of reference, the master is directed to “prepare a report upon the matters submitted to the master . . . and, if required to make findings of fact and conclusions of law, the master shall set them forth in the report.” *Id.*

¹⁵³ See, e.g., *Spaulding v. Univ. of Washington*, 740 F.2d 686, 691–92 (9th Cir. 1984) (approving the assignment of findings of fact, conclusions of law, and disposition to a special master in a gender discrimination suit), cert. denied, 469 U.S. 1036 (1984); *Rogers v. Societe Internationale Pour Participations Industrielles et Commerciales*, 278 F.2d 268, 270 (D.C. Cir. 1960) (discussing the appointment of a special master for “the determination and findings of all issues of fact and law” in an action brought by a Swiss holding company for violation of the Trading with the Enemy Act), cert. denied, 364 U.S. 895 (1960); *International Nickel Co. v. Ford Motor Co.*, 166 F. Supp. 551, 552 (S.D.N.Y. 1958) (noting appointment of a special master to make findings of fact and law in a patent infringement case).

¹⁵⁴ See 9 James Wm. Moore et al., *Moore’s Federal Practice* § 53.13[3][d][i][B] (3d ed. 1999).

gued, has a Seventh Amendment right to have the “factual” issue of general causation determined by a jury, not a judge. Our first response is to recall that our proposal incorporates a law-like rather than a fact-like view of the panel results which, we argue on functional grounds, should be applied throughout the process, including specification of the judge-jury relationship. This approach is congenial with at least some views of the Seventh Amendment which propose a functional analysis, essentially suggesting that a jury trial right be recognized in those circumstances where jury decision-making is likely to be effective.¹⁵⁵ The evaluation of scientific research is probably not such an area.¹⁵⁶ Finally, we note that one federal circuit has frankly recognized an exception to the Seventh Amendment right to jury trial when the complexity of a lawsuit would prevent a jury from performing its task of rational decision-making.¹⁵⁷

If the court accepts a conclusion that there is a scientific basis for linking exposure to the harm alleged—i.e., if the district court concludes that general causation indeed exists—the district court should consider certifying this determination for immediate appellate review, as discussed below.¹⁵⁸ After either an appellate decision affirming the district court’s acceptance of a science panel conclusion in support of general causation, or in the absence of an appeal after acceptance, the next logical question is whether specific causation is present.¹⁵⁹ This question is utterly lacking in generality and

¹⁵⁵ See *Ross v. Bernhard*, 396 U.S. 531, 538 n.10 (1970) (describing as one of several factors in determining the existence of a right to a jury trial “the practical abilities and limitations of juries”).

¹⁵⁶ See *Standards Relating to Trial Courts* § 2.10 cmt. at 23–26 (1987) (discussing the appropriate scope of the jury’s role in civil cases, but not including the evaluation of scientific research within that scope).

¹⁵⁷ See *In re Japanese Elec. Prods. Antitrust Litig.*, 631 F.2d 1069, 1086 (3d Cir. 1980). But see *In re U.S. Fin. Sec. Litig.*, 609 F.2d 411, 419–31 (9th Cir. 1979) (rejecting the arguments that form the basis of the Third Circuit’s complexity exception and favoring methods designed to clarify the information submitted to the jury over limitations on the jury’s role), cert. denied sub nom., *Gant v. Union Bank*, 446 U.S. 929 (1980).

¹⁵⁸ See *infra* note 164 and accompanying text.

¹⁵⁹ See Linda A. Bailey et al., *Federal Judicial Center, Reference Guide on Epidemiology*, in *Reference Manual on Scientific Evidence* 121, 167 (1994). In breast implant cases, “the plaintiff must show not only that implants are capable of causing harm in some people (general causation) but also that the plaintiff’s individual harm was caused by implants (specific causation). . . . [P]roof of general causation cannot

hence should be treated in all respects as a question of fact, meaning that the jury, rather than the court, should decide the question of specific causation.¹⁶⁰

Does this mean that expert testimony about general causation—a predicate for finding specific causation—must be heard by the jury, creating a costly redundancy? The scientific authority view suggests a procedure that will avoid this redundancy. Just as the judge communicates conclusions of law to the jury by instruction, the judge should communicate the law-like conclusions of general science to the jury by instruction. More specifically, the district court should instruct the jury that the science panel did find a scientific basis for general causation and provide detail from the panel's report sufficient to establish the conclusion's relevancy for the jury's task. As we have suggested elsewhere with respect to social science materials,¹⁶¹ such a "framework" treatment would effectively balance the law-like and factual aspects involved in the use of general research conclusions to determine case-specific issues.

If, on the other hand, the district court accepts a conclusion that there is no scientific basis for general causation, the stage is set for termination of the case by summary judgment in favor of the defendant pursuant to Federal Rule of Civil Procedure 56. The district court's acceptance of the panel's conclusion would, according to our proposal, determine that the defendant is "entitled to a judgment as a matter of law."¹⁶² As discussed above, this procedure was suggested by the Fifth Circuit in *Brock v. Merrell Dow Pharmaceuticals*, and was followed by the district court in the

resolve the specific causation issue." 3 Faigman, *supra* note 3, § 41-1.4.7 (footnote omitted).

¹⁶⁰ See Stephen A. Weiner, *The Civil Jury Trial and the Law-Fact Distinction*, 54 Cal. L. Rev. 1867, 1869-70 (1966) ("[L]aw involves the formulation in general terms of principles potentially applicable to many civil cases . . ." A question of fact focuses more specifically on what actually occurred in a particular case. Moreover, a question of fact can be defined "so as to delimit those issues which clearly fall within the province of the jury.").

¹⁶¹ See generally Laurens Walker & John Monahan, *Social Frameworks: A New Use of Social Science in Law*, 73 Va. L. Rev. 559 (1987) (identifying and analyzing how general social science results are used by courts to construct a background context for deciding factual issues important to the resolution of a specific case).

¹⁶² Fed. R. Civ. P. 56(c).

subsequent case of *LeBlanc v. Merrell Dow Pharmaceuticals*, which terminated with a summary judgment for the defendant.¹⁶³

B. Appellate Court Procedure

Appellate courts would play a key role in our proposal. If the trial court accepts a panel conclusion that there is a scientific basis for general causation, we propose that the trial court should certify the determination for immediate review as a “controlling question of law” pursuant to 28 U.S.C. § 1292(b)¹⁶⁴ and that the court of appeals should accept the certification to provide a further review of science panel conclusions. On the other hand, if the district court accepts a conclusion that there is no scientific basis for general causation and subsequently grants summary judgment for the defendant, appellate review should occur by right according to the final judgment rule.¹⁶⁵ In either case, appellate review of the panel conclusions should be *de novo*,¹⁶⁶ the same standard by which we propose that a district court evaluate a science panel’s findings.

This approach is, of course, contrary to the Supreme Court’s recent decision in *General Electric Co. v. Joiner*¹⁶⁷ where the Court held that the standard for appellate review of trial court decisions to admit or exclude expert testimony under the *Daubert v. Merrell Dow Pharmaceuticals*¹⁶⁸ gatekeeping rules should be abuse of discretion.¹⁶⁹ There has been cogent criticism of the *Joiner* rule,¹⁷⁰ a view which we share. *Joiner*, however, poses no problem for our proposal because it is distinguishable. Determinations about scientific authority, according to our proposal, are not about the

¹⁶³ See *supra* notes 124–134 and accompanying text.

¹⁶⁴ See 28 U.S.C. § 1292(b) (1994) (providing that a court of appeals may accept or reject cases certified by a district court for interlocutory appeal).

¹⁶⁵ See 28 U.S.C. § 1291 (1994) (providing for right to appeal after a final judgment).

¹⁶⁶ See *NLRB v. Trailways*, 729 F.2d 1013, 1017–18 (5th Cir. 1984) (explaining that the Courts of Appeal conduct *de novo* review of a master’s findings of law); *Becker v. Loew’s, Inc.*, 133 F.2d 889, 894 (7th Cir. 1943) (noting that when the finding of the master is a determination of law that “it is subject to judicial review, and . . . [the] duty [of the Court of Appeals] is . . . to provide a real review”).

¹⁶⁷ 522 U.S. 136 (1997).

¹⁶⁸ 509 U.S. 509 (1993).

¹⁶⁹ See *Joiner*, 522 U.S. at 138–39.

¹⁷⁰ See generally David L. Faigman, *Appellate Review of Scientific Evidence Under Daubert and Joiner*, 48 *Hastings L.J.* 969 (1997) (arguing for active appellate review of scientific evidence and research).

admissibility of evidence, which is the focus of *Daubert*. Rather, the determinations at issue are about the use of generalizable scientific research to address questions of general causation in a fair and efficient manner. Thus, the *Daubert* gatekeeping task is not part of a science panel's work and a district court's response to the panel's conclusions is likewise not a *Daubert* decision.¹⁷¹

C. Collateral Cases

Thus far we have outlined our proposal only with respect to those cases in which a science panel is directly employed. But the greatest benefits in terms of efficiency and justice would occur in collateral or other cases involving the same question of general causation. In this situation, the scientific authority model permits the use of doctrines of precedence to reduce redundancy and encourage courts to decide similar cases similarly.

For example, the response of a district court to science panel conclusions would be locally persuasive,¹⁷² and perhaps would have some national significance. Indeed, since scientific questions are neither "federal" nor "state" questions in the traditional sense, we suggest that state courts should regard such conclusions as precedent worthy of careful investigation. The converse should also be true. In other words, if a state court has done the science first, federal courts should consider the results authority worthy of careful study.

The response by a court of appeals would constitute the "law of the circuit"¹⁷³ with respect to the general causation issue, and would have considerable precedential significance throughout the nation. Here again, we suggest that state courts should approach the results as authority. Beginning with the district court, each level of response would furnish increasing efficiency and justice because

¹⁷¹ In cases of great national importance, a condition common in toxic tort litigation, the Supreme Court should grant certiorari to review lower court response to science panel conclusions. Just as with other questions of law, a variety of responses by the courts of appeal might enable better decisions by the high court, but the Court should consider taking a truly exceptional scientific authority issue before a final decision in the court of appeal pursuant to 28 U.S.C. § 1254 (1994). Section 1254 provides for Supreme Court jurisdiction by writ of certiorari before or after judgment or by certification "at any time by a court of appeals." *Id.*

¹⁷² See 18 Moore, *supra* note 154, § 134.02[1][d].

¹⁷³ See 18 *id.* § 134.02[2].

redundancy of proof would be increasingly eliminated and courts would be encouraged to decide similar cases similarly.¹⁷⁴

V. BEYOND BREAST IMPLANT LITIGATION

The first National Science Panel was a product of the breast implant litigation, but science panels could surely be employed in cases involving other subjects. Here again, for convenience we have chosen federal examples, but the implications for state law will be easy to see. Likewise, our proposals for the use of panel results are not limited to cases involving breast implants. For example, consider the current litigation claiming damages for exposure to emissions from the Hanford Nuclear Reservation. *In re Hanford Nuclear Reservation Litigation*¹⁷⁵ involved approximately 3,000 plaintiffs who claimed present or future injury as a result of exposure to radioactive and non-radioactive emissions from the Hanford Nuclear Reservation.¹⁷⁶ The suit was filed in 1991 under the Price-Anderson Act against eight corporate defendants who had operated the facility for the federal government.¹⁷⁷

In 1998, after “exhaustive review of the scientific evidence,”¹⁷⁸ the district court, acting as a *Daubert* gatekeeper, decided that most of plaintiffs’ expert testimony on general causation should be excluded, and granted summary judgment for defendants in most cases.¹⁷⁹ The plaintiffs appealed.¹⁸⁰

During the appeal in *Hanford*, the same district judge turned to *In re Berg* which involved more than 1,000 plaintiffs who also claimed damages allegedly caused by Hanford emissions.¹⁸¹ In the *Berg* case, the plaintiffs asked the court to stay further proceedings

¹⁷⁴ A Supreme Court response would bind all federal courts and would be persuasive in the states. See 18 *id.* § 134.02[4][a]. Indeed, we suggest that a Supreme Court decision determining favorably the validity of panel results ought to be followed throughout the nation.

¹⁷⁵ No. CY-91-3015-AAM, 1998 WL 775340 (E.D. Wash. Aug. 21, 1998).

¹⁷⁶ See *id.* at *2.

¹⁷⁷ See *id.* at *1-*4.

¹⁷⁸ *Id.* at *328.

¹⁷⁹ See *id.* at *328-31.

¹⁸⁰ See *id.*

¹⁸¹ See *Hanford Judge Denies Defense Request to Apply Doubling Dosage Standard to 1,100 Berg Claims*, 7 No. 16 *Mealey’s Emerging Toxic Torts* 12 (Nov. 20, 1998) available in Westlaw, METT database.

until *Hanford* was resolved on appeal, and the defendant in *Berg* moved for summary judgment based on the trial court decision in *Hanford*.¹⁸² Surprisingly, the district court denied both motions and indicated that process of determining the general causation issue would be litigated de novo.¹⁸³

This plan obviously involves costly redundancy and, at least theoretically, the possibility of a result different from the outcome in *Hanford*. The use of a science panel in this situation, coupled with a procedure based on the scientific authority concept, would yield a very different treatment. A decision by the district court accepting a panel conclusion that there was no scientific basis for general causation would have precedential value in that court, subject to a later evaluation by the court of appeals. In this situation, practical considerations suggest a stay pending court of appeals action, and then either summary judgment for defendants or a trial on the issue of specific causation as proposed above. This treatment would eliminate redundancy and prevent courts from treating similar cases differently.

CONCLUSION

The appointment of the first National Science Panel and the completion of its work is potentially a major achievement in American law. But the success cannot be realized until an efficient and just procedure is found for using the Panel's results. Thus far, no such procedure has emerged and realization of the achievement is in doubt. In order to solve this problem, we have proposed a scientific authority model and argued that where the results of scientific research are generalizable, these results should be treated as law-like for the purpose of determining the use of science panel results. Our model yields a comprehensive procedure that we argue will both eliminate costly redundancy of proof and encourage courts to decide similar cases similarly, thereby promoting efficient and just results. Although our proposals grow out of developments in the breast implant litigation, our scientific authority model and resulting procedure can be applied in litigation involving other subjects, as we have illustrated by applying it to cases involving

¹⁸² See *id.*

¹⁸³ See *id.*

emissions from the Hanford Nuclear Reservation. Our proposal is not intended to favor either plaintiffs or defendants, but is intended to ensure that the science panel innovation produces a benefit for all litigants and for the public.

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