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Introduction to the Symposium

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SCIENCE FOR JUDGES IX

*Margaret A. Berger**

The papers that follow are extended remarks of presentations made at the ninth and final Science for Judges program held at Brooklyn Law School on April 13 and 14, 2007. These twice yearly conferences, generously funded by the Common Benefit Trust established in the Silicone Breast Implant Products Liability Litigation, began in March 2001. Their objective was to assist judges in their difficult task of evaluating the admissibility of highly complex and specialized expert testimony. Despite supplying most of the monetary resources that made these programs possible, the Trust was scrupulous in playing no role with regard to the programs' contents, or in the selection of speakers.

The programs were held under the auspices of Brooklyn Law School's Center for Health, Science and Public Policy in collaboration with the Federal Judicial Center, the National Center for State Courts, and the Committee on Science, Technology and Law of the National Academies of Science. Judges from every federal circuit and more than 36 states participated in these conferences.

Many of the presentations at prior Science for Judges programs focused on issues pertinent to proving causation in pharmaceutical and environmental litigation. This emphasis was largely due to the judicial community's interest in the *Daubert* trilogy, a series of three opinions by the United States Supreme Court on proving causation.¹ The first case, *Daubert v. Merrell Dow*

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¹ *Kumho Tire Co. v. Carmichael*, 522 U.S. 137 (1999); *General Electric v. Joiner*, 522 U.S. 136 (1997); *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579 (1993). See Margaret A. Berger, *The Supreme Court's Trilogy on the Admissibility of Expert Testimony*, in REFERENCE MANUAL ON SCIENTIFIC

Pharmaceuticals, Inc., a toxic tort case, in which proof of causation was crucial, was undoubtedly the chief impetus for the Science for Judges programs. In its opinion, the Supreme Court obligated federal trial judges to screen proffered expert opinions for scientific validity. In order to exercise this “gatekeeper” function when scientific testimony is proffered, judges need to understand scientific methodology. Although *Daubert* applied only in federal courts, it has been adopted by many states and has clearly had an impact on the treatment of expert testimony in all jurisdictions.²

The previous Science for Judges programs discussed a broad range of topics that had a bearing on toxic tort cases. Some presentations dealt specifically with the science used to prove causation, such as epidemiology and toxicology; others programs looked at particular litigations, such as those involving asbestos and Agent Orange; and still others looked at a wide variety of peripheral subjects that nevertheless affect science in a courtroom, subjects as diverse as conflicts of interest in academia, preemption, the handling of data, the role of the FDA and EPA, and evidence-based medicine. Other programs focused on the interaction of science and law outside the toxic tort context; there were, for instance, programs on forensic science, the impact of *Daubert* on administrative agencies, and the admissibility of evidence that relates to human behavior.³

EVIDENCE 9 (Federal Judicial Ctr. ed., 2d ed. 2000).

² See David E. Bernstein & Jeffrey D. Jackson, *The Daubert Trilogy in the States*, 44 JURIMETRICS J. 351 (2004).

³ Papers from previous Science for Judges programs can be found at 12 J.L. & POL’Y 1, 1–53 (2003) (papers discussing the practice of epidemiology and the science produced by administrative agencies); 12 J.L. & POL’Y 485, 485, 485–639 (2004) (papers discussing toxicology and epidemiology); 13 J.L. & POL’Y 1, 1–179 (2005) (papers discussing the integrity of scientific research and forensic evidence in criminal proceedings); 13 J.L. & POL’Y 499, 499–647 (2005) (papers discussing Agent Orange and human behavior research); and 14 J.L. & POL’Y 1, 1–209 (2006) (papers discussing risk assessment dealing with expert proof of causation in toxic tort cases and issues relevant to the availability of data); 14 J.L. & POL’Y 525, 525–616 (2006) (papers discussing evidence-based medicine); 15 J.L. & POL’Y 1, 1–164 (2007) (papers discussing the evidence of causation as well as current issues and standards of forensic laboratories); 15 J.L. & POL’Y 983, 983–1223 (papers discussing the regulation

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Because the April 2007 program would be the last, we sought to design a program that would provide a fitting close. We had two-overarching goals. First, we wished to touch base once again with issues about *Daubert* and causation. Second, we wanted to use a format that would allow participants to engage more actively with the types of materials that judges must evaluate when science enters the courtroom.

The first topic discussed at Science for Judges IX was juries. Questions about jury competence to decide complex scientific issues lurk in the background of *Daubert*. When *Daubert* hearings result in the exclusion of plaintiff's experts, a court often grants summary judgment; this of course means that no jury will hear the case or render a verdict. In such cases, the result is identical to that which could be reached through a complexity exception to the Seventh Amendment, a path that to date the Supreme Court has not endorsed.⁴ *Daubert* has therefore operated to deflect direct attacks on the meaning of the Seventh Amendment.

Juries are of interest not only because of the effect issues of jury competency may have on *Daubert* jurisprudence. Not infrequently, judges must rule on whether an expert may testify to opinions based on social science research. The reliability requirement of *Daubert* was extended to all experts by the *Kumho* case so that judges must know how to evaluate studies such as those currently being done on how juries function.

The Science for Judges program was extremely fortunate that Professors Valerie P. Hans and Shari Seidman Diamond, two of the most distinguished scholars in the field of jury research, spoke at the program held at Brooklyn Law School and in addition submitted articles that appear below.

Professor Hans' designed an ingenious experiment that sought to achieve a number of objectives: to compare the abilities of judges versus jurors, to explain something to judges about study design, and to engage judges in an interactive learning exercise about a

of pharmaceuticals and the scientific issues regarding asbestos litigation). All papers are available in electronic form at <http://brooklaw.edu/centers/scienceforjudges/papers.php>.

⁴ *But see* Markman v. Westview Instruments, 517 U.S. 370 (1996) (in patent infringement actions construction claims to be decided by court not jury).

complex scientific subject, mitochondrial DNA. Her article, *Judges, Juries, and Scientific Evidence*,⁵ describes how this was done and furnishes a number of important insights on how juries function vis a vis judges. She repeated with the participants at the program an experiment that had originally been done through a jury study at a mock trial. I do not want to give further details about what she and the judges at the program achieved together because she tried a unique approach that can best be experienced through her words rather than mine. In addition, her article furnishes an excellent introduction to the literature on jury competence in complex cases.

Professor Shari Seidman Diamond's article reports conclusions that have been reached in empirical studies of juries.⁶ She also reports on findings that have emerged from a multi-faceted study of juries in the state of Arizona where she has been given permission to observe actual jury deliberations. She examines a number of techniques that Arizona adopted that were aimed at facilitating jury performance. Some of these, which Professor Diamond discusses, were specifically designed to enable jurors to deal more effectively with expert testimony. Her findings indicate that a number of simple measures could improve jury comprehension.

Professor Diamond's discussion also touches on an important circumstance that is often ignored in comparisons of the abilities of judges and jurors. Although some jurors may lack the education required to understand scientific testimony, other jurors may have relevant skills that surpass that of the judge.⁷ Both Professors Diamond and Hans note that jurors can learn from each other, and that accordingly a jury is potentially as competent as its most highly qualified member. Looking at the lowest common denominator does a disservice to how jurors function. Taken together, the two articles offer a thoughtful rebuttal to critics of the jury system who are convinced that lay jurors are incapable of discharging their constitutional obligations.

The final two articles published in connection with Science for

⁵ 16 J.L. & POL'Y 19 (2007).

⁶ Shari Seidman Diamond, *How Jurors Deal with Expert Testimony and How Judges Can Help*, 16 J.L. & POL'Y 47 (2007).

⁷ *Id.* at 63–64.

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Judges IX return to the problems that are encountered when trying to show that adverse health effects are the result of an exposure to toxic substances. Dr. John Howard, the Director of the National Institute for Occupational Safety and Health, and the Coordinator of the World Trade Center Health Programs, United States Department of Health and Human Services, sets out in detail the contours of a problem that may occupy the legal system for years to come. His article, *The World Trade Center Disaster: Health Effects and Compensation Mechanisms*,⁸ examines the many different exposures to toxic materials that occurred as a consequence of the terrible events of September 11, 2001. He also considers the difficulties in determining who was exposed and the effect of the exposures on a variety of subpopulations, consisting of responders who came to assist, transients who were in the vicinity on the day of the attack, and residents and school children who were in the neighborhood of Ground Zero on and after September 11. Dr. Howard also discusses the various compensation schemes that came into play and the tort actions that were instituted by some of those exposed, and he analyzes the complex causation and compensation issues that are likely to arise and will have to be explored in the years to come. By furnishing this detailed account, Dr. Howard has provided a foundation for further study of the medical, legal and political ramifications of September 11. His report should be of enormous interest not only to those who are actively involved in grappling with the enormous problems and uncertainties that exist more than seven years after the attack, but also to those who are seeking to find lessons to apply if some future disaster ensues.

Professor Richard Scheines' article, *Causation, Statistics and the Law*,⁹ presents a remarkably clear account of the nature of causal claims. Professor Scheines' discussion contains numerous examples and illustrations that make a highly complex subject based on statistical reasoning much more comprehensible. While Dr. Howard's article describes a fact pattern that is unfortunately not hypothetical, the Scheines article explains how the issue of

⁸ 16 J.L. & POL'Y 69 (2007).

⁹ 16 J.L. & POL'Y 135 (2007).

causation should be approached by employing numerous hypotheticals that make clear just how difficult it will be to resolve some of the questions Dr. Howard raises. Professor Scheines bases some of his discussion on a hypothetical that was distributed to participants at the live program as part of the effort to encourage a more interactive approach. The hypothetical, to which Professor Scheines makes a number of references, is reprinted in its entirety at the end of these articles.

As this is my last opportunity to do so, I want to express my gratitude to the Advisory Board that assisted in the planning of these programs and whose members spoke at some of the sessions. Many thanks to the Hon. Shirley Abrahamson, Chief Justice, Wisconsin; Dr. Joe Cecil, Project Director, Program on Scientific and Technical Evidence, Division of Research, Federal Judicial Center; Professor Joel E. Cohen, Abby Rockefeller Mauzé Professor and Head of the Laboratory of Populations, The Rockefeller University and Columbia University; Professor Richard A. Merrill, formerly Daniel Caplin Professor of Law, University of Virginia Law School; Professor Judith Resnik, Arthur Liman Professor, Yale Law School; and the Hon. Jack B. Weinstein, United States Senior District Judge, Eastern District of New York. I also want to thank the many persons at Brooklyn Law School who helped to make these programs possible, and especially the Dean of Brooklyn Law School, Joan G. Wexler, and Professor Karen Porter, the Executive Director of Brooklyn Law School's Center for Health, Science and Public Policy, who handled many of the administrative chores required in organizing these programs.