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Setting Limits on Judicial Scientific, Technical, and Other Specialized Fact-Finding in the New Millennium

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NOTE

SETTING LIMITS ON JUDICIAL SCIENTIFIC, TECHNICAL, AND OTHER SPECIALIZED FACT-FINDING IN THE NEW MILLENNIUM

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In Kumho Tire Co. v. Carmichael, *the Supreme Court significantly broadened the scope of the judicial gatekeeping role previously set forth in* Daubert v. Merrell Dow Pharmaceuticals, Inc., *holding that federal district judges must ensure that all admitted scientific, technical, and other specialized expert testimony is both relevant and reliable. Faced with the challenge of making scientifically, technically, and legally sound admissibility determinations, many generalist trial judges will inevitably be tempted to educate themselves on the nature and substance of the complex matters requiring their attention. While some judges may rely on court-appointed technical advisors, scientific reference manuals, or privately sponsored judicial seminars for assistance, other judges may venture into cyberspace, review scientific journal articles not presented by the parties, or consult colleagues off the record. However, the extent to which judges can properly engage in such practices has become a matter of great debate and uncertainty due to the divergent teachings of* Kumho, *the* Code of Conduct for United States Judges, *28 U.S.C. §§ 144 and 455 (the federal judicial disqualification statutes), and the Federal Rules of Evidence.*

In his Note, the author examines the recently broadened scope of the judicial gatekeeping role in light of the competing ethical and legislative forces that seek to limit a judge's active involvement in the scientific, technical, and other specialized fact-finding process. The author argues that the Judicial Conference of the United States, Congress, and the Supreme Court should modify the Code of Conduct for United States Judges, *28 U.S.C. § 455, and Federal Rule of Evidence 104(a) to prohibit* sua sponte, ex parte *communications by judges who seek to acquire case-specific scientific, technical, or other specialized evidence not presented by the parties. The author contends that even if such independent factual inquiries by judges may increase the likelihood of "correct" admissibility determinations, such activities run counter to the spirit of our judicial system, which encourages the vigorous adversarial presentation of evidence and affords all parties unbiased and impartial gatekeepers.*

INTRODUCTION

As science- and technology-based litigation grows in complexity and variety,[1] federal district judges are playing an increasingly important role in manning the gates through which litigants seek to admit the testimony of highly skilled expert witnesses.[2] At the heart of this "gatekeeping" role, the United States Supreme Court in *Daubert v.*

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1 *See, e.g.*, Heller v. Shaw Indus., 167 F.3d 146 (3d Cir. 1999) (alleging that volatile organic compounds emitted from new carpet caused respiratory ailments); Baker v. Dalkon Shield Claimants Trust, 156 F.3d 248 (1st Cir. 1998) (alleging that intrauterine contraceptive device caused pelvic inflammatory disease and subsequent infertility); DePaepe v. Gen. Motors Corp., 141 F.3d 715 (7th Cir.) (alleging that defectively designed sun visor caused broken neck in automobile accident), *cert. denied*, 525 U.S. 1054 (1998); Kannankeril v. Terminix Int'l, Inc., 128 F.3d 802 (3d Cir. 1997) (alleging that pesticide treatments for carpenter ants caused wide-ranging physiological and cognitive impairments); Brock v. Caterpillar, Inc., 94 F.3d 220 (6th Cir. 1996) (alleging that defective and unreasonably dangerous braking system caused bulldozer to lose control); Benedi v. McNeil-P.P.C., Inc., 66 F.3d 1378 (4th Cir. 1995) (alleging that combination of alcohol and acetaminophen caused liver disease); Hopkins v. Dow Corning Corp., 33 F.3d 1116 (9th Cir. 1994) (alleging that silicone breast implants caused autoimmune disease); Willert v. Ortho Pharm. Corp., 995 F. Supp. 979 (D. Minn. 1998) (alleging that antimicrobial medication caused autoimmune hemolytic anemia and Guillain-Barre Syndrome); Bowers v. N. Telecom, Inc., 905 F. Supp. 1004 (N.D. Fla. 1995) (alleging that defectively designed keyboards caused cumulative trauma disorders, including carpal tunnel syndrome); Cavallo v. Star Enter., 892 F. Supp. 756 (E.D. Va. 1995) (alleging that exposure to aviation jet fuel sensitized plaintiff to chemicals and caused chronic sinusitis), *aff'd in part, rev'd in part*, 100 F.3d 1150 (4th Cir. 1996); FED. COURTS STUDY COMM., REPORT OF THE FEDERAL COURTS STUDY COMMITTEE 97 (1990) ("Economic, statistical, technological, and natural and social scientific data are becoming increasingly important in both routine and complex litigation.").

2 *See* Marilee M. Kapsa & Carl B. Meyer, *Scientific Experts: Making Their Testimony More Reliable*, 35 CAL. W. L. REV. 313, 318-19 (1999) (discussing how recent Supreme Court decisions have shifted responsibility for determining the reliability of expert testimony onto trial judges). Kapsa and Meyer note that litigants must often rely upon experts in a variety of fields to establish causation:

> [T]he proof of causation may involve five or more specialties. The plaintiff needs to prove: (a) the presence of a toxic source; (b) the emission rate of the toxic source; (c) the exposure level; (d) the toxic exposure experienced by the plaintiff; (e) the dose-response curve for the alleged toxic; and (f) the correlation between exposure and the symptoms presented by the plaintiff. The first step involves material sciences and chemistry; the second and third steps involve occupational hygiene and analytical chemistry; the third requires construction of a human exposure profile; the fourth involves molecular toxicology; and the last requires coordination between a clinical toxicologist and the plaintiff's treating physician. Each of these specialties involves different skills, and each specialist speaks a different language.

Id. at 320. Because the use of expert witnesses has become increasingly prevalent in complex litigation, some legal scholars have prepared manuals to assist practicing attorneys in effectively utilizing expert witnesses and attacking opposing witnesses. *See, e.g.*, 1 DAVID L. FAIGMAN ET AL., MODERN SCIENTIFIC EVIDENCE: THE LAW AND SCIENCE OF EXPERT TESTIMONY, at vii-ix (1997) (noting the text's goal of providing an exhaustive resource for judges and lawyers in the new world after *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993)); EDWARD J. IMWINKELRIED, THE METHODS OF ATTACKING SCIENTIFIC EVIDENCE (3d ed. 1997) (cataloguing strategies for attack on virtually every aspect of expert opinion testimony); JACK V. MATSON, EFFECTIVE EXPERT WITNESSING, at v (3d ed. 1999) (noting that the

Merrell Dow Pharmaceuticals, Inc.,[3] held that trial judges must ensure that all admitted expert scientific testimony is both relevant and reliable.[4] In the wake of *Daubert*, some commentators expressed doubts that federal district judges possess the necessary training and expertise to perform this evaluation.[5] However, on the verge of the new millennium, the Court, in *Kumho Tire Co. v. Carmichael*,[6] reaffirmed the *Daubert* Court's confidence in the capacity of judges to undertake this review. In *Kumho*, the Court significantly broadened the scope of the gatekeeping role, holding that the admissibility criteria outlined six years earlier in *Daubert*[7] apply not only to scientific experts, but to experts in technical and other specialized fields as well.[8]

With this hefty burden placed on their shoulders, many generalist trial judges will inevitably be tempted to acquire as much scientific, technical, and other specialized knowledge as possible in order to fully comprehend the nature and substance of the complex matters requiring their attention.[9] In today's information age, a vast array of educational resources exist for those judges who seek to gain knowledge in a wide range of fields such as chemistry, biology, physics, engineering, toxicology, epidemiology, and the like. In addition to ventures into cyberspace, judges may rely upon numerous other resources including, but not limited to, attendance at judicial seminars,

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third edition of the manual was written for those attorneys who "will want to fully understand the evolving rules of the game" so that their "clients can do the very best").

3 509 U.S. 579 (1993).

4 *See id.* at 589-92.

5 Regarding this difficulty, one judge noted recently:

> [A]fter serving eighteen years on the bench, including a significant amount of involvement in judicial training and education, both as a student and a faculty member, and after an additional eighteen years as a practicing lawyer and judicial law clerk involved almost daily in the court system, this writer is convinced that few judges possess the academic credentials or the necessary experience and training in scientific disciplines to separate competently high quality, intricate scientific research from research that is flawed.

George D. Marlow, *From Black Robes to White Lab Coats: The Ethical Implications of a Judge's* Sua Sponte, Ex Parte *Acquisition of Social and Other Scientific Evidence During the Decision-Making Process*, 72 ST. JOHN'S L. REV. 291, 333 (1998); *see also* Paul S. Milich, *Controversial Science in the Courtroom:* Daubert *and the Law's Hubris*, 43 EMORY L.J. 913, 919 (1994) (noting that while "[m]ost federal judges are bright individuals," the complexities of much scientific litigation are beyond their mastery in terms of "deciding what is or is not good science").

6 526 U.S. 137 (1999).

7 *See Daubert*, 509 U.S. at 593-95; *infra* note 46 and accompanying text.

8 *See Kumho*, 526 U.S. at 141.

9 *See* Marlow, *supra* note 5, at 292-93; *see also* Charles S. Claxton, *Characteristics of Effective Judicial Education Programs*, 76 JUDICATURE 11, 11-12 (1992) (noting that the complexity of the issues brought before judges are compounded by three factors: lack of technical knowledge, the difficulty in evaluating the credibility of expert witnesses, especially in the face of conflicting testimony, and judicial discretion).

conversations with court-appointed experts, contact with other judges, discussions with their law clerks, and excursions to the library.[10]

Many commentators believe that forays into the realm of scientific and technical knowledge are appropriate because the gatekeeping role requires judges to be scientifically literate.[11] However, both Congress and the Judicial Conference of the United States have set general limits on the extent to which judges may acquire potentially prejudicial knowledge.[12] Faced with the challenge of making scientifically, technically, and legally sound admissibility determinations in the wake of *Kumho*, while simultaneously upholding the integrity and independence of the judiciary by avoiding the appearance of impropriety and bias, judges must carefully maneuver down an uncharted path. Along the way, judges have little to guide them with respect to what

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10 *See, e.g.*, Jack B. Weinstein, *Limits on Judges Learning, Speaking and Acting—Part I—Tentative First Thoughts: How May Judges Learn?*, 36 ARIZ. L. REV. 539, 541 (1994) (stating that "[generalist judges] need to continue to acquire general information—much as any intelligent, well-educated person does, by reading newspapers, magazines, and books, watching television and listening to radio, taking adult education and formal college courses, attending lectures and seminars, and talking to friends and family").

11 *See, e.g.*, Paul S. Miller et al., Daubert *and the Need for Judicial Scientific Literacy*, 77 JUDICATURE 254, 254 (1994) (suggesting that the gatekeeping role outlined by the Supreme Court in *Daubert* requires at minimum "a basic level of scientific literacy"); *see also, e.g.*, David L. Faigman, *Mapping the Labyrinth of Scientific Evidence*, 46 HASTINGS L.J. 555, 579 (1995) (concluding that "although judges need not be expert enough to write scientific articles, they should be proficient enough to read them" and that "[s]uch proficiency would entail judges having a basic knowledge of statistics and research methodology"). Miller, Rein, and Bailey elaborate on the scientific literacy judges must possess to fulfill their *Daubert* duties:

> [Judges will need] a grounding in the sociology of science and the scientific method; the uses and abuses of statistics and probability theory; substantive awareness of error factors and the limitations on techniques for measurement, data retention, and detection; and specific knowledge of accepted protocols for making intelligent inquiries into the basis for proffered expert testimony on scientific techniques and in scientific fields commonly before trial courts.

Miller et al., *supra*, at 258.

12 *See* 28 U.S.C. § 455 (1994). Section 455 establishes the bases upon which a federal judge, federal magistrate, or Justice of the Supreme Court may be disqualified from presiding over a case:

> (a) Any justice, judge, or magistrate of the United States shall disqualify himself in any proceeding in which his impartiality might reasonably be questioned.
>
> (b) He shall also disqualify himself in the following circumstances:
>
> (1) Where he has a personal bias or prejudice concerning a party, or personal knowledge of disputed evidentiary facts concerning the proceeding . . . .

Id. Canon 3(C) of the *Code of Conduct for United States Judges* disqualifies judges on the same bases. *See* OFFICE OF THE GEN. COUNSEL, ADMIN. OFFICE OF THE U.S. COURTS, CODE OF CONDUCT FOR UNITED STATES JUDGES 7 (1997) [hereinafter CODE OF CONDUCT]. Section 144 of title 28 sets out the procedure litigants must follow to remove a judge for bias or prejudice. *See* 28 U.S.C. § 144 (1994); *infra* Part II.B.2.

the specific limits are in acquiring scientific, technical, and other specialized knowledge not presented by the parties in litigation.

This Note examines the recently broadened scope of the judicial gatekeeping role in light of the competing ethical and legislative forces that seek to limit a judge's active participation in determining the scientific and technical reliability of proffered expert testimony. Part I traces the historical development of the gatekeeping role and its evolution into a broad-based inquiry that grants federal district judges a significant amount of discretion in determining the reliability and relevance of proffered scientific, technical, and other specialized testimony. Part II explores the evolution and scope of the *Code of Conduct for United States Judges* and 28 U.S.C. §§ 144 and 455—the federal judicial disqualification statutes—as these ethical and legislative codes apply to the gatekeeping role. Specifically, Part III examines the beneficial and detrimental aspects of various approaches available to judges for acquiring scientific, technical, and other specificalized knowledge. Part III then argues in favor of a more limited judicial role in the fact-finding process. Part IV proposes modifications to the *Code of Conduct*, 28 U.S.C. § 455, and Federal Rule of Evidence 104(a) in order to establish more specific limits on the extent to which judges may acquire scientific, technical, and other specialized knowledge. These proposed limits would preserve the integrity of the adversarial process and help maintain an impartial and unbiased judiciary[13] in light of the modern movement promoting active judicial involvement in the fact-finding process.[14]

This Note concludes that the Supreme Court, Congress, and the Judicial Conference of the United States should limit the scope of the judicial gatekeeping role by adopting a specific set of rules that prohibit judges from acquiring potentially relevant and reliable, case-specific scientific, technical, and other specialized knowledge through self-initiated investigations and *ex parte* communications. Adherence to a strict set of rules would preserve the integrity of the adversarial system and prevent judges from becoming partial, amateur scientists who usurp the traditional fact-finding role of the jury.

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13 *See* Weinstein, *supra* note 10, at 565 ("Judges should be impartial and unbiased.").

14 *See* Marlow, *supra* note 5, at 330 ("[A] consensus has developed that trial judges faced with difficult, complex issues of science ought to be allowed, and perhaps even encouraged, to seek scientific research and other information not supplied by the attorneys . . . .").

I

HISTORICAL EVOLUTION OF THE JUDICIAL GATEKEEPING ROLE

A. *Frye v. United States* and the "General Acceptance" Standard

For much of the last century, federal district judges played a limited role in determining the admissibility of expert testimony. Until the passage of the Federal Rules of Evidence in 1975, judges faced with determining the admissibility of expert testimony relied upon the "*Frye* test" or general acceptance standard first articulated in 1923 in *Frye v. United States*:[15]

> Just when a scientific principle or discovery crosses the line between the experimental and demonstrable stages is difficult to define. Somewhere in this twilight zone the evidential force of the principle must be recognized, and while courts will go a long way in admitting expert testimony deduced from a well-recognized scientific principle or discovery, *the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs.*[16]

Proponents of the general acceptance standard believed that turning to the scientific community for guidance in determining the admissibility of expert testimony was the most effective and appropriate means for ensuring that only sound scientific evidence entered the courtroom.[17] Instead of requiring generalist trial judges to critically evaluate the testimony of highly skilled experts, courts admitted only those theories that the scientific community had generally accepted.[18]

Beginning in the latter half of the twentieth century, however, critics of the general acceptance standard attacked *Frye* for placing

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15 293 F. 1013 (D.C. Cir. 1923), *superseded by FRE 702 as stated in* Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579 (1993).

16 *Id.* at 1014 (emphasis added).

17 *See* Note, *Improving Judicial Gatekeeping: Technical Advisors and Scientific Evidence*, 110 HARV. L. REV. 941, 942 (1997) [hereinafter *Improving Gatekeeping*] ("*Frye's* general acceptance test relies on the premise that those people most qualified to understand scientific claims—the scientific community itself—should gauge the validity of those claims."); *see also* Jay P. Kesan, Note, *An Autopsy of Scientific Evidence in a Post-*Daubert *World*, 84 GEO. L.J. 1985, 1991 (1996) ("Undoubtedly, the *Frye* test survived for well over half a century because it is intrinsically well-suited to our judiciary.").

18 *See, e.g.*, United States v. Two Bulls, 918 F.2d 56, 60 (8th Cir. 1990), *order vacated and appeal dismissed*, 925 F.2d 1127 (8th Cir. 1991); Head v. Lithonia Corp., 881 F.2d 941, 943-44 (10th Cir. 1989); Brock v. Merrell Dow Pharms., Inc., 874 F.2d 307, 311-15 (5th Cir.), *modified on rehearing*, 884 F.2d 166 (5th Cir. 1989); United States v. Smith, 869 F.2d 348, 351-52 (7th Cir. 1989); Richardson v. Richardson-Merrell, Inc., 857 F.2d 823, 831-32 (D.C. Cir. 1988); United States v. Gillespie, 852 F.2d 475, 481-82 (9th Cir. 1988); Lynch v. Merrell-National Labs., 830 F.2d 1190, 1194-97 (1st Cir. 1987); United States v. Shorter, 809 F.2d 54, 60 (D.C. Cir. 1987); United States v. McBride, 786 F.2d 45, 49 (2d Cir. 1986); United States v. Metzger, 778 F.2d 1195, 1203 (6th Cir. 1985); Ellis v. Int'l Playtex, Inc., 745 F.2d 292, 304 n.15 (4th Cir. 1984); Barrel of Fun, Inc. v. State Farm Fire & Cas. Co., 739 F.2d 1028, 1029-33 (5th Cir. 1984), *abrogation recognized by* United States v. Posado, 57 F.3d 428 (5th Cir. 1995).

members of the scientific community in the position of making important legal decisions that should have been left to the discretion of the trial judge.[19] Some courts rejected *Frye* on the basis that it prevented litigants from utilizing the results of relatively new scientific studies and imposed unfair burdens on plaintiffs who sought to base their claims on novel scientific theories that were not yet published in peer-reviewed journals.[20] As litigation involving science- and technology-based controversies grew more complex, the time was ripe for Congress to address many of the pressing evidentiary issues related to expert testimony that burdened the courts.

B. The Rise of the Federal Rules of Evidence

In 1975, more than half a century after *Frye*, Congress enacted the Federal Rules of Evidence.[21] In particular, Article VII of the Federal Rules laid the foundation for the admissibility of expert testimony.[22] In drafting the specific rule governing the admissibility of expert testimony, however, the drafters disregarded the teachings of *Frye* and enacted a rule that failed to address the general acceptance standard employed by the courts for over half a century. Rule 702 dramatically altered the framework previously employed by the courts, stating that "[i]f scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise."[23] Furthermore, the Advisory Committee's notes following

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19 *See* KENNETH R. FOSTER & PETER W. HUBER, JUDGING SCIENCE: SCIENTIFIC KNOWLEDGE AND THE FEDERAL COURTS 11 (1997).

20 *See, e.g.*, United States v. Jakobetz, 955 F.2d 786, 793-97 (2d Cir. 1992); United States v. Piccinonna, 885 F.2d 1529, 1536-37 (11th Cir. 1989); United States v. Downing, 753 F.2d 1224, 1237-41 (3d Cir. 1985); United States v. Baller, 519 F.2d 463, 465-67 (4th Cir. 1975); *see also* 1 KENNETH S. BROUN ET AL., MCCORMICK ON EVIDENCE § 203, at 869-74 (John William Strong ed., 4th ed. 1992) (discussing some federal courts' rejection of the *Frye* test).

21 Act of Jan. 2, 1975, Pub. L. No. 93-595, 88 Stat. 1926 (codified as amended at 28 U.S.C. app.).

22 *See* FED. R. EVID. 701 to 706. The rules in Article VII relate to the following topics:

Rule 701. Opinion testimony by lay witnesses.
Rule 702. Testimony by experts.
Rule 703. Bases of opinion testimony by experts.
Rule 704. Opinion on ultimate issue.
Rule 705. Disclosure of facts or data underlying expert opinion.
Rule 706. Court appointed experts.

See id.

23 FED. R. EVID. 702. On September 15, 1999, the United States Judicial Conference approved an amended form of Rule 702 which will go into effect on December 1, 2000, if approved by Congress. *See Rules Amendments Approved by the U.S. Judicial Conference*, 66 DEF. COUNS. J. 457, 457 (1999). If approved, the new Rule 702 would read:

> If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness

Rule 702 failed to discuss whether the scientific community must generally accept "scientific, technical, or other specialized knowledge" before a court can admit it.[24]

In addition to Rule 702, which established the primary framework for the admissibility of expert testimony, several other rules offer guidance to judges regarding questions of admissibility in general. For example, Rule 402 specifically addresses relevance.[25] As Rule 402 notes, however, there are exceptions to the general rule that all relevant evidence is admissible. For example, Rule 403 provides that "[relevant] evidence may be excluded if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury, or by considerations of undue delay, waste of time, or needless presentation of cumulative evidence."[26] Thus, Rule 403 affords trial judges the discretion under certain circumstances to exclude relevant and reliable expert testimony on the basis that its admission would unfairly prejudice one of the parties or that such testimony would tie up the court's docket for an unreasonable amount of time.

Rule 104 also significantly broadened the decision-making authority of trial judges:

> (a) *Questions of Admissibility Generally.* Preliminary questions concerning the qualification of a person to be a witness, the existence of a privilege, or the admissibility of evidence shall be determined by the court, subject to the provisions of subdivision (b). In making its determination it is not bound by the rules of evidence except those with respect to privileges.
> (b) *Relevancy Conditioned on Fact.* When the relevancy of evidence depends upon the fulfillment of a condition of fact, the court shall admit it upon, or subject to, the introduction of evidence sufficient to support a finding of the fulfillment of the condition.[27]

In particular, Rule 104(a) grants trial judges a considerable amount of discretion in admitting expert testimony because these determinations are not subject to the general rules of evidence. Furthermore, Rule 104(a) suggests that judges may, in ruling on preliminary questions of admissibility, conduct their own independent factual investi-

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> qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, *if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.*

Id. at 459 (italics provided in source to indicate new material).

24 *See generally* FED. R. EVID. 702 advisory committee's note (providing general guidance for interpreting Rule 702).

25 *See* FED. R. EVID. 402 ("All relevant evidence is admissible . . . .").

26 FED. R. EVID. 403.

27 FED. R. EVID. 104(a), (b).

gations into the qualifications of an expert or the scientific reliability of proffered expert testimony. However, although judges are not bound by the rules of evidence in conducting pretrial Rule 104(a) hearings, they are bound by the *Code of Conduct for United States Judges* and 28 U.S.C. §§ 144 and 455, which limit the extent to which judges may acquire potentially prejudicial knowledge.[28]

Presumably, Congress intended that the Federal Rules of Evidence would establish a clear and uniform test for federal courts to apply in determining the admissibility of expert testimony.[29] However, in the years following the passage of the Federal Rules, the courts had a difficult time applying the Rule 702 framework. In particular, uncertainty remained regarding whether helpful but not generally accepted expert testimony constituted admissible evidence under Rule 702.[30]

C. *Daubert v. Merrell Dow Pharmaceuticals, Inc.*

In 1993, the Supreme Court clarified these matters in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*[31] In *Daubert*, the plaintiffs sought to recover damages for birth defects allegedly caused by their mothers' use of the antinausea drug Bendectin during pregnancy.[32] Granting defendant's motion for summary judgment, the district court dismissed the plaintiffs' claims for lack of substantial scientific evidence linking use of Bendectin to the plaintiffs' birth defects.[33] Noting that the Ninth Circuit previously adopted the general acceptance test for scientific evidence in *United States v. Kilgus*,[34] the district court held that the opinions of the plaintiffs' experts, which were based on in vitro studies, chemical structure analyses, and animal studies, were not admissible because such techniques had not achieved general acceptance in their respective field.[35]

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28 *See infra* Part II.B.

29 *See* FED. R. EVID. 102 ("These rules shall be construed to secure fairness in administration, elimination of unjustifiable expense and delay, and promotion of growth and development of the law of evidence to the end that the truth may be ascertained and proceedings justly determined.").

30 *See, e.g.*, United States v. Piccinonna, 885 F.2d 1529, 1536-37 (11th Cir. 1989); United States v. Downing, 753 F.2d 1224, 1237-40 (3d Cir. 1985).

31 509 U.S. 579 (1993).

32 *See* Daubert v. Merrell Dow Pharms., Inc., 727 F. Supp. 570, 571 (S.D. Cal. 1989), *aff'd*, 951 F.2d 1128 (9th Cir. 1991), *vacated*, 509 U.S. 579 (1993).

33 *See id.* at 575-76.

34 *See id.* at 572 (citing United States v. Kilgus, 571 F.2d 508, 510 (9th Cir. 1978)).

35 *See id.* at 575 (noting that "federal courts have held that epidemiological studies are the most reliable evidence of causation in this area," and holding that "expert opinion which is not based on epidemiological evidence is not admissible to establish causation because it lacks the sufficient foundation necessary under FRE 703").

The United States Court of Appeals for the Ninth Circuit affirmed.[36] Voicing support for the district court's use of the general acceptance standard, the Ninth Circuit stressed that recognized authorities in the field must generally accept the scientific methodologies an expert employs.[37] The Ninth Circuit explained that if a court does not find the underlying methodologies to be "'generally accepted as a reliable technique,'" the court must exclude the proffered testimony.[38] Unsatisfied with this reasoning which was arguably inconsistent with Rule 702, the plaintiffs sought review by the Supreme Court on the question of whether the Federal Rules of Evidence superseded *Frye* and thus required the district court to conduct a different admissibility determination.[39] In 1993 the Supreme Court granted certiorari.[40]

In specifically addressing whether the Federal Rules of Evidence superseded *Frye*, the Supreme Court concluded that

> '[g]eneral acceptance' is not a necessary precondition to the admissibility of scientific evidence under the Federal Rules of Evidence, but the Rules of Evidence—especially Rule 702—do assign the trial judge the task of ensuring that an expert's testimony both rests on a reliable foundation and is relevant to the task at hand.[41]

Greatly expanding the trial judge's traditional role, the Court held that the trial judge must assess whether "the reasoning or methodology underlying the testimony is scientifically valid and . . . whether that reasoning or methodology properly can be applied to the facts in issue."[42] All nine Justices agreed that the Rules of Evidence super-

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36 *See* Daubert v. Merrell Dow Pharms., Inc., 951 F.2d 1128-31, 1128 (9th Cir. 1991), *vacated*, 509 U.S. 579 (1993).

37 *See id.* at 1130.

38 *Id.* (quoting United States v. Solomon, 753 F.2d 1522, 1526 (9th Cir. 1985)). The plaintiffs argued that their experts' reanalysis of published studies was a generally accepted scientific technique. *See id.* The Ninth Circuit held that reanalyses must be subjected to verification and scrutiny by others in the field. *See id.* at 1131. The court concluded, "[p]laintiffs' reanalyses do not comply with this standard; they were unpublished, not subjected to the normal peer review process and generated solely for use in litigation." *Id.*

39 *See* Petition for Writ of Certiorari at 9-17, Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579 (1993) (No. 92-102).

40 Daubert v. Merrell Dow Pharms., Inc., 506 U.S. 914 (1992).

41 Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579, 597 (1993). Although *Daubert* requires all federal courts to abandon *Frye*, many states have adhered to the rigid *Frye* standard. *See, e.g.*, State v. Isley, 936 P.2d 275, 279 (Kan. 1997) (holding that general acceptance test set forth in *Frye* governs admissibility of expert scientific evidence in Kansas courts); State v. Copeland, 922 P.2d 1304, 1315 (Wash. 1996) (holding that *Frye* is the applicable test for admissibility of novel scientific evidence); People v. Leahy, 882 P.2d 321, 327 (Cal. 1994) (reaffirming the use of the general acceptance test for evidence based on "new scientific techniques"); State v. Carter, 524 N.W.2d 763, 777-79 (Neb. 1994) (holding that the *Frye* test, rather than *Daubert*, applies to admission of novel forensic evidence), *overruled by* State v. Freeman, 571 N.W.2d 276 (Neb. 1997).

42 *Daubert*, 509 U.S. at 592-93.

seded *Frye* and that the lower courts improperly applied the general acceptance standard as the exclusive test for deciding whether to admit the plaintiffs' expert testimony.[43] However, the Court split seven-to-two on the question of how trial judges should apply this newly formulated "scientific knowledge" standard.[44]

Emphasizing that under the Federal Rules of Evidence trial judges must act as gatekeepers, admitting only expert testimony which qualifies as "scientific knowledge," the Court set forth four factors that trial judges may wish to consider: (1) whether a theory or technique can be (and has been) tested; (2) whether the theory or technique has been subjected to peer review and publication; (3) the known or potential rate of error of a particular technique; and (4) whether the theory has been generally accepted.[45] Departing from the rigid *Frye* test, the Court emphasized that "the inquiry envisioned by Rule 702 is . . . a flexible one" and that "the focus, of course, must be solely on

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43 *See id.* at 589, 598.

44 *See id.* at 580, 598-601. In attempting to clarify what constitutes "scientific knowledge" under Rule 702, the majority stated that "the adjective 'scientific' implies a grounding in the methods and procedures of science" and "the word 'knowledge' connotes more than subjective belief or unsupported speculation." *Id.* at 589-90. Furthermore, the majority noted that "in order to qualify as 'scientific knowledge,' an inference or assertion must be derived by the scientific method" and that "[p]roposed testimony must be supported by appropriate validation—*i.e.*, 'good grounds,' based on what is known." *Id.* at 590. However, Chief Justice Rehnquist, with whom Justice Stevens joined, concurring in part and dissenting in part, questioned the majority's application of this "scientific knowledge" standard:

> Does all of this *dicta* [surrounding "scientific knowledge"] apply to an expert seeking to testify on the basis of "technical or other specialized knowledge"—the other types of expert knowledge to which Rule 702 applies—or are the "general observations" limited only to "scientific knowledge"? What is the difference between scientific knowledge and technical knowledge; does Rule 702 actually contemplate that the phrase "scientific, technical, or other specialized knowledge" be broken down into numerous subspecies of expertise, or did its authors simply pick general descriptive language covering the sort of expert testimony which courts have customarily received?

Id. at 600 (Rehnquist, C.J., concurring in part and dissenting in part).

45 *See id.* at 593-95. In addition to the four criteria set forth in *Daubert*, other courts have suggested additional factors that trial judges may consider in assessing the reliability of expert testimony. *See, e.g.*, Daubert v. Merrell Dow Pharms., Inc., 43 F.3d 1311, 1317 (9th Cir.) (adding on remand: whether the experts are "proposing to testify about matters growing naturally and directly out of research they have conducted independent of the litigation, or whether they have developed their opinions expressly for purposes of testifying"), *cert. denied*, 516 U.S. 869 (1995); *see also* Gen. Elec. Co. v. Joiner, 522 U.S. 136, 146 (1997) (whether there is "simply too great an analytical gap between the data and the opinion proffered."); Sheehan v. Daily Racing Form, Inc., 104 F.3d 940, 942 (7th Cir.) (whether the expert "is being as careful as he would be in his regular professional work outside his paid litigation consulting"), *cert. denied*, 521 U.S. 1104 (1997); Claar v. Burlington N. R.R. Co., 29 F.3d 499, 502 (9th Cir. 1994) (whether the expert has sufficiently explained the reasoning and methods underlying his conclusions); Sterling v. Velsicol Chem. Corp., 855 F.2d 1188, 1209 (6th Cir. 1988) (whether the expert justified his dismissal of other experts' differing opinions).

principles and methodology, not on the conclusions they generate."[46] Vacating the Ninth Circuit's opinion, the Court remanded the case, instructing the Court of Appeals that general acceptance is no longer a necessary precondition to the admissibility of expert scientific testimony.[47]

While the gatekeeping role the Court defined in *Daubert* received praise from those who saw the decision as an opportunity to mend the increasingly hostile relationship between law and science,[48] others cautioned that trial judges, many of whom have no formal scientific training, simply lack the ability to undertake such complex and searching inquiries into the merits of expert scientific testimony.[49] As evidenced by many post-*Daubert* decisions, the courts had a difficult

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46 *Daubert*, 509 U.S. at 594, 595. In conclusion, the majority addressed two of the parties' underlying concerns in *Daubert*. First, in response to the defendant's concern that abandonment of the *Frye* standard would result in a "'free-for-all' in which befuddled juries are confounded by absurd and irrational pseudoscientific assertions," the Court stressed that "[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence." *Id.* at 595-96. Second, in response to the plaintiffs' concern that the exclusion of some scientific evidence would stifle the search for the truth, the Court emphasized that although the gatekeeping role on occasion may prevent the use of novel scientific theories, "the balance that is struck by [the] Rules of Evidence [is] designed not for the exhaustive search for cosmic understanding but for the particularized resolution of legal disputes." *Id.* at 597.

47 *See id.* at 597-98. On remand from the Supreme Court, the Ninth Circuit again affirmed the district court's grant of summary judgment for the defendant. *See* Daubert v. Merrell Dow Pharms., Inc., 43 F.3d 1311, 1322 (9th Cir.), *cert. denied*, 516 U.S. 869 (1995). Discussing the plaintiffs' failure to satisfy the first prong of Rule 702 which requires the party to demonstrate that the expert has utilized scientifically valid and reliable methodologies, the Ninth Circuit held that although "plaintiffs' experts have relied on animal studies, chemical structure analyses and epidemiological data, they neither explain the methodology the experts followed to reach their conclusions nor point to any external source to validate that methodology." *Id.* at 1319. As for the second prong of the Rule 702 inquiry under *Daubert*, the Ninth Circuit undertook an analysis of whether the plaintiffs' proffered testimony would assist the trier of fact in resolving the dispute over the link between Bendectin use and birth defects. Applying California tort law, the Ninth Circuit noted that "plaintiffs' experts would have had to testify either that Bendectin actually caused plaintiffs' injuries (which they could not say) or that Bendectin more than doubled the likelihood of limb reduction birth defects (which they did not say)." *Id.* at 1322. The court concluded that the plaintiffs failed to meet the relevancy prong of the Rule 702 inquiry under *Daubert*. *See id.*

48 *See, e.g.*, Bert Black et al., *Science and the Law in the Wake of* Daubert: *A New Search for Scientific Knowledge*, 72 TEX. L. REV. 715, 802 (1994) (expressing optimism that "the search for scientific knowledge launched by *Daubert* will bring [law and science] into closer accord").

49 *See, e.g.*, *Daubert*, 43 F.3d at 1315-17. On remand from the Supreme Court, United States Circuit Judge Kozinski prefaced the Ninth Circuit's analysis of *Daubert* with a cautionary and eloquent examination of the court's concerns regarding the new "gatekeeping" role. In section II(A) of the court's opinion entitled "Brave New World," Judge Kozinski noted that "[f]ederal judges ruling on the admissibility of expert scientific testimony face a far more complex and daunting task in a post-*Daubert* world than before." *Id.* at 1315. Noting that judges are "largely untrained in science and certainly no match for any of the witnesses whose testimony [judges] are reviewing," Judge Kozinski described the gatekeep-

time interpreting and applying the gatekeeping mandate in an appropriate and consistent fashion.[50] Many unanswered questions remained regarding the extent to which trial judges could weigh competing scientific theories, the proper standard under which an appeals court could reverse a district court's admissibility determination, and the lengths to which judges could go in conducting their own scientific research to comprehend the complex scientific matters appearing before them.

D. *General Electric Co. v. Joiner*

In *General Electric Co. v. Joiner*,[51] the Supreme Court revisited some of these critical, unanswered questions. In *Joiner*, the plaintiffs, Robert Joiner and his wife, sought damages for Joiner's lung cancer that was allegedly caused by his on-the-job exposure to polychlorinated biphenyls (PCBs).[52] In support of their claims, the plaintiffs proffered testimony of two experts who opined that Joiner's exposure to PCBs, furans, and dioxins caused his lung cancer.[53] Although the district court held that "there was a genuine issue of material fact as to whether Joiner had been exposed to PCBs," the court granted the defendant's motion for summary judgment for the following reasons:

> (1) there was no genuine issue as to whether [he] had been exposed to furans and dioxins, and (2) the testimony of [his] experts had failed to show that there was a link between exposure to PCB's and small-cell lung cancer [and was therefore inadmissible because

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ing role in a tone that revealed his own doubts about the competency of the federal judiciary to perform such a demanding role:

> Our responsibility, then, unless we badly misread the Supreme Court's opinion, is to resolve disputes among respected, well-credentialed scientists about matters squarely within their expertise, in areas where there is no scientific consensus as to what is and what is not 'good science,' and occasionally to reject such expert testimony because it was not 'derived by the scientific method.'

Id. at 1316 (referring to the Supreme Court's test); *see also* David L. Faigman et al., *Check Your Crystal Ball at the Courthouse Door, Please: Exploring the Past, Understanding the Present, and Worrying About the Future of Scientific Evidence*, 15 CARDOZO L. REV. 1799, 1834-35 (1994) (suggesting that the task of conducting a "rigorous and thorough analysis of scientific data" is "made difficult because of the general lack of scientific literacy among Americans, including lawyers and judges"); Kapsa & Meyer, *supra* note 2, at 326 ("Most judges lack the basic training and experience that is necessary for evaluating scientific opinions, and their individual level of scientific competence varies.").

50 *See* Kesan, *supra* note 17, at 2014, 2006-2018 (observing that such efforts by trial judges to reconcile genuine scientific disagreements has resulted in "a tortured landscape of [post-*Daubert*] decisions," which are nonuniform, inconsistent, and irreconcilable).

51 522 U.S. 136 (1997). The Court refers to the plaintiffs in the singular. *Id.* at 139 n.1.

52 *See* Joiner v. Gen. Elec. Co., 864 F.Supp. 1310, 1311-14 (N.D. Ga. 1994), *rev'd*, 78 F.3d 524 (11th Cir. 1996), *rev'd*, 522 U.S. 136 (1997).

53 *See id.* at 1317-22.

> it] did not rise above 'subjective belief or unsupported speculation.'[54]

The Eleventh Circuit reversed, holding that the district court improperly assumed the role of the fact finder in weighing the plaintiffs' scientific evidence rather than simply assessing the scientific validity of the methodologies employed by the plaintiffs' experts.[55] Reiterating the Court's cautionary advice in *Daubert* that judges must focus "solely"[56] on methodologies and not conclusions,[57] the Eleventh Circuit emphasized that the judge's role as gatekeeper is to "assure that an expert's opinions are based on relevant scientific methods, processes, and data, and not on mere speculation, and that they apply to the facts in issue."[58]

Surprisingly, the Supreme Court reversed the Eleventh Circuit on the basis that the appellate court applied an improper standard of review.[59] Contrary to the Court's previous holding in *Daubert* which stated that "the focus, of course, must be solely on principles and methodology, not on the conclusions that they generate,"[60] Chief Justice Rehnquist expressed the new view that:

> [C]onclusions and methodology are not entirely distinct from one another .... A court may conclude that there is simply too great an analytical gap between the data and the opinion proffered .... That is what the District Court did here, and we hold that it did not abuse its discretion in so doing.[61]

By approving the district court's exclusion of the plaintiffs' expert testimony on the basis of improperly drawn conclusions, the Court in *Joiner* broadened the scope of the judicial gatekeeping role to include

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54 *Joiner*, 522 U.S. at 140.

55 *See* Joiner v. Gen. Elec. Co., 78 F.3d 524, 533-34 (11th Cir. 1996), *rev'd*, 522 U.S. 136 (1997). The court explained:

> [T]he gatekeeping responsibility of the trial courts is not to weigh or choose between conflicting scientific opinions, or to analyze and study the science in question in order to reach its own scientific conclusions from the material in the field. Rather, it is to assure that an expert's opinions are based on relevant scientific methods, processes, and data, and not on mere speculation, and that they apply to the facts in issue.

Id. at 530.

56 Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579, 595 (1993).

57 *See* Kenneth J. Chesebro, *Taking* Daubert's *"Focus" Seriously: The Methodology/Conclusion Distinction*, 15 CARDOZO L. REV. 1745, 1748 (1994) (noting "the clear distinction drawn in *Daubert* between an expert's methodology and conclusion" and arguing that "it is completely inappropriate for either the proponent of scientific testimony or her opponent to advance Rule 702 admissibility arguments that depend on the ultimate conclusion reached by an expert").

58 *Joiner*, 78 F.3d at 530.

59 *See Joiner*, 522 U.S. at 141 (holding that "abuse of discretion is the proper standard of review of a district court's evidentiary rulings").

60 *Daubert*, 509 U.S. at 595.

61 *Joiner*, 522 U.S. at 146 (citations omitted).

the requirement that trial judges evaluate the analytical reasoning employed by scientific experts.[62]

Justice Breyer's concurring opinion in *Joiner* contains additional evidence of the Court's expansion of the gatekeeping role.[63] While Justice Breyer reiterated the concerns of amici that judges lack scientific training, he stressed that "neither the difficulty of the task nor any comparative lack of expertise can excuse the judge from exercising the 'gatekeeper' duties that the Federal Rules impose."[64] Although neither *Daubert* nor *Joiner* specifically addressed the means by which judges may overcome the difficulties posed by complex admissibility determinations, Justice Breyer noted in his concurring opinion that judges may utilize techniques found in the Federal Rules of Evidence and Civil Procedure such as pretrial conferences, pretrial hearings, and the appointment of special masters and specially trained law clerks.[65] Justice Breyer suggested further that judges may wish to rely upon the assistance of reputable court-appointed experts "recommended to courts by established scientific organizations, such as the National Academy of Sciences or the American Association for the Advancement of Science."[66] However, as judges faced with complex admissibility determinations begin to rely upon such tools, they will find little guidance in *Daubert* and *Joiner* regarding the extent to which they may acquire case-specific scientific, technical, or other specialized knowledge through those means. Furthermore, the Court's latest statement on the admissibility of expert testimony in *Kumho Tire Co. v. Carmichael*,[67] further compounds these ambiguities.

E. *Kumho Tire Co. v. Carmichael*

Kumho represents the latest and most siguificant expansion of the judicial gatekeeping role since *Joiner*. In *Kumho*, the plaintiffs, who sustained injuries when one of the tires on their vehicle failed, sued the tire manufacturer and distributor, basing their claim primarily upon the testimony of an expert in tire failure analysis.[68] At issue in the case was whether the district court properly excluded the testi-

62 *See id.* ("[N]othing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert.").

63 *See id.* at 147-50 (Breyer, J., concurring).

64 *Id.* at 148 (Breyer, J., concurring).

65 *See id.* at 149-50 (Breyer, J., concurring).

66 *Id.* at 150 (Breyer, J., concurring) (quoting Brief of Amici Curiae *The New England Journal of Medicine* and Marcia Angell at 18-19, Gen. Elec. Co. v. Joiner, 522 U.S. 136 (1997)).

67 526 U.S. 137 (1999).

68 *See* Carmichael v. Samyang Tires, Inc., 923 F. Supp. 1514, 1516-17 (S.D. Ala. 1996), *rev'd*, 131 F.3d 1433 (11th Cir. 1997), *rev'd sub nom.* Kumho Tire Co. v. Carmichael, 526 U.S. 137 (1999).

mony of the plaintiffs' tire expert on the grounds that his methodology failed the reliability requirement set forth by Rule 702 and *Daubert*, even though his testimony was "technical" rather than "scientific."[69] Reversing the Eleventh Circuit, the Supreme Court agreed with the district court's decision to exclude the expert testimony and held that *Daubert*'s gatekeeping duties apply not only to scientific testimony but to all expert testimony including "technical" and "other specialized" knowledge as referred to in Rule 702.[70]

Not only did the Court expand the gatekeeping role by requiring judges to determine the relevancy and reliability of all expert testimony, but the Court also concluded that "the trial judge must have considerable leeway in deciding in a particular case how to go about determining whether particular expert testimony is reliable."[71] Some commentators have argued that, by adding this grant of "considerable leeway" to the already broad authority of judges to conduct pretrial hearings under Rule 104(a),[72] district judges now possess nearly unlimited discretion in selecting the criteria to be used in determining the admissibility of proffered scientific, technical, and other specialized expert testimony on a case-by-case basis.[73] Furthermore, in defining the trial judge's role in determining the admissibility of expert testimony, the Court failed to establish specific prohibitions on self-initiated factual inquiries. A close examination of the *Code of Conduct for United States Judges* and 28 U.S.C. §§ 144 and 455, however, reveals that these authorities contain general provisions intended to preserve the integrity of the adversarial system, to prohibit independent factual investigations, and to ensure that judges remain impartial and unbiased.

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69 *Kumho*, 526 U.S. at 141.

70 *Id.* at 141-42, 147.

71 *Id.* at 152.

72 *See supra* note 27 and accompanying text.

73 *See, e.g.*, K. Issac deVyver, *Opening the Door But Keeping the Lights Off:* Kumho Tire Co. v. Carmichael *and the Applicability of the* Daubert *Test to Nonscientific Evidence*, 50 CASE W. RES. L. REV. 177, 202 (1999) (noting that because *Kumho* permits each judge to employ his own admissibility criteria, this will lead "to a variance among the federal circuits and a lack of predictability for litigants"); William H. Latham, *The "Gatekeepers' Discretion:" Flexible Standards on Admissibility of Expert Evidence in Wake of* Kumho, S.C. LAWYER, Aug. 11, 1999, at 15, 19 (suggesting that more discretion afforded to judges by *Kumho* "means more uncertainty for litigants and more 'wiggle room' for use by zealous advocates in arguing both for and against the admissibility of particular expert testimony").

II

HISTORICAL EVOLUTION OF THE *CODE OF CONDUCT FOR UNITED STATES JUDGES* AND 28 U.S.C. §§ 144 & 455—THE FEDERAL JUDICIAL DISQUALIFICATION STATUTES

A. The Need for Judicial Codes of Conduct

In the wake of the *Daubert-Joiner-Kumho* trilogy, federal judges are playing an increasingly important role in determining the admissibility of expert evidence in a wide range of complex science- and technology-based lawsuits.[74] Although critics of the post-*Kumho* gatekeeping role continue to question the validity of admissibility determinations on the basis that generalist trial judges lack the requisite scientific and technical literacy to enter sound judgments,[75] the validity of a court's judgments rests on factors other than the scientific competence of the presiding judge. As United States Supreme Court Justice Anthony M. Kennedy stated:

> Respect for a judgment depends upon its coherence, its logic, its intellectual force, its fairness, its common sense, its roots in ancient principles of law and justice, and its continued vitality in a world of change . . . . [However,] [a] court's judgments will be given no serious consideration, no examination at all, if the public is not confident that its judges remain committed to neutral and principled rules for the conduct of their office.[76]

If, as Justice Kennedy suggests, the validity of a court's judgments is based upon the public's confidence in an independent and impartial judiciary, efforts by judges to validate their decisions by improving their own scientific literacy through extrajudicial sources may compromise the values that form the basis of our judicial system. Thus, if the federal judiciary is to establish and maintain its independence, judges must follow a code of ethics that will foster justice and the rule of law.[77] In some cases, however, this judicial restraint may in fact hin-

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74 *See* Faust F. Rossi, Expert Witnesses: *Daubert v. Merrell Dow.* Before and After 82 (Sept. 16, 1999) (unpublished manuscript, on file with author).

75 *See supra* note 5 and accompanying text.

76 Anthony M. Kennedy, *Judicial Ethics and the Rule of Law,* 40 ST. LOUIS U. L.J. 1067, 1067 (1996).

77 *See id.* at 1067-68. Justice Kennedy offers three important principles to guide the judiciary in order to preserve its independence:

> First, judges must honor, always, a personal commitment to adhere to high standards of ethical conduct in the performance of their official duties and in their personal and social relations; second, the judiciary itself must adopt and announce specific, written codes of conduct to guide judges in the performance of their duties; and third, there should be adequate mechanisms and procedures for the judiciary itself to receive and investigate allegations of misconduct and to take action where warranted, so that the public has full assurance that its interest in an ethical judiciary is enforced and secured.

Id.

der judges in their effort to reach "correct" decisions. Yet that is the balance sought between outcome and process values in an adversarial system.

B. Existing Limits to Judicial Scientific, Technical, and Other Specialized Fact-Finding

1. *The* Code of Conduct for United States Judges

The Judicial Conference of the United States originally adopted the *Code of Conduct for United States Judges* (the "*Code*") on April 5, 1973.[78] The basis for the *Code* was the *ABA Model Code of Judicial Conduct* (the "*Model Code*")[79] the House of Delegates of the American Bar Association promulgated on August 16, 1972.[80] The American Bar Association intended the *Model Code* to serve as a guide to assist judges in establishing and maintaining high ethical standards in their public and private lives.[81] The *Model Code* consists of five broadly stated Canons that each contain specific rules,[82] a terminology section, an application section, and commentary.[83] In the *Model Code*'s preamble, the drafters specifically noted that the Canons should serve to bind judges to certain modes of conduct and that a judge's misconduct may qualify for disciplinary action in certain circumstances depending on the transgression's seriousness, on the improper activity's effects on others and on the judicial system, and on the extent to which the transgression falls into a pattern of improper activity.[84] Although the *Model Code* itself is not authoritative, forty-seven states and the District of Columbia have adopted their own judicial conduct codes using the *ABA Model Code* as a template.[85] The *Code of Conduct for United States Judges* also parallels and reflects the *ABA Model Code*.[86]

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78 CODE OF CONDUCT, *supra* note 12; *see id.* at 1 n.1.

79 *See* Kennedy, *supra* note 76, at 1073.

80 AMERICAN BAR ASS'N, ABA MODEL CODE OF JUDICIAL CONDUCT (1997).

81 *See id.* at 2.

82 *See id.* at 5-30. The five Canons of the ABA Model Code of Judicial Conduct are as follows:

- Canon 1: "A Judge Shall Uphold the Integrity and Independence of the Judiciary," *id.* at 5;
- Canon 2: "A Judge Shall Avoid Impropriety and the Appearance of Impropriety in All of the Judge's Activities," *id.*;
- Canon 3: "A Judge Shall Perform the Duties of Judicial Office Impartially and Diligently," *id.* at 8;
- Canon 4: "A Judge Shall So Conduct the Judge's Extra-Judicial Activities as to Minimize the Risk of Conflict with Judicial Obligations," *id.* at 15; and
- Canon 5: "A Judge or Judicial Candidate Shall Refrain from Inappropriate Political Activity," *id.* at 24.

83 *See id. passim.*

84 *See id.* at 1.

85 *See* Kennedy, *supra* note 76, at 1073.

86 *See* CODE OF CONDUCT, *supra* note 12. The seven Canons of the Code of Conduct are as follows:

When read in light of the *Daubert-Joiner-Kumho* trilogy, the *Code* has far reaching implications for the application of the gatekeeping role.[87] Although the *Code* does not specifically address every ethical dilemma that judges may encounter in performing their gatekeeping duties, its teachings encourage judicial preservation of the federal judiciary's integrity and independence. While the *Code* contains language similar to that of the *Model Code* regarding possible disciplinary action subsequent to violations, the *Code* further states that "[m]any of the proscriptions in the Code are necessarily cast in general terms, and it is not suggested that disciplinary action is appropriate *where reasonable judges might be uncertain as to whether or not the conduct is proscribed.*"[88] Thus, the *Code*'s spirit is that its Canons are merely advisory in nature, and a judge will not necessarily incur sanctions for noncompliance.[89]

Canon 1 of the *Code* sets forth the basic ethical values underlying its promulgation:

> An independent and honorable judiciary is indispensable to justice in our society. A judge should participate in establishing, maintaining, and enforcing high standards of conduct, and should personally observe those standards, so that the integrity and independence of the judiciary may be preserved. The provisions of this Code should be construed and applied to further that objective.[90]

Canon 2 further emphasizes the need for judges to avoid impropriety and the appearance of impropriety in all of their public and private activities:

Canon 1: "A Judge Should Uphold the Integrity and Independence of the Judiciary," *id.* at 2;

Canon 2: "A Judge Should Avoid Impropriety and the Appearance of Impropriety in All Activities," *id.* at 3;

Canon 3: "A Judge Should Perform the Duties of the Office Impartially and Diligently," *id.* at 5;

Canon 4: "A Judge May Engage in Extra-Judicial Activities to Improve the Law, the Legal System, and the Administration of Justice," *id.* at 12;

Canon 5: "A Judge Should Regulate Extra-Judicial Activities to Minimize the Risk of Conflict with Judicial Duties," *id.* at 13;

Canon 6: "A Judge Should Regularly File Reports of Compensation Received for Law-Related and Extra-Judicial Activities," *id.* at 18; and

Canon 7: "A Judge Should Refrain From Political Activity," *id.* at 19.

87 The *Code of Conduct for United States Judges* governs the conduct of United States circuit judges, district judges, Court of International Trade judges, Court of Federal Claims judges, bankruptcy judges, and magistrate judges. *See id.* at 1. In addition, certain provisions of the *Code* apply to special masters and commissioners, as the introduction indicates. *See id.* An interesting point is that the *Code* does not apply to Supreme Court Justices.

88 *Id.* at 3 (emphasis added).

89 *See* Kennedy, *supra* note 76, at 1073. Justice Kennedy notes that "[a]lthough compliance with the Code is not mandatory, almost all federal judges are most diligent in conforming their conduct to its provisions" and that "[o]ur judges want to follow high ethical standards, and they regard the Code as an appropriate and essential guide." *Id.*

90 CODE OF CONDUCT, *supra* note 12, at 2.

> A. A judge should respect and comply with the law and should act at all times in a manner that promotes public confidence in the integrity and impartiality of the judiciary.
> B. A judge should not allow family, social, or other relationships to influence judicial conduct or judgment. A judge should not lend the prestige of the judicial office to advance the private interests of others; nor convey or permit others to convey the impression that they are in a special position to influence the judge.[91]

Although one might argue that under Rule 104(a), a judge's self-initiated factual inquiries into an expert's qualifications or the foundations of proffered testimony are not improper, Canon 2 emphasizes the need for judges to avoid the *appearance* of impropriety. The commentary following Canon 2(A) specifically notes that "[t]he test for appearance of impropriety is whether the conduct would create in reasonable minds, with knowledge of all the relevant circumstances that a reasonable inquiry would disclose, a perception that the judge's ability to carry out judicial responsibilities with integrity, impartiality, and competence is impaired."[92] Thus, when reasonable minds may disagree over whether a judge's *sua sponte, ex parte* acquisition of scientific evidence creates an *appearance* of impropriety, Canon 2 proscribes this type of behavior.

In addition, whereas Canon 3 promotes judicial competence, it also addresses the general limits on judges in the performance of their judicial duties, which include those tasks that the Court set forth in the *Daubert-Joiner-Kumho* trilogy. Canon 3(A)(1) emphasizes the need for judges to maintain competency in the law, stating that "[a] judge should be faithful to and maintain professional competence in the law, and should not be swayed by partisan interests, public clamor, or fear of criticism."[93] Although some commentators contend that this professional competence requires judges to acquire a sufficient level of scientific literacy by way of extrajudicial sources, Canon 3(A)(4) sets limits on the means by which judges may acquire such potentially prejudicial knowledge:

> A judge should accord to every person who is legally interested in a proceeding, or the person's lawyer, full right to be heard according to law, and, except as authorized by law, neither initiate nor consider *ex parte* communications on the merits, or procedures affecting the merits, of a pending or impending proceeding. A judge may, however, obtain the advice of a disinterested expert on the law applicable to a proceeding before the judge if the judge gives notice to the parties of the person consulted and the substance of the advice, and affords the parties reasonable opportunity to respond. A

91 *Id.* at 3.
92 *Id.*
93 *Id.* at 5.

> judge may, with consent of the parties, confer separately with the parties and their counsel in an effort to mediate or settle pending matters.[94]

Furthermore, Canon 3(C) sets forth the requisite bases for a judge's disqualification:

> (1) A judge shall disqualify himself or herself in a proceeding in which the judge's impartiality might reasonably be questioned, including but not limited to instances in which:
>
> (a) the judge has a personal bias or prejudice concerning a party, or personal knowledge of disputed evidentiary facts concerning the proceeding . . . .[95]

Recalling the *Code*'s advisory nature, judges will not face sanctions for noncompliance with Canon 3(C). However, parts of the *Code*'s philosophy appear in specific federal statutes and, in these instances, judges must comply with the specific statutory guidelines.[96]

Although the *Code*'s first three Canons deal primarily with a judge's official duties, Canons 4 and 5 address the extent to which judges may participate in extrajudicial activities.[97] Whereas Canon 4 encourages judges to "engage in extra-judicial activities to improve the law, the legal system, and the administration of justice,"[98] Canon 5 "regulate[s] extra-judicial activities to minimize the risk of conflict with judicial duties."[99] Thus, it is clear that the *Code*'s framers wrestled with the challenge of reconciling two competing visions concerning the extent to which judges may engage in extrajudicial activities. On the one hand, Canon 4 encourages judges to engage in intellectual endeavors related to their profession and to interact with colleagues on a constructive basis. Yet, on the other hand, Canon 5 reveals that

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94 *Id.* at 6. The commentary concerning Canon 3(A)(4) notes the following:

> The proscription against communications concerning a proceeding includes communications from lawyers, law teachers, and other persons who are not participants in the proceeding, except to the limited extent permitted. It does not preclude a judge from consulting with other judges, or with court personnel whose function is to aid the judge in carrying out adjudicative responsibilities. A judge should make reasonable efforts to ensure that this provision is not violated through law clerks or other staff personnel.
>
> An appropriate and often desirable procedure for a court to obtain the advice of a disinterested expert on legal issues is to invite the expert to file a brief *amicus-curiae.*

Id. at 9.

95 *Id.* at 7. For a more detailed treatment of Canon 3(C), see LESLIE W. ABRAMSON, JUDICIAL DISQUALIFICATION UNDER CANON 3 OF THE CODE OF JUDICIAL CONDUCT 5-11 (Am. Judicature Soc'y, 2d ed. 1992).

96 *See* Kennedy, *supra* note 76, at 1073; *see, e.g., infra* note 105 and accompanying text (discussing and setting forth the statutory language of 28 U.S.C. § 455 (1994)).

97 *See* CODE OF CONDUCT, *supra* note 12, at 12-18.

98 *Id.* at 12.

99 *Id.* at 13.

such scholarly pursuits must not extend so far as to hinder a judge's ability to apply legal principles on an impartial basis.

Although Canon 5 establishes general guidelines regarding participation in extrajudicial activities, there is little guidance regarding the appropriateness of a judge's participation in any of the many publicly and privately sponsored, law-related activities available today. For example, Canon 4 permits judges to "speak, write, lecture, teach, and participate in other activities concerning the law, the legal system, and the administration of justice," provided that "in doing so [they] do not cast reasonable doubt on [their] capacity to decide impartially any issue[s] that may come before [them]."[100] However, the "reasonable doubt" standard is ambiguous in the context of judicial gatekeeping. For example, if a judge attends a conference on asbestos-related diseases and must later determine the admissibility of expert testimony in an asbestos case, might a reasonable person doubt the judge's capacity to perform his gatekeeping duties impartially?

Finally, Canon 6 addresses issues surrounding the receipt of compensation for extrajudicial activities.[101] Canon 6 is highly relevant today, because many judges obtain reimbursement for travel expenses and accommodations that they incur through attendance and participation at judicial seminars and conferences. In particular, the Canon provides that:

> A judge may receive compensation and reimbursement of expenses for the law-related and extra-judicial activities permitted by this Code, if the source of such payments does not give the appearance of influencing the judge in the judge's judicial duties or otherwise give the appearance of impropriety, subject to the following restrictions:
>
> A. *Compensation.* Compensation should not exceed a reasonable amount nor should it exceed what a person who is not a judge would receive for the same activity.
>
> B. *Expense Reimbursement.* Expense reimbursement should be limited to the actual costs of travel, food, and lodging reasonably incurred by the judge and, where appropriate to the occasion, by the judge's spouse or relative. Any payment in excess of such an amount is compensation.

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100 *Id.* at 12. The commentary following Canon 4 provides significant insight into the fundamental values underlying the promulgation of this liberal and proactive Canon:

> As a judicial officer and person specially learned in the law, a judge is in a unique position to contribute to the improvement of the law, the legal system, and the administration of justice, including revision of substantive and procedural law and improvement of criminal and juvenile justice. To the extent that the judge's time permits, the judge is encouraged to do so, either independently or through a bar association, judicial conference, or other organization dedicated to the improvement of the law.

Id. at 12-13.

101 *See id.* at 18.

> C. *Public Reports.* A judge should make required financial disclosures in compliance with applicable statutes and Judicial Conference regulations and directives.[102]

While the *Code* provides general guidelines for the behavior of federal judges, the federal judicial disqualification statutes—28 U.S.C. §§ 144 and 455—provide more specific guidelines for the disqualification of judges whose extrajudicial activities may adversely affect their ability to remain impartial.

2. *The Federal Judicial Disqualification Statutes—28 U.S.C. §§ 144 & 455*

Congress codified the spirit of Canon 3(C) in 1974 when it broadened and clarified the standards for disqualifying federal judges, Justices, and magistrates for prejudice or bias.[103] Section 144 of title 28 of the *United States Code* provides:

> Whenever a party to any proceeding in a district court makes and files a timely and sufficient affidavit that the judge before whom the matter is pending has a personal bias or prejudice either against him or in favor of any adverse party, such judge shall proceed no further therein, but another judge shall be assigned to hear such proceeding.[104]

Section 455 of title 28 of the *United States Code* similarly provides:

> (a) Any justice, judge, or magistrate of the United States shall disqualify himself in any proceeding in which his impartiality might reasonably be questioned.
> (b) He shall also disqualify himself in the following circumstances:
> (1) Where he has a personal bias or prejudice concerning a party, or personal knowledge of disputed evidentiary facts concerning the proceeding . . . .[105]

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102 *Id.*

103 *See* 28 U.S.C. § 455 (1994). Congress amended § 455 in 1974. *See* Act of Dec. 5, 1974, Pub. L. No. 93-512, 88 Stat. 1609 (codified as amended at 28 U.S.C. § 455). As revealed by the legislative history of the statute, the fundamental purpose behind the amendment was to "broaden and clarify the grounds for judicial disqualification" in order "to promote public confidence in the impartiality of the judicial process." H.R. REP. No. 93-1453, at 1, 5 (1974), *reprinted in* 1974 U.S.C.C.A.N. 6351, 6351, 6355.

104 28 U.S.C. § 144.

105 *Id.* § 455. Under § 455, counsel for a party who questions the presiding judge's impartiality has an ethical obligation to raise the issue. *See* Bernard v. Coyne, 31 F.3d 842, 847 (9th Cir. 1994). The Ninth Circuit in *Bernard* stated:

> Counsel for a party who believes a judge's impartiality is reasonably subject to question has not only a professional duty to his client to raise the matter, but an independent responsibility as an officer of the court. . . . A lawyer who reasonably believes that the judge before whom he is appearing should not sit must raise the issue so it may be confronted and put to rest. Any other course would risk undermining public confidence in our judicial system.

Id.

Although Congress broadened the scope of the federal judicial disqualification statutes, many commentators have suggested that the standards for judicial disqualification remain ambiguous and that as a result the public has lost confidence in the impartiality and independence of the judicial process.[106] Furthermore, the unsettling reality of disqualification proceedings under §§ 144 and 455 is that a party's motion for disqualification must ultimately be decided by the very judge whose impartiality is at issue.[107]

As evidenced by the recent federal cases addressing § 455 issues, the courts have applied different tests to determine whether judicial disqualification is appropriate. For example, in *Edgar v. K.L.*,[108] a class action suit questioning the constitutionality of the Illinois mental health care system, the parties consented to the appointment of a panel of three experts by the district judge to investigate and report on the institutions and programs in question.[109] While the panel was permitted to meet with patients and state employees outside the presence of counsel, the defendants claimed that the parties did not consent to private meetings between the judge and the panel when there was no compelling reason.[110] Upon discovering that the panel met

106 *See, e.g.*, Comment, *Disqualifying Federal Judges for Bias: A Consideration of the Extrajudicial Bias Limitation for Disqualification Under 28 U.S.C. § 455(a)*, 24 SETON HALL L. REV. 2057, 2057 & n.5 (1994); *see also, e.g.*, Seth E. Bloom, *Judicial Bias and Financial Interest as Grounds for Disqualification of Federal Judges*, 35 CASE W. RES. L. REV. 662, 694-97 (1985) (criticizing the judicial approach to judicial bias disqualification for being overly rigid and thus failing to accommodate the conflicting values of impartiality and efficiency); Edward G. Burg, Comment, *Meeting the Challenge: Rethinking Judicial Disqualification*, 69 CAL. L. REV. 1445, 1481-82 (1981) (rejecting "rigid and inconsistent" bias rules for a "more flexible approach" which would disqualify a judge for bias on only one ground: reasonable belief of a party); Mark T. Coberly, Comment, *Caesar's Wife Revisited—Judicial Disqualification After the 1974 Amendments*, 34 WASH. & LEE L. REV. 1201, 1201-1202 (1977) (favoring the then-present statutory scheme, 28 U.S.C. §§ 144 and 455, for federal judicial disqualification); Note, *Disqualification of Judges and Justices in the Federal Courts*, 86 HARV. L. REV. 736, 764 (1973) ("Since the authority of the judiciary is dependent on public confidence in the impersonality and reasoned foundation of judicial decisions, it is essential that judges be disqualified whenever the public may reasonably question their impartiality."); Susan B. Hoekema, Comment, *Questioning the Impartiality of Judges: Disqualifying Federal District Court Judges Under 28 U.S.C. § 455(a)*, 60 TEMP. L.Q. 697, 735-36 (1987) (proposing more objective standard for judicial bias disqualification because courts have not faithfully applied current objective standard); Randall J. Litteneker, Comment, *Disqualification of Federal Judges for Bias or Prejudice*, 46 U. CHI. L. REV. 236, 267 (1978) (recognizing "the need for a judicial system that not only is impartial in fact, but also appears to render disinterested justice").

107 *See Bernard*, 31 F.3d at 843 ("[T]he somewhat surprising (and not entirely comfortable) reality is that the motion is addressed to, and must be decided by, the very judge whose impartiality is being questioned."); *see also* United States v. Balistrieri, 779 F.2d 1191, 1202-03 (7th Cir. 1985) ("Section 455 clearly contemplates that decisions with respect to disqualification should be made by the judge sitting in the case, and not by another judge.").

108 93 F.3d 256 (7th Cir. 1996).

109 *See id.* at 257.

110 *See id.*

privately with the judge on several occasions to present the judge with a preview of their conclusions and to persuade him that their methodology was sound, the defendants moved for disqualification under § 455.[111] The defendants argued that the panel imparted to the judge "personal knowledge of disputed evidentiary facts" in violation of § 455(b) of the *United States Code*.[112] Ruling on the motion, the judge declined to disqualify himself, and the defendants petitioned the Seventh Circuit for a writ of mandamus.[113]

The Seventh Circuit concluded that mandatory disqualification under § 455(b)(1) was appropriate on the facts of the case, issued a writ of mandamus to remove the district judge from the case, and required that the case be reassigned to a different judge.[114] The court noted that "[t]he discussions in chambers were calculated, material, and wholly unnecessary" and that "[a] thoughtful observer aware of all the facts . . . would conclude that a preview of evidence by a panel of experts who had become partisans carries an unacceptable potential for compromising impartiality."[115] The trial judge argued that his meetings with the panel were appropriate because "the meetings would enable him to ensure that the panel's report was admissible" if the parties later raised *Daubert* issues.[116] The Seventh Circuit rejected the district judge's argument on the ground that the meetings compromised his impartiality.[117] The appellate court also questioned the judge's impartiality on the basis of his expressions of confidence in the panel's report and his demands for significant concessions during settlement negotiations (on behalf of the plaintiffs).[118]

In *In re School Asbestos Litigation*,[119] the Third Circuit considered whether a trial judge's attendance at a conference on asbestos-related

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111 *See id.*

112 *Id.* at 258 (internal quotation marks omitted). In response to the defendant's motion, the plaintiffs argued that: (1) the parties consented to private meetings and (2) disclosures in chambers are not "personal" knowledge. *See id.*

113 *See id.* at 257.

114 *See id.* at 262.

115 *Id.* at 259, 259-60. To distinguish knowledge gained on-the-record in a judicial capacity from personal knowledge gained off-the-record, the Seventh Circuit noted the dangers that off-the-record briefings pose to the integrity of the adversarial process:

> Off-the-record briefings in chambers . . . leave no trace in the record—and in this case the judge has forbidden any attempt at reconstruction. What information passed to the judge, and how reliable it may have been, are now unknowable. This is "personal" knowledge no less than if the judge had decided to take an undercover tour of a mental institution to see how the patients were treated.

Id. at 259.

116 *Id.* at 260.

117 *See id.*

118 *See id.*

119 977 F.2d 764 (3d Cir. 1992). This was a class action suit involving asbestos in school buildings. *See id.* at 769.

diseases would lead "a reasonable person . . . [to] question the district judge's continued impartiality."[120] The plaintiffs in this case partially funded the conference with $50,000 they obtained from a settlement fund.[121] The Third Circuit answered affirmatively and disqualified the trial judge under § 455(a). The court summarized:

> [H]e attended a predominantly pro-plaintiff conference on a key merits issue; the conference was indirectly sponsored by the plaintiffs, largely with funding that he himself had approved; and his expenses were largely defrayed by the conference sponsors with those same court-approved funds. Moreover, he was, in his own words, exposed to a Hollywood-style "pre-screening" of the plaintiffs' case: thirteen of the eighteen expert witnesses the plaintiffs were intending to call gave presentations very similar to what they expected to say at trial.[122]

As the Third Circuit emphasized, the standard for disqualification under § 455(a) is not whether the judge *actually* harbors any illegitimate pro-plaintiff or pro-defendant bias, but whether a reasonable person might *perceive* bias to exist.[123]

While the Third Circuit based its decision to disqualify on § 455, it also noted that Canon 3(C) of the *Code of Conduct for United States Judges* would require the same result.[124] In light of this Note's previous discussion of the advisory nature of the *Code*, an examination of the Third Circuit's reliance on the *Code* in its reasoning in *In re School Asbestos Litigation* is revealing. While the court does not state that the teachings of the *Code* are binding, several of the Judicial Conference's advisory opinions on the *Code* guide its ruling in the case.[125]

In re School Asbestos Litigation and *Edgar* illustrate the effectiveness of § 455 as a tool for policing the judiciary. However, not all cases raising § 455 issues involve judicial acts as egregious as the ones witnessed in *In re School Asbestos Litigation* and *Edgar*. In many instances, it

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120 *Id.* at 781. The court stated that it was not necessary to "decide the more difficult question whether subsection 455(b)(1) [which mandates disqualification on the basis of personal knowledge of disputed evidentiary facts] also required disqualification" because the court had concluded that subsection 455(a) mandated disqualification on grounds of partiality. *Id.*

121 *See id.* at 779.

122 *Id.* at 781-82.

123 *See id.* at 782; *see also In re* Murchison, 349 U.S. 133, 136 (1955) ("Such a stringent rule may sometimes bar trial by judges who have no actual bias and who would do their very best to weigh the scales of justice equally between contending parties. But to perform its high function in the best way 'justice must satisfy the appearance of justice.'" (quoting Offutt v. United States, 348 U.S. 11, 14 (1954)).

124 *See In re Sch. Asbestos Litig.*, 977 F.2d at 783.

125 *See id.* at 783-84. For example, the court notes that Advisory Opinion No. 17 suggests that if a judge's lodging and travel expenses are paid for by an organization that is known to advocate a viewpoint regularly advanced in litigation, the judge may be disqualified for an appearance of impartiality and impropriety. *See id.*

is difficult to determine whether the alleged bias or prejudice stems from a prohibited extrajudicial source or is simply the result of permissible conduct arising in the course of judicial duties. These cases pose the greatest challenge for courts and will continue to do so, especially in the wake of *Kumho*.

For example, in *Jackson v. Fort Stanton Hospital & Training School*,[126] the plaintiffs moved to disqualify the trial judge on the basis that his *ex parte* communications with a court-appointed expert compromised his impartiality.[127] Judge Parker, the trial judge, found that a reasonable person would not doubt his impartiality under the circumstances.[128] Judge Parker noted further that under *United States v. Grinnell Corp.*[129] disqualification would be appropriate only if the plaintiffs established that the alleged impartiality arose from an extrajudicial source and resulted in a decision not based on the judge's involvement in the case at hand.[130] Relying in part on a leading case from the Sixth Circuit, *Bradley v. Milliken*,[131] the trial judge determined that his three telephone conversations with the court-appointed expert which were the subject of controversy arose in a strictly judicial context and were therefore appropriate.[132]

Similarly, in *Bradley*, a school desegregation case, the plaintiffs sought to disqualify the trial judge under § 455(a) on the grounds that his *ex parte* communication with court-appointed experts, community groups, and representatives of the Detroit School Board adversely affected his impartiality.[133] The Sixth Circuit affirmed Judge DeMascio's decision not to recuse himself from the case, holding that his *ex parte* communications took place in an official judicial context.[134] The court stated that although Judge DeMascio's actions were "perhaps a bit unorthodox," his "use of experts, or his receipt through them of community and expert views on how best to approach the problems of desegregating Detroit schools," did not require him to recuse him-

126 757 F. Supp. 1231 (D.N.M. 1990).

127 *See id.* at 1232.

128 *See id.* at 1240.

129 384 U.S. 563 (1966).

130 *See Jackson*, 757 F. Supp. at 1240.

131 620 F.2d 1143 (6th Cir. 1980).

132 *See Jackson*, 757 F. Supp. at 1241. The plaintiffs in this case argued that the trial judge should have provided the parties with at least one of the following: (1) a record identifying the content of the conversations; (2) a formal stenographic transcript of the conversations; or (3) an opportunity to actually be present during the conversations. *See id.* at 1242. The judge, however, concluded that the plaintiffs waived their rights to seek recusal under § 455(a) because they failed to file their motion for disqualification at the time they learned of the facts that formed the basis of their motion. *See id.* at 1243.

133 *See Bradley*, 620 F.2d at 1156.

134 *See id.* at 1156-58.

self.[135] In fact, the court essentially commended Judge DeMascio for his behavior in the case, reiterating District Judge Churchill's sentiments: "[T]he manner in which Judge Robert E. DeMascio has presided in this case has been exemplary and should command the respect of the parties, counsel, the judiciary, and the public."[136]

More recently, the Sixth Circuit revisited these issues in *United States v. Bonds*.[137] The plaintiffs in *Bonds* moved for the recusal of Circuit Judge Boggs who attended a scholarly conference on forensic uses of DNA sponsored by the University of California at Riverside.[138] Central to the underlying criminal proceedings was the issue of whether DNA in the blood found at the crime scene matched the DNA in the blood from the defendant.[139] The motion to disqualify Judge Boggs included allegations that: (1) the chief scientist at the FBI's DNA laboratory had, at the conference, inappropriately defended his own testimony at the *Frye* hearing and the FBI's DNA methods generally;[140] (2) the chief scientist had both rehashed his own *Frye* hearing testimony and had presented to Judge Boggs and other attendees at the conference new data that neither he nor any other prosecution witness had presented in court at the *Frye* hearing;[141] (3) the chief scientist's presentations at the conference subjected Judge Boggs to "substantial, detailed, and continuous extra-judicial information of disputed evidentiary facts concerning the actual *Frye* hearing";[142] (4) Judge Boggs was seen "engaged in informal discussion with [the chief scientist] and other members of the FBI laboratory during the course of the conference";[143] (5) the atmosphere at the conference was one-sided and "vituperative";[144] and (6) "there were a number of ad hominem attacks, many during the formal talks, that were directed at [plaintiffs' counsel], by FBI employees and prosecutors."[145]

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135 *Id.* at 1157-58. Unlike the court in *Jackson v. Fort Stanton Hospital & Training School*, 757 F. Supp. 1231 (D.N.M. 1990), the Sixth Circuit in *Bradley* shared the plaintiffs' concern that the reports of the experts with whom the judge consulted were not made part of the record. The Sixth Circuit court directed that "if any experts are employed to advise the district court on any further matters in this litigation, they shall prepare written reports, copies of which shall become part of the record and shall be made available to all parties or their attorneys." *Bradley*, 620 F.2d at 1158.

136 *Id.* at 1158 (quoting Bradley v. Milliken, 426 F. Supp. 929, 944 (E.D. Mich. 1977)).

137 18 F.3d 1327 (6th Cir. 1994).

138 *See id.* at 1328-29.

139 *See id.* at 1328.

140 *See id.* at 1329.

141 *Id.*

142 *Id.*

143 *Id.*

144 *Id.*

145 *Id.*

Judge Boggs nevertheless refused to recuse himself, stating that "none of the material presented at the conference . . . constituted extra-judicial *knowledge* of disputed facts."[146] Though the judge acknowledged that the conference may have "amounted to an attempt . . . to 'spin' facts and evidence which . . . had already been frozen into the record," he maintained that his attendance at the conference was indistinguishable from "what occurs when an appellate judge reads newspaper articles, magazines, or books that may relate to a case that may come before him."[147] Yet Judge Boggs, whose own perception was that all viewpoints were equally represented at the conference, admitted that "the perceptions of others could differ."[148] Under § 455 and the standard set forth in *In re School Asbestos Litigation*, a perception of one-sidedness would require the disqualification of Judge Boggs from the case because this perception, by definition, indicated that the judge's attendance compromised the appearance of impartiality.

Judge Boggs, perhaps in anticipation of this criticism, sought to distinguish his situation from the trial judge's conference attendance in *In re School Asbestos Litigation*. He wrote that in this case, a major state university had sponsored the DNA conference and that he himself was not involved in funding or organizing the conference.[149] In further defense of his participation in the conference, Judge Boggs reiterated that a judge does not violate § 455 by hearing or reading commentary on what is already in the record.[150]

III

THE INTERSECTION OF THE POST-*KUMHO* GATEKEEPING ROLE WITH THE *CODE OF CONDUCT* AND FEDERAL JUDICIAL DISQUALIFICATION STATUTES

As evidenced by *Bradley*, *Jackson*, and *Bonds*, the three leading cases in which courts have rejected § 455(a) challenges, the courts are generally reluctant to disqualify judges on the basis of *ex parte* communications and self-initiated factual inquiries that arise in a judicial context and ease the burden of performing difficult judicial tasks. In commending Judge DeMascio for his conduct in *Bradley*, the Sixth Circuit implied that when up against "an extremely difficult (if not im-

146 *Id.* at 1330.

147 *Id.*

148 *Id.*

149 *See id.* at 1330-31.

150 *See id.* at 1331. Judge Boggs noted that "[w]ere this the case, [all judges would] be required to cancel [their] subscriptions to law reviews and newspapers, let alone specialized journals of any sort." *Id.*

possible) assignment," judges should be permitted to engage in beneficial *ex parte* communications.[151]

These cases, however, fail to provide judges with adequate guidance as to what exactly constitutes permitted judicial conduct as related to the *sua sponte, ex parte* acquisition of scientific, technical, or other specialized evidence in light of the general prohibitions against such behavior as set forth in the *Code of Conduct* and 28 U.S.C. § 455. For example, if a judge acquires, through *sua sponte, ex parte* communications, relevant specialized knowledge that increases the likelihood that the judge will reach the "correct" decision, it is unclear whether the Supreme Court would consider the communications appropriate judicial conduct. The fact that the *Code of Conduct* and 28 U.S.C. § 455 do not explicitly prohibit judges from acquiring potentially prejudicial scientific, technical, or other specialized knowledge compounds this ambiguity.

A. The Modern Trend: Valuing Outcome over Adversarial Process

By failing to address whether a judge's *sua sponte, ex parte* acquisition of scientific, technical, or other specialized evidence is appropriate judicial conduct when this behavior increases the likelihood of correct outcomes, the Supreme Court has tacitly approved of the modern trend toward allowing trial judges to assume a more active role in the scientific and technical fact-finding process to achieve the end goals of *Daubert, Joiner,* and *Kumho.* Stressing that the ultimate objective of the judicial gatekeeping role is to ensure the reliability and relevancy of expert testimony,[152] the Court has placed a greater value on outcome than on adversarial process.

In *Kumho,* the Court reiterated that trial judges have the obligation "to make certain that an expert, whether basing testimony upon professional studies or personal experience, employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field."[153] However, the Court dodged the questions raised in the post-*Daubert,* pre-*Kumho* era regarding judges' lack of scientific and technical expertise and the extent to which judges may utilize extrajudicial educational resources to assist in their gatekeeping duties. Instead, the Court compounded the am-

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151 Bradley v. Milliken, 620 F.2d 1143, 1158 (6th Cir. 1980) ("District Judge DeMascio was faced with an extremely difficult (if not impossible) assignment, confronted as he was with the responsibility of formulating a decree which would eliminate the unconstitutional segregation found to exist in the Detroit public schools, without transgressing the limits established by the Supreme Court." (quoting Bradley v. Milliken, 540 F.2d 229, 236 (6th Cir. 1976)).

152 *See* Kumho Tire Co. v. Carmichael, 526 U.S. 137, 147 (1999).

153 *Id.* at 152.

biguities surrounding the gatekeeping role by stating in *Kumho* that "the trial judge must have *considerable leeway* in deciding in a particular case how to go about determining whether particular expert testimony is reliable."[154] In particular, the Court noted that "[t]he trial court must have the same kind of latitude in deciding *how* to test an expert's reliability, and to decide whether or when special briefing or other proceedings are needed to investigate reliability, as it enjoys when it decides *whether* that expert's relevant testimony is reliable."[155]

Additionally, *Kumho* fails to provide trial judges with cautionary guidance that would keep judicial scientific and technical fact-finding within the parameters set forth in the *Code of Conduct* or 28 U.S.C. §§ 144 and 455. The only limit *Kumho* sets is subjecting Rule 702 decisions to abuse-of-discretion appellate review.[156] Moreover, as the Sixth Circuit's approach in *Bradley* and *Bonds* demonstrates, circuit courts will not likely view as abuses of discretion those actions that trial judges take to ease the burdens of their challenging gatekeeping tasks and increase their chances of making "correct" admissibility determinations.

B. Increasing the Likelihood of "Correct" Outcomes

1. *Judge Marlow's Approach Favoring* Sua Sponte, Ex Parte *Communications*

Although members of the scientific and legal communities continue to disagree over the extent to which trial judges may obtain scientific and technical information neither presented nor cited by the parties,[157] the modern consensus favors a more activist role for judges in the fact-finding process.[158] As Judge George Marlow has concluded, "a consensus has developed that trial judges faced with difficult, complex issues of science ought to be allowed, and perhaps even encouraged, to seek scientific research and other information not

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154 *Id.* (emphasis added); *see also* Kapsa & Meyer, *supra* note 2, at 331 ("While *Kumho* has clarified that the *Daubert* rules apply not only to scientific but to all technical and other specialized knowledge, it has compounded problems for litigants by giving trial judges broad discretion to determine in each case which of the *Daubert* criteria they wish to apply.").

155 *Kumho*, 526 U.S. at 152. The "leeway" the trial judge has to determine the methods to use in evaluating the admissibility of expert testimony is subject to review only under the abuse-of-discretion standard as articulated in *Joiner*. *See* Gen. Elec. Co. v. Joiner, 522 U.S. 136, 138-39 (1997) (noting that a court of appeals must apply an abuse-of-discretion standard when reviewing a trial court's decision to admit or exclude expert testimony).

156 Rule 702 grants the trial judge discretion to determine the methods used to fulfill his gatekeeping duties. *See* FED. R. EVID. 702.

157 *Cf.* Joseph A. Colquitt, *Judicial Use of Social Science Evidence at Trial*, 30 ARIZ. L. REV. 51, 73 (1988) (noting that there exist "great differences of opinion about the proper role of the courts").

158 *See* Marlow, *supra* note 5, at 330.

supplied by the attorneys, particularly in cases that involve issues likely to have far-reaching impact."[159] This consensus has evolved from the belief that judges who preside passively and neutrally over adversarial proceedings involving complex matters may not fully understand the magnitude of the issues at hand or be able to critically evaluate proffered expert testimony.[160] Advocates of increased judicial participation in the fact-finding process believe that such behavior will lead to more accurate and just results.[161] Judge Marlow, however, conditions his own view with the assurance that "[s]uch *sua sponte, ex parte* research should be allowed only if judicial exploration outside the record is subject to strict procedural controls designed to honor and protect the parties' due process rights."[162]

In particular, Judge Marlow suggests that judges should be free to venture into the library or onto the Internet during the decision-making process in order to supplement their understanding of the complex matters at hand.[163] Not only does Marlow contend that *sua sponte* research will assist a judge in comprehending complex issues, but he believes that "[s]uch research is more efficient and less costly than requiring litigants to invite live experts to explain scientific theory, particularly if the need . . . arises in courts located in remote geographical areas."[164] In order to achieve these objectives, Marlow proposes that the judicial codes of conduct be amended to include the following provision:

> A trial judge may, *sua sponte* and *ex parte*, search for and read research material and other literature, not presented or cited by the parties, concerning issues of science or technology directly applicable or relevant to a pending or impending proceeding before the judge; provided the judge gives notice to the parties of the material and literature consulted and, in a manner within the judge's discretion, affords them reasonable time to comment and submit other relevant material. This provision shall only apply to material found *ex parte* and on which the judge intends to rely for a decision about

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159 *Id.*

160 *See* Jack B. Weinstein, *Ethical Dilemmas in Mass Tort Litigation*, 88 NW. U. L. REV. 469, 539 (1994) ("A rigid conception of the judge as presiding passively and neutrally over an adversarial proceeding in which the litigants bear the whole burden of presentation is sometimes inaccurate and unwise. . . . Justice . . . is not blind, nor should it be.").

161 Judge Marlow, for example, proposes an amendment to the rules of judicial conduct that will "enable judges to render decisions reflecting society's mature and informed judgment." Marlow, *supra* note 5, at 330; *see also id.* at 334 (setting out Marlow's proposed amendment). He suggests that in order to achieve this goal we must "allow judges, when they deem it necessary in lawsuits involving difficult questions of technological or social science, to look beyond evidence presented by the attorneys." *Id.* at 331.

162 *Id.* at 330.

163 *See id.* at 334.

164 *Id.*

> the admissibility of physical or social scientific and technological evidence in a case.[165]

Although self initiated research may increase the likelihood of judges reaching the correct outcome, permitting judges to venture into cyberspace or the library to acquire specialized knowledge for individual cases poses serious problems both to the independence and impartiality of the judiciary and to the integrity of the adversarial system. First, case-specific factual research by judges runs counter to the spirit of our legal system which values the adversarial presentation of evidence. Second, even if judges give notice to the parties of the material, literature, and persons consulted, courts will become increasingly burdened with Rule 104(a) hearings in which the parties must evaluate and challenge the judge's own independent findings.[166] This would necessarily increase the cost of litigation and the amount of time necessary to resolve complex disputes. Third, self-initiated factual investigations by judges diminish the incentives for counsel to

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165 *Id.*

166 One proposal to avoid such problems is the use of pretrial colloquia and scientific peer review. *See* Comment, *The Use of Scientific Peer Review and Colloquia to Assist Judges in the Admissibility Gatekeeping Mandated by* Daubert, 34 HOUS. L. REV. 527 (1997) [hereinafter *Peer Review and Colloquia*]. Student author Lawrence Pinsky suggests that pretrial colloquia would provide all participants in the litigation the opportunity "to interact with each other directly" and to inform and educate "the judge and her law clerks in the details of all of the salient issues involved." *Id.* at 577. In particular, Pinsky believes that:

> [t]he benefits of holding a judicial colloquia [sic] over the more traditional adversarial in limine hearings would be manifold:
>
> 1) the open format allows questions to be posed directly by opposing experts to each other, as well as allowing the attorneys, the judge, and the judge's clerks to ask questions of the experts;
> 2) experts from both sides can describe the methodology employed in a pure lecture format;
> 3) the use of an expert-to-expert dialog allows a more rapid closure on the issues of agreement and disagreement, putting the two in a better perspective than is typical in the case of a sequential adversarial presentation with intervening cross-examinations by nonexpert attorneys controlling the discourse;
> 4) colloquia are more predictable as far as scheduling speaking and question and answer times are concerned; and
> 5) the Federal Rules of Evidence do not apply, so it is possible to prohibit evidentiary objections.

Id. at 571-72. Furthermore, Pinsky explains that peer review is effective for the following reasons:

> First, peer review is the technique that science itself has evolved to evaluate claimed discoveries, research results, and the merits of proposed research. Second, peer review places the task of evaluating the technical claims made in the proffered testimony on the shoulders of those presumably most competent to judge the validity of the methodology and to comment on the nature of any deficiencies. Third, peer review has the potential to restrain expert witnesses from making, and lawyers from propounding, claims in the first place that might seem reasonable to lay evaluators, but that will be more quickly exposed as spurious by their professional colleagues.

Id. at 554.

prepare their witnesses effectively and to educate the judge and jury on complex matters in language understandable to lay persons.

2. *Judge Weinstein's Approach Favoring Acquisition of General Knowledge Within Reasonable Limits*

Other judges, including United States District Judge Jack B. Weinstein, have proposed similar guidelines for permitting generalist trial judges to gain sufficient knowledge to perform their gatekeeping duties while at the same time maintaining their independence. Like Judge Marlow, Judge Weinstein believes that it is desirable for judges to gain as much general knowledge as possible about the matters pending before them.[167] However, unlike Judge Marlow who believes that judges should be permitted to rely on *sua sponte, ex parte* communications and their own self-initiated research to assist them in their gatekeeping duties, Judge Weinstein offers a more restrictive approach to the acquisition of knowledge to ensure that the public perceives the judiciary to be fair and unbiased.[168]

First, Judge Weinstein seems to suggest that judges should avoid case-specific inquiries and seek out only general knowledge. Second, Judge Weinstein proposes that while judges should be permitted to gain as much general knowledge as possible, the information should come from unbiased sources.[169] Furthermore, Judge Weinstein be-

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167 *See* Weinstein, *supra* note 10, at 565.

168 *See id.*

169 *See id.* Judge Weinstein offers the following list of suggestions:

1. Judges should be encouraged to gain as much general knowledge as possible, preferably from sources not tainted by venal or extreme ideological views.
2. Educational institutions such as the American Bar Association, the Federal Judicial Center, ALI/ABA, local bar associations and law schools should obtain funding for judicial education programs from the government, neutral, or balanced sources.
3. Too rich a setting for conferences should be avoided.
4. Flouting by judges of local sensibilities by public attendance at controversial meetings should be avoided.
5. In case-specific situations, judges should rely on staff and parties and not on third persons for advice on the law. Limited consultation with judges in the same hierarchical level is often appropriate. On facts, the judge should inform the parties of fact discovery and consultations outside the record.
6. Funding for educational programs is critical. It should come from sources that will not benefit from the programs. Where possible, funding through impartial buffering is desirable. Judges' expenses should be paid by neutral government bodies or educational institutions. Joint meetings of judges in a pending case should not be funded by attorneys.
7. Disclosure of judges' participation in educational events is desirable. Judges should make their calendars available to the general public. Seminars and conferences should be publicized in legal newspapers describing the agenda, the participants and the sponsors. Meetings should be open to the public and practitioners where possible.
8. An independent source for the evaluation of the background of organizations running programs judges expect to attend is desirable.

lieves that the parties should be made aware of a judge's participation in all types of educational events.[170]

The difficulty with Judge Weinstein's approach, however, is determining what sources of knowledge are tainted by extreme ideological views. Although judges may create the appearance of impropriety by attending privately sponsored seminars, as long as the seminars deal with general, rather than case-specific matters, no conflict of interest will arise. Fortunately, numerous resources exist today that will allow judges to improve their general scientific literacy while at the same time maintaining their independence and impartiality.[171]

3. *Other More General Approaches*

a. *The Federal Judicial Center's* Reference Manual on Scientific Evidence

In 1994, the Federal Judicial Center published the *Reference Manual on Scientific Evidence* (the "*Reference Manual*") in order to "assist judges in managing expert evidence, primarily in cases involving issues of science or technology."[172] In particular, lawyers, judges, and scientists prepared the three-part reference manual in order to "provide judges with quick access to information on specific areas of science in a form that will be useful in dealing with disputes among experts."[173] The first part of the manual introduces the fundamental questions surrounding the management and admissibility of expert testimony.[174] The second section contains reference manuals in seven

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9. Law clerks' backgrounds should be available for those interested.
10. Consultations with Special Masters, Rule 706 advisers, and other judges about a case should be revealed to the parties if there is any possibility of the information being significant.

Id.

170 *See id.* (number 7).

171 *See, e.g.*, SHEILA JASANOFF, SCIENCE AT THE BAR: LAW, SCIENCE, AND TECHNOLOGY IN AMERICA 221 (1995) (noting that "[m]any methods have been proposed to strengthen the capacity of courts to evaluate scientific and technological controversies").

172 REFERENCE MANUAL ON SCIENTIFIC EVIDENCE 1 (Fed. Judicial Ctr. ed., 1994) [hereinafter REFERENCE MANUAL]; *see also* John M. Conley & David W. Peterson, *The Science of Gatekeeping: The Federal Judicial Center's New* Reference Manual on Scientific Evidence, 74 N.C. L. REV. 1183, 1222-23 (1996) (critiquing the *Reference Manual* for its lack of an interdisciplinary approach to the scientific method and the attendant danger that judges will misuse it); Laurens Walker & John Monahan, Daubert *and the* Reference Manual: *An Essay on the Future of Science in Law*, 82 VA. L. REV. 837, 847 (1996) ("[I]n our view, *Daubert* and the *Reference Manual*, together, comprise a major commitment to the use of science in law—a result much more significant than merely the establishment and elaboration of a test governing the admissibility of scientific evidence."). *See generally* Kenneth Kreiling, *Managing Expert Evidence: An Overview*, 36 JURIMETRICS J. 121 (1996) (reviewing the REFERENCE MANUAL).

173 REFERENCE MANUAL, *supra* note 172, at 3.

174 *See* Margaret A. Berger, *Evidentiary Framework*, *in* REFERENCE MANUAL, *supra* note 172, at 37, 56-67; William W. Schwarzer, *Management of Expert Evidence*, *in* REFERENCE MANUAL, *supra* note 172, at 7, *passim*.

different areas of expertise including toxicology, epidemiology, forensic analysis of DNA, statistical inference, multiple regression analysis, survey research, and estimation of economic loss.[175] The third part addresses the use of court-appointed experts and special masters.[176]

The bulk of the *Reference Manual* consists of seven different reference guides, which are intended primarily to assist judges in their understanding of the epistemology of science and not to establish specific minimum admissibility standards.[177] The reference guides are intended to teach judges about the nature of the scientific method rather than provide them with a detailed crash course in numerous highly specialized fields.[178] This stated purpose reemphasizes the limited role of judges in the fact-finding process. Limited in scope and widely distributed, the *Reference Manual* provides judges with a valuable educational resource that poses little threat to the maintenance of an impartial and independent federal judiciary. In addition to the *Reference Manual*, judges may turn to other educational resources in preparing themselves for their gatekeeping duties.[179]

b. *Judicial Seminars*

Of the various educational resources available today, judicial seminars have become a popular means by which judges may acquire knowledge on timely scientific, technical, or other specialized matters pending in courtrooms nationwide. Both public and private interests sponsor these seminars which bring together judges and experts from a variety of specialized fields in fora that foster discussion and debate over current topics in complex litigation. However, unlike the *Refer-*

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175 *See* REFERENCE MANUAL, *supra* note 172, at 119-523.

176 *See* Joe S. Cecil & Thomas E. Willging, *Court-Appointed Experts*, *in* REFERENCE MANUAL, *supra* note 172, at 525, *passim*; Margaret G. Farrell, *Special Masters*, *in* REFERENCE MANUAL, *supra* note 172, at 575, *passim*.

177 *See* REFERENCE MANUAL, *supra* note 172, at 3. The introduction explains:

> The reference guides do not instruct judges concerning the admissibility of specific types of expert evidence or conclusions of specific scientific studies, and they are not intended to establish minimum standards for acceptable scientific testimony. Instead, they present a primer on the methods and reasoning of selected areas of scientific evidence and suggest a series of questions that will enable judges to identify issues that are likely to be disputed among experts and to explore the underlying basis of proffered evidence.

Id.

178 *See, e.g.*, David H. Kaye & David A. Freedman, *Reference Guide on Statistics*, *in* REFERENCE MANUAL, *supra* note 172, at 331, 335 ("This reference guide focuses on the nature of statistical thinking rather than on the rules of evidence or substantive legal doctrine.").

179 *See* Judith A. Hasko, Daubert v. Merrell Dow Pharmaceuticals, Inc.: *Flexible Judicial Screening of Scientific Expert Evidence Under Federal Rule of Evidence 702*, 1995 WIS. L. REV. 479, 505 ("*Daubert's* admissibility standard places considerable pressure on judges to become familiar with the scientific methodology applicable to a given case. However, judges can depend on a variety of educational and informational resources to facilitate their adjustment to this responsibility.").

ence Manual, judicial seminars vary greatly in content and may be sponsored by private interests.

Judges' ventures outside their courtrooms to participate in seminars on topics ranging from DNA evidence and the brain structures of gender, sex, and love[180] to covariance, correlation, scatter plots, and bivariate regression[181] and ecological economics[182] have concerned some commentators who caution that seminar sponsors with hidden agendas may successfully bias unwary judges.[183] Alliance for Justice, a

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180 *See, e.g.*, Seminar, Law and Biology (Hanover, N.H., May 13-16, 1996) (sponsored by the Federal Judicial Center, Dartmouth College, the Gruter Institute, and Vermont Law School) (materials on file with author). The following speakers, among others, gave presentations on the following topics: William Rodgers (University of Washington Law School): "Applying Biology to Law: An Introduction"; Timothy Goldsmith (Biology, Yale University): "General Principles of Evolutionary Biology"; Ursula Goodenough (Biology, Washington University): "Genetics and Behavior"; Miguel Marin-Padilla (Pathology, Dartmouth Medical School): "How Does the Human Brain Work?"; Michael McGuire (Neuropsychiatry, UCLA Medical School): "Neuroscience and Social Behavior"; Roger D. Masters (Government, Dartmouth College): "Brain Chemistry, Learning Disabilities, and Crime"; Edward Berger (Biology, Dartmouth College): "Human Genome Project"; Robert Frank (Economics, Cornell University): "Economic Foundations of Morality"; Kenneth Kreiling (Vermont Law School): "Lessons from DNA and Other Biological Forensic Evidence"; Helen Fisher (Anthropology, Rutgers University): "The Brain Structures of Gender, Sex and Love"; Oliver Goodenough (Vermont Law School): "Law in a Modular Mind"; E. Donald Elliott (Yale Law School): "Law and Biology: The New Synthesis."

181 *See, e.g.*, Workshop, Statistical Concepts for Federal Judges (Marina del Rey, Cal., Jan. 10-12, 1996) (sponsored by the Federal Judicial Center) (materials on file with author). Judges heard presentations on the following: Orley Ashenfelter (Princeton University): "Data Description," "Sampling Distributions," and "Tests Involving Means"; Franklin M. Fisher (Massachusetts Institute of Technology): "Measures of Dispersion," "Statistical Significance and Legal Causation," and "Introduction to Multiple Regression"; Daniel L. Rubinfeld (University of Cal., Berkeley): "Data Display and Presentation," "Tests Involving Proportions," "Covariance, Correlation, Scatter Plots, and Bivariate Regression," and "Introduction to Multiple Regression."

182 *See, e.g.*, Colloquium, FREE's 1995 Colloquium for Federal Judges: Environmental Economics and Policy Analysis (Gallatin Gateway, Mont., Sept. 13-17, 1995) (sponsored by the Foundation for Research on Economics and the Environment (FREE) and Lewis and Clark Law School) (materials on file with author) [hereinafter FREE 1995].

183 *See, e.g.*, Abner Mikva, *The Wooing of Our Judges*, N.Y. TIMES, Aug. 28, 2000, at A17 (suggesting that judicial integrity is sacrificed "when private interests are allowed to wine and dine judges at fancy resorts under the prextext of 'educating' them").

On July 27, 2000, the Judicial Education Reform Act of 2000 was introduced in the Senate in response to a report criticizing judges' attendance at privately sponsored judicial seminars. *See* Judicial Education Reform Act of 2000, S. 2990, 106th Congress (2000). "The bill would prohibit federal judges from accepting 'anything of value in connection with a seminar,'" and "[i]nstead the Board of the Federal Judicial Center would have the power to authorize goverument funding for judges to attend only those 'seminars that are conducted in a manner so as to maintain the public's confidence in an unbiased and fair-minded judiciary.'" Addendum to the Report of the Executive Committee, *at* http://www.uscourts.gov/Press_Releases/addendumexec.pdf (last visited Sept. 21, 2000). However, on September 19, 2000, the Judicial Conference of the United States voted to oppose the bill "because the legislation is overly broad, would have unintended consequences, and has not been adequately studied." Administrative Office of the U.S. Courts, *Judicial Conference Opposes Sweeping Restrictions on Education Programs*, *at* http://www.uscourts.gov/Press_Releases/press09192000.html (last visited Sept. 21, 2000).

nonprofit organization, issued a report suggesting that sponsorship of law and economics seminars by powerful business interests has created a legal system in which justice can be bought and sold just like any other commodity.[184] Challenging this view, James Pierson, executive director of the John M. Olin Foundation, which has funded seminars on law and economics for judges, argued that "judges are perfectly capable of assessing law and economics on their own without being told what to think."[185]

While nonprofit organizations such as the Federal Judicial Center, academic institutions, or state bar associations sponsor many of today's judicial seminars,[186] others receive funding directly or indirectly from private corporate interests.[187] Whethor not private inter-

184 *See* Henry J. Reske, *Expense-Paid Judicial Seminars Hit*, 79 A.B.A. J., Aug. 1993, at 36.

185 *Id.*

186 *See, e.g.*, Seminar, The Judge's Role As Gatekeeper: Responsibilities and Powers (Houston, Tex., Mar. 5, 1997) (sponsored by the Texas Center for the Judiciary, the Texas Bar Foundation, and the Harvard Law School Center for Law and Information Technology) (materials on file with author). This seminar brought together "a balanced panel of judges and lawyers" to "explore the nature of the judge's responsibility for overseeing the quality and sufficiency of circumstantial and scientific evidence, and the range of judicial powers using court-appointed experts to assist in the process." *Id.* Charles Nesson, Professor, Harvard Law School, moderated the seminar and the participants included: Marcia Angell, M.D., Executive Editor, *New England Journal of Medicine*, Boston, Mass.; John Cornyn, Justice, Supreme Court of Texas, Austin, Tex.; Dick DeGuerin, Attorney, DeGuerin & Dickson, Houston, Tex.; Robert Dickson, Attorney, Dickson, Carlson, & Campillo, Santa Monica, Cal.; Fredric Ellis, Attorney, Ellis & Rapacki, Boston, Mass.; Raul Gonzales, Justice, Supreme Court of Texas, Austin, Tex.; Barry Nace, Attorney, Pauson, Nace & Norwind, Washington, D.C.; Michael O'Neill, Judge, 193d District Court, Dallas, Tex.; and Shanna Swan, Ph.D., California Dept. of Health Services, Berkeley, Cal.

187 *See* FREE 1995, *supra* note 182. FREE's mission is to "advance[ ] conservation and environmental values by applying modern science and America's founding ideals to policy debates." THE FREE REPORT (Found. for Research on Econ. and the Env't, Bozeman, Mont.), vol. 3, issue 1, 1999, at 2 [hereinafter FREE REPORT]. FREE's program objectives are to:

> explain the linkages among science, risk analysis and economics; show how secure property rights and economic freedom can foster the efficient and sensitive use of natural resources and ecosystem preservation; show how the application of economics to law provides insights into the public interest; describe ways in which incentives and voluntary cooperation can be used to protect and enhance environmental values while fostering economic prosperity; and explore and foster positive, constructive roles of government officials and federal agencies.

Id. at 5. In 1999, FREE offered two introductory seminars in environmental economics and policy analysis and an advanced program in "Bringing Economics and Ethics to Climate Change." *See id.* at 7. Lecturers at this program included Dr. Jerry Mahlman, Director of the Geophysics Fluid Dynamics Laboratory at Princeton University; Professor Rick Revesz, New York University Law School; and Professor Thomas Schelling of the University of Maryland. *See id.* at 7. According to the FREE Report, "[i]n both 1997 and 1998 approximately eight percent of the federal judiciary participated in [the] four seminars [offered by FREE.]" *Id.* at 6-7. In 1999, FREE had revenues of $513,600 from FREE programs, $130,100 from corporate contributions, and $2,110 from individual contributions. *See id.* at 11. For more information on FREE, see *FREE, Foundation for Research on Economics & the Environment, at* http://free-eco.org. (last visited Aug. 16, 2000).

ests are improperly influencing judges at judicial seminars remains a matter of great debate. Nonetheless, while judges should be encouraged to gain general knowledge in a wide range of disciplines frequently appearing in their courtrooms, attempts to independently investigate case-specific, factual disputes should be strictly forbidden. One approach to preventing self-initiated, specialized inquiries is to require judges to regularly attend courses in judicial ethics.[188]

c. *Court-Appointed Experts*

Judges may also appoint independent technical advisors under Federal Rule of Evidence 706 to ease the burden of their gatekeeping duties.[189] Rule 706 grants a trial court the authority to appoint expert

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188 *See* Howard T. Markey, *A Need for Continuing Education in Judicial Ethics*, 28 VAL. U. L. REV. 647, 656 (1994) (arguing that "[m]aintenance of the highest standards of judicial ethics is . . . more than ever critical to the judiciary's continued legitimacy and public acceptance" and recommending that "[m]andatory courses in judicial ethics should be instituted and regularly attended by each judge").

189 Rule 706, entitled "Court Appointed Experts," provides:

> (a) *Appointment.* The court may on its own motion or on the motion of any party enter an order to show cause why expert witnesses should not be appointed, and may request the parties to submit nominations. The court may appoint any expert witnesses agreed upon by the parties, and may appoint expert witnesses of its own selection. An expert witness shall not be appointed by the court unless the witness consents to act. A witness so appointed shall be informed of the witness' duties by the court in writing, a copy of which shall be filed with the clerk, or at a conference in which the parties shall have opportunity to participate. A witness so appointed shall advise the parties of the witness' findings, if any; the witness' deposition may be taken by any party; and the witness may be called to testify by the court or any party. The witness shall be subject to cross-examination by each party, including a party calling the witness.
>
> (b) *Compensation.* Expert witnesses so appointed are entitled to reasonable compensation in whatever sum the court may allow .... [Except where the law provides a fund as in criminal actions,] compensation shall be paid by the parties in such proportion and at such time as the court directs, and thereafter charged in like manner as other costs.
>
> (c) *Disclosure of appointment.* In the exercise of its discretion, the court may authorize disclosure to the jury of the fact that the court appointed the expert witness.
>
> (d) *Parties' experts of own selection.* Nothing in this rule limits the parties in calling expert witnesses of their own selection.

FED. R. EVID. 706.

In *Regents of the University of California v. Oncor, Inc.*, No. C-95-3084-VRW, 1997 U.S. Dist. LEXIS 15068 (N.D. Cal. Aug. 19, 1997), a complex patent case involving techniques used to map DNA, District Judge Vaughn R. Walker turned to Rule 706 for assistance:

> Having devoted a very lengthy time to the issues in the present motions, the undersigned has concluded this is one of those cases that may call for the appointment of a court-appointed expert. The issues in this litigation are of unusual difficulty and complexity, involving questions well beyond and in a setting or context far removed from the regular ken of issues which courts are called upon to decide. The court is mindful of the encouragement which the Supreme Court has given to the use of such experts and the need to ensure that the use of such experts not abdicate the responsibilities of the court. Still, the months entailed in the court's consideration of

witnesses of its own selection, but requires these experts to advise the parties of their findings and subject themselves to cross-examination.[190] These requirements seek to provide the parties with all relevant evidence that the judge may utilize in the decision-making process as well as to ensure that judges do not rely on information acquired through their own independent investigations.[191] However, "Rule 706 does not explicitly address the issue of whether the judge and the appointed expert may communicate ex parte [sic] during the course of the litigation."[192] Rule 706 also fails to address whether court-appointed experts, who are often intimately involved in the judge's decision-making process, may engage in *ex parte* communications with the parties.[193] Thus, some tension exists between the freedoms Rule 706 affords to judges and the teachings that the *Code of Conduct* and 28 U.S.C. § 455 impart.

While many commentators have suggested that judges should take advantage of Rule 706 more often, researchers at the Federal Judicial Center discovered that an overwhelming majority of federal district judges responding to a survey reported that they had never appointed a Rule 706 expert.[194] According to the study, one reason for the low appointment rate is that many judges have expressed concern that the appointment of experts would undermine the adversarial process.[195] However, according to the Federal Judicial Center survey on court-appointed experts, the judges who appointed experts

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> the issues here has caused an unreasonable delay in the resolution of the issues, resulting in an unfairness to the parties at bar and an unreasonable distraction from the demands of other cases.

Id. at *51-52 (citations omitted); *see also* Hall v. Baxter Healthcare Corp., 947 F. Supp. 1387, 1392-93 (D. Or. 1996) (illustrating the appointment of independent technical advisors "with the necessary expertise in the fields of epidemiology, immunology/toxicology, rheumatology, and chemistry to assist in evaluating the reliability and relevance of the scientific evidence").

190 *See* FED. R. EVID. 706(a).

191 Some commentators have expressed concern that the Court has not articulated how exactly judges may utilize appointed experts under FRE 706. *See, e.g., Improving Gatekeeping, supra* note 17, at 947 (noting that because the Court has not expressed whether court-appointed experts should act as witnesses at formal evidentiary hearings or as informal advisors to the court, "[c]ourts concerned with upholding *Daubert's* mandate must . . . develop procedures that prevent [judges from delegating gatekeeping duties to the expert], that ensure that litigants are dealt with fairly and are given an opportunity to rebut the expert's claims, and that . . . accommodate the judge's need for flexible interaction with the expert").

192 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, 1029 (1994).

193 *See id.* at 1033.

194 *See* Cecil & Willging, *supra* note 176, at 535.

195 *See id.* at 540.

have been "almost unanimous in expressing their satisfaction with the expert."[196]

As suggested by one commentator, although the use of court-appointed experts under Rule 706 may "improv[e] the quality of decisions, particularly on technically complex issues," "more guidance on appointment procedures and communications with the expert [is needed to] help minimize the risks entailed in this departure from adversary procedures."[197] The potential for abuse under Rule 706 is great, and private communications between judges and technical advisors may have a devastating effect on the adversarial system. For these reasons, Congress and the Supreme Court should modify the *Code of Conduct*, 28 U.S.C. § 455, and Federal Rule of Evidence 104(a) in a way that will restrict the discretion Rule 706 currently affords judges.

d. *Scientific Panels or Professional Societies*

In addition to the use of court-appointed experts, some commentators have proposed that judges turn to scientific panels or professional societies for assistance in dealing with complex matters.[198] In 1998 at the 150th annual meeting of the American Association for the Advancement of Science (AAAS), Justice Stephen Breyer suggested that court-appointed experts and technical advisors may be of great assistance to judges.[199] Justice Breyer, whose remarks paralleled his concurring opinion in *Joiner*,[200] suggested that because judges are playing an increasingly important role in screening scientific experts, advice from neutral parties in the scientific community may be of great assistance to generalist judges.[201]

In relating his own experience in a case involving doctor-assisted suicide, Justice Breyer noted that the Court received numerous friend-of-the-court briefs from a variety of health-care professionals and experts in related fields.[202] Justice Breyer stressed to the AAAS that "[s]uch briefs help to educate the judges on potentially relevant tech-

196 *Id.* at 537; *see also* J. Madeleine Nash, *Ruling Out "Junk Science,"* TIME, Dec. 30, 1996 - Jan. 6, 1997, at 102 (praising Hall v. Baxter Healthcare Corp., 947 F. Supp. 1387 (D. Or. 1997), in which Judge Robert E. Jones appointed scientific experts to aid in his decision to exclude "junk science" on breast implants).

197 Ellen E. Deason, *Court-Appointed Expert Witnesses: Scientific Positivism Meets Bias and Deference*, 77 OR. L. REV 59, 155 (1998).

198 *See, e.g., Peer Review and Colloquia, supra* note 166, at 546-47.

199 *See Justice Breyer Calls for Experts to Aid Courts in Complex Cases*, N.Y. TIMES, Feb. 17, 1998, at A17 [hereinafter *Justice Breyer Calls*]; *see also* Richard Monastersky, *Courting Reliable Science: Judges Seek to Improve Use of Scientific Experts in Trials*, 153 SCI. NEWS, Apr. 18, 1998, at 249, 249 (discussing Justice Breyer's concurring opinion in *Joiner* and his speech to the AAAS).

200 *See supra* notes 63-66 and accompanying text.

201 *See Justice Breyer Calls, supra* note 199, at A17.

202 *See* Stephen Breyer, *The Interdependence of Science and Law*, 280 SCI., Apr. 24, 1998, at 537, 538; *supra* note 199.

nical matters, helping to make us, not experts, but moderately educated laypersons, and that education improves the quality of our decisions."[203] Furthermore, Justice Breyer suggested "that in this age of science we must build legal foundations that are sound in science as well as in law. Scientists have offered their help. We in the legal community should accept that offer, and we are in the process of doing so."[204]

In response to Justice Breyer's remarks, the AAAS, in conjunction with the American Bar Association and the Federal Judicial Center, launched a project "to test the feasibility of increased use of court-appointed experts in cases that present technical issues."[205] The project, aimed at both civil and criminal litigation, "will provide a slate of candidates to serve as court-appointed experts in cases in which the court has determined that the traditional means of clarifying issues under the adversarial system are unlikely to yield the information that is necessary for a reasoned and principled resolution of the disputed issues."[206]

C. The Problems with Valuing Outcome over Process and the Need for New Limits

The *Daubert-Joiner-Kumho* trilogy, in conjunction with the "liberal thrust" of the Federal Rules,[207] has caused trial judges to become increasingly comfortable with the notion that they can and should delve much deeper into the scientific and technical fact-finding process than they could under *Frye*.[208] This modern evolution of the rules governing expert evidence is due in large part to the growing consensus that increased scientific literacy among judges will necessarily increase the likelihood of correct outcomes. However, in focusing on outcomes, the Court has ignored the process values underlying the *Code of Conduct* and the federal judicial disqualification statutes.

With the primary focus on outcome—that is, in ensuring that all admitted testimony is both relevant and reliable—the Court has both

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203 Breyer, *supra* note 202, at 538.

204 *Id.*

205 *Supreme Court Justice Beats Drum for More Use of Scientists*, TESTIFYING EXPERT, Mar. 1998, at 1, 2 [hereinafter *Justice Beats Drum*]; *see also* American Association for the Advancement of Science, *Court Appointed Scientific Experts: A Demonstration Project of the AAAS*, *at* http://www.aaas.org/spp/case/case.htm (last visited Aug. 16, 2000) ("Judges wishing to appoint experts under any source of authority will be able to call project staff for assistance in identifying highly qualified scientists and engineers who will serve as experts to the courts, rather than to the parties to litigation.").

206 *Justice Beats Drum*, *supra* note 205, at 2.

207 Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579, 588 (1993) (quoting Beech Aircraft Corp. v. Rainey, 488 U.S. 153, 169 (1988)).

208 *Frye* instructed judges simply to determine whether or not a scientific theory enjoyed general acceptance. *See supra* Part I.A.

sacrificed process values and granted trial judges virtually unlimited discretion in the decision-making process. In light of the considerable amount of commentary following *Daubert*, it is surprising that the *Kumho* Court failed to discuss the values that guide the judicial role in the adversarial system. In particular, the Court could have addressed the continued need for judges to adhere to a general set of ethical and legislative codes such as the *Code of Conduct* and 28 U.S.C. §§ 144 and 455, which share a general purpose in promoting an impartial and unbiased judiciary. Instead, the Court has given trial judges permission to become scientific arbiters who substantively evaluate the competing and divergent methods and opinions of scientific experts.[209]

Under *Kumho*, judges' attempts to discover what are perceived to be knowable and objective scientific truths are clearly at odds with the process values the *Code of Conduct* and the federal judicial disqualification statutes set forth. Yet the reasons for this conflict between outcome and process values are apparent. Proponents of a greater judicial role in the scientific fact-finding process assume that there are scientific "truths" hiding somewhere between diametrically opposed expert opinions and that judges can find them.[210] However, the scientific, technical, or other specialized matters that lie at the heart of competing expert opinions often present questions that are currently unanswerable. Requiring judges to reach final conclusions on disputed scientific and technical matters may not only lead to incorrect conclusions but may also place judges in the awkward position of resolving disputes that experts in the field are unable to resolve.[211] Thus, to grant trial judges the authority to decide among competing expert opinions in fields outside the judge's expertise, especially those which involve complex, unsettled questions, is to disregard the adver-

209 *See* Anthony Z. Roisman, *Conflict Resolution in the Courts: The Role of Science*, 15 CARDOZO L. REV. 1945, 1945 (1994) (noting that "[s]ome of these efforts by federal judges [to act as scientific arbiters] have been almost laughable in their failure to comprehend even the most fundamental principles of scientific methodology").

210 Anthony Z. Roisman, *The Implications of* G.E. v. Joiner *for Admissibility of Expert Testimony*, *in* ENVIRONMENTAL LITIGATION 491, 508-09 (ALA-ABA Course of Study Materials SC84, 1998) (concluding that this view is often used to justify the usefulness of court-appointed experts).

211 *See* Peter Huber, Address at The Fifteenth Annual Judicial Conference of the United States Court of Appeals for the Federal Circuit (June 12, 1997), *in* 180 F.R.D. 467, 484 (1998) (suggesting that because there is no stable systemwide mechanism to reach final decisions on basic questions of scientific and technical fact, "[t]he process often dictates results that are completely opposite to what the substance dictates"); *see also* Jocelyn Kaiser, *Synergy Paper Questioned at Toxicology Meeting*, 275 SCI., Mar. 28, 1997, at 1879 (presenting an example of how studies involving similar chemicals may differ in their conclusions).

sarial system's fundamental reliance on jurors to resolve challenging issues of fact at the conclusion of a trial.[212]

With a hint of skepticism, the Ninth Circuit on remand in *Daubert* expressed its concern over the post-*Daubert* gatekeeping role.[213] Judge Kozinski defined a role that requires judges to resolve currently unanswerable scientific questions:

> Our responsibility, then, unless we badly misread the Supreme Court's opinion, is to resolve disputes among respected, well-credentialed scientists about matters squarely within their expertise, in areas where there is no scientific consensus as to what is and what is not "good science," and occasionally to reject such expert testimony because it was not "derived by the scientific method."[214]

Proponents of increased judicial discretion and *sua sponte* scientific research have argued that lax admissibility standards will inundate jurors with expert testimony, confuse them, and lead them to

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212 *See* Roisman, *supra* note 209, at 1953 (suggesting that "there is wide consensus that the best system for resolving disputes is the civil jury system"). Roisman notes that a 1992 report from an American Bar Association/Brookings Institute Symposium identified five virtues of the jury system which make it an effective system for resolving disputes:

> First, the jury is a valuable process for decisionmaking and an effective means for arriving at a fair resolution of disputed facts . . . .
>
> Second, the jury provides important protections against the abuse of power by legislatures, judges, the government, business, or other powerful entities . . . .
>
> Third, . . . juries provide the best mechanism for bringing broadly based community values to bear on the issues involved in private disputes but doing so with their public function in mind . . . .
>
> Fourth, the jury provides an important check on the bureaucratization and professionalization of the legal system . . . .
>
> Finally, the jury system provides a means for legitimizing the outcome of dispute resolution and facilitating public understanding and support for and confidence in our legal system.

Id. (quoting THE BROOKINGS INSTITUTION, CHARTING A FUTURE FOR THE CIVIL JURY SYSTEM 8-10 (1992)) (omissions in the original).

While critics of the jury system tend largely to disregard the values set forth by the *Brookings Institution Report* and assert that sympathetic jurors often ignore obvious scientific flaws in the scientific evidence presented by plaintiffs' experts, some studies suggest that juries are becoming increasingly antiplaintiff and probusiness as a result of the successful efforts of tort reform advocacy groups. *See, e.g.*, Theodore Eisenberg & James A. Henderson, Jr., *Inside the Quiet Revolution in Products Liability*, 39 UCLA L. REV. 731, 787-95 (1992); Valerie P. Hans & William S. Lofquist, *Jurors' Judgments of Business Liability in Tort Cases: Implications for the Litigation Explosion Debate*, 26 LAW & SOC'Y REV. 85, 93-107 (1992). Others have suggested that juries may even be better suited than judges to distinguish good science from bad science. *See, e.g.*, Richard B. Schmitt, *Who Is an Expert? In Some Courtrooms, The Answer Is 'Nobody,'* WALL ST. J., June 17, 1997, at A1 ("In the past, juries have been criticized for being dazzled by expert testimony and rendering verdicts based on emotion rather than intellect. But whether a system that relies on judges to decide which scientists are believable is any more evenhanded or just is hotly debated.").

213 *See* Daubert v. Merrell Dow Pharms., Inc., 43 F.3d 1311, 1316 (9th Cir.), *cert. denied*, 516 U.S. 869 (1995).

214 *Id.*

favor the wrong expert.[215] However, several studies of civil jury verdicts reveal that in cases involving the presentation of competing scientific views, juries have reached the correct results.[216] Furthermore, many lawyers refrain from challenging the admissibility of their opponents' questionable scientific and technical testimony in an effort to destroy weak experts during cross-examinations.[217] Effective cross-examination of a weak expert can often devastate the opposing side's case.

IV

PROPOSED MODIFICATIONS TO THE *CODE OF CONDUCT FOR UNITED STATES JUDGES*, 28 U.S.C. § 455, AND RULE 104(a)

In order to preserve the integrity of the adversarial system and maintain an impartial and unbiased federal judiciary in the wake of the *Daubert-Joiner-Kumho* trilogy, the Judicial Conference should modify the *Code of Conduct for United States Judges* to include the following provision:

> *A trial judge must not (1) acquire case-specific scientific, technical, or other specialized knowledge, evidence or information not presented or cited by the parties to the litigation or an expert appointed under Rule 706, or (2) engage in* sua sponte, ex parte *communications in order to obtain knowledge, evidence, or information concerning issues directly applicable or relevant to a pending or impending proceeding before the judge.*

Although Canon 3(A)(4) of the *Code* currently prohibits "*ex parte* communications on the merits," the Canon provides exceptions to this prohibition "as authorized by law."[218] Furthermore, as previously noted, the *Code* is cast in general terms and is unenforceable whenever reasonable judges may disagree over the meaning of certain provisions.[219] Thus, because judges may reasonably disagree over whether the *Daubert-Joiner-Kumho* trilogy creates an exception for the acquisi-

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215 *Cf.* Edward J. Imwinkelried, *The Standard for Admitting Scientific Evidence: A Critique From the Perspective of Juror Psychology*, 100 MIL. L. REV. 99, 111-18 (1983) (discussing and criticizing the assumption that lay jurors cannot understand complex scientific evidence).

216 *See id.*; *see also* Neil Vidmar, *Are Juries Competent to Decide Liability in Tort Cases Involving Scientific/Medical Issues? Some Data From Medical Malpractice*, 43 EMORY L.J. 885, 907 (1994) (concluding that "the data indicate that juries are not systematically biased against doctors and that in the preponderance of cases they make reasonable decisions").

217 *See The Use and Misuse of Expert Evidence in the Courts*, 77 JUDICATURE 68, 69 (1993). As stated by criminal attorney Robert J. Hirsh of Tuscon, Arizona at the American Judicature Society meeting on March 6, 1993, which addressed the use, misuse, and systemic impact of expert witnesses in court: "I take the trial lawyer's view that if you have an expert who really doesn't have a well-founded claim, you are going to be able to destroy that claim in cross-examination." *Id.*

218 CODE OF CONDUCT, *supra* note 12, at 6.

219 *See id.* at 2-3.

tion of scientific, technical, or other specialized knowledge, the Judicial Conference should modify Canon 3(A)(4) to prohibit all exceptions and to clarify that all *sua sponte, ex parte* communications are prohibited.

Furthermore, Congress should modify 28 U.S.C. § 455 to include the following italicized provision:

> (a) Any justice, judge, or magistrate of the United States shall disqualify himself in any proceeding in which his impartiality might reasonably be questioned.
> (b) He shall also disqualify himself in the following circumstances:
> (1) Where he has a personal bias or prejudice concerning a party, or personal knowledge of disputed evidentiary facts concerning the proceeding, *including possession of any case-specific scientific, technical, or other specialized knowledge, evidence, or information not presented or cited by the parties to the litigation or an expert appointed under Rule 706, or where he has engaged in* sua sponte, ex parte *communications in order to obtain knowledge, evidence, or information concerning issues directly applicable or relevant to the proceedings pending or impending before the judge . . . .*[220]

Finally, the Supreme Court should move to modify Rule 104(a) to include the following italicized provision:

> (a) *Questions of Admissibility Generally.* Preliminary questions concerning the qualification of a person to be a witness, the existence of a privilege, or the admissibility of evidence shall be determined by the court, subject to the provisions of subdivision (b). *Although* [i]n making its determination *the court* is not bound by the rules of evidence except those with respect to privileges, *the trial judge is prohibited from engaging in* sua sponte, ex parte *communications in order to obtain any case-specific scientific, technical, or other specialized knowledge, evidence, or information concerning issues directly applicable or relevant to the proceedings pending or impending before the judge.*[221]

These proposed modifications should not be read to prohibit judges from seeking general knowledge on the performance and function of their gatekeeping role or on general scientific and technological matters. Judges may appropriately acquire general knowledge by utilizing the Federal Judicial Center's *Reference Manual*, attending publicly and privately sponsored seminars on general topics in litigation, or appointing experts under Rule 706. However, in order to maintain the independence and impartiality of the federal judiciary,

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220 The italicized portion is the author's proposed amendment to 28 U.S.C. § 455 (1994).

221 The italicized portion (except for the heading) is the author's proposed amendment to FED. R. EVID. 104(a).

judges must not seek highly specialized, case-specific knowledge while a case is pending or impending or assume an overactive role in resolving highly technical scientific disputes. As Professor Sheila Jasanoff has cautioned, "[w]hen judges exclude expert testimony, appoint their own expert witnesses, or render summary judgments, they inescapably give up the role of dispassionate observer to become participants in a particular construction (or . . . deconstruction) of scientific facts."[222] The modifications this Note proposes to the *Code of Conduct*, 28 U.S.C. § 455, and Rule 104(a) would ensure that judges adhere to their assigned roles as impartial and dispassionate gatekeepers and make decisions based solely on the adversarial presentation of evidence.

CONCLUSION

In the wake of *Kumho*, our nation's trial judges face a pressing dilemma: they can either (1) acquire all relevant scientific, technical, or other specialized knowledge that will increase the likelihood of making correct admissibility decisions, even if this requires engaging in *sua sponte, ex parte* communications, or (2) refrain from engaging in any activities that may adversely affect their ability to remain impartial by adhering to a general set of ethical and legislative rules intended to preserve the integrity of the adversarial system. Sparked by the Supreme Court's tacit approval in the *Daubert-Joiner-Kumho* trilogy of increased judicial involvement in the fact-finding process, the majority sentiment at the onset of the new millennium is that judges should adopt the former approach.

However, as judges become more actively involved in the scientific and technical fact-finding process, the values that underlie the adversarial system will erode. No longer will judges rely solely upon the evidence and arguments presented by the parties to make admissibility determinations, but they will conduct an increasing number of Rule 104(a) pretrial hearings in which the parties must critically evaluate and challenge the judges' own scientific findings. The problem with this result is that when judges take it upon themselves to independently research the scientific and technological facts in dispute, the parties are no longer afforded the unbiased and impartial gatekeepers that our system both guarantees and depends upon. Under the new set of judicial rules proposed in this Note, judges would be prohibited from engaging in *sua sponte, ex parte* communications, and be forced to base their admissibility determinations solely upon the evidence presented by the parties.

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222 Sheila Jasanoff, *What Judges Should Know About the Sociology of Science*, 77 JUDICATURE 77, 82 (1993).