Management of Expert Evidence

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I. Introduction

The purpose of this manual, and this paper in particular, is to assist judges in implementing effective management of expert evidence involving scientific issues. Depending on the nature, novelty, and complexity of such evidence, particular management measures and techniques may be necessary and appropriate. This paper deals with those kinds of measures and techniques. It does not deal with generic case management, or with case management of complex litigation generally, which will also often be necessary in such cases. For example, mass tort cases, which frequently involve scientific evidence, will also require the application of techniques to manage multiparty litigation. Those subjects are beyond the scope of this manual; they are covered in the Federal Judicial Center's *Manual for Litigation Management and Cost and Delay Reduction,* published in 1992, and the *Manual for Complex Litigation,* the third edition of which will appear in 1995.

II. The Initial Conference

A. Assessing the Case

The court's first contact with a case will normally be at the initial Rule 16 conference. Note, however, that the attorneys should have previously met, as required by Federal Rule of Civil Procedure 26(f), "to discuss the nature and basis of their claims and defenses . . . and to develop a proposed discovery plan . . . and [to submit] to the court . . . a written report outlining the plan."[1] Compliance with this "meet and confer" requirement is essential to effective case management. The report, prepared and submitted by the attorneys, together with the pleadings and other available materials, should give the judge useful insight into the case, including information about scientific issues and the likelihood of expert evidence, although this will not invariably be true. In addition, as a result of their conference, the attorneys should be reasonably well informed about the case and should be prepared for the initial conference. Expert testimony, and possible limitations or restrictions on its use, is specifically made a subject for the initial conference, as well as subsequent conferences by Federal Rule of Civil Procedure 16(c)(4).[2] Thus the judge should raise the subject of prospective expert evidence at the conference and begin to explore the issues bearing on it.

The range of subject matter addressed by expert evidence is virtually limitless. It covers the spectrum of the various sciences (both so-called hard and soft sciences), and it extends to other areas of technical or specialized knowledge in which people who have acquired special knowledge, skill, experience, training, or education may be able to give testimony that would assist in the resolution of disputed questions of fact.[3] Surveys indicate that expert testimony comes predominantly from physicians in various specialties, followed by economists, both of which are common in personal injury cases.[4] Engineers also frequently testify,

1. *See* Fed. R. Civ. P. App. of Forms, Form 35 (Report of Parties' Planning Meeting).

2. The Advisory Committee Notes state that the rule is intended to "clarify that in advance of trial the court may address the need for, and possible limitations on, the use of expert testimony." Fed. R. Civ. P. 16(c)(4) advisory committee's notes.

3. *See* Fed. R. Evid. 702.

4. *See* Molly Treadway Johnson & Joe S. Cecil, Problems of Expert Testimony in Federal Civil Trials (Federal Judicial Center forthcoming 1995). For a breakdown of experts appearing in state courts, see Anthony

mostly in patent and accident cases. Specialists in other areas of science, such as epidemiology, toxicology, microbiology, and statistics, testify less frequently though often in litigation involving numerous cases and parties. Persons in many other occupations may be offered as experts, such as law enforcement officers and other government agents, mechanics, and technicians.

The nature and degree of judicial management appropriate for the case will vary greatly with its particular circumstances. Much expert evidence can be entirely routine and require little judicial intervention or control. When experts disagree, however, the litigation may become more complicated, resulting in lack of comprehension and added cost and delay. For this reason, the judge should determine early on the nature of the conflict between experts, attempt to define and narrow the issues and initiate appropriate management procedures.

Although this manual is intended to be helpful in different kinds of situations involving expert evidence, its principal focus is on issues of science, where most of the difficulties with expert testimony are encountered. Cases involving issues of science do not necessarily create a unique need for judicial management; testimony from an economist about the extent of lost income due to a plaintiff's injuries is a routine occurrence in litigation. That the court has before it a seemingly ordinary single-plaintiff personal injury case, however, does not foreclose the presence of difficult questions of scientific proof. A medical malpractice case may, for example, present complicated and perhaps novel and controversial questions of the etiology of a cancer. Similarly, a two-party patent case may involve difficult questions concerning the state of the art. Whether a criminal case requires special attention may depend on whether experts use novel or only customary forensic techniques. And some cases may present difficulty if experts rely on nontraditional social science research.

Probably the greatest challenges are presented by multiparty litigation involving toxic torts or environmental harm, including product liability cases. Such cases often, although not necessarily, involve novel and controversial issues in which the science is still evolving and claims and defenses have not yet been shaken out in earlier litigation. Such cases also will impact numerous parties and potential litigants. Judges having cases of this kind need to take care to permit adequate development of emerging scientific issues and prevent the premature foreclosure of what may turn out to be meritorious theories while still performing their "gatekeeping function" with respect to expert evidence under *Daubert v. Merrell Dow Pharmaceuticals, Inc.*[5]

Champagne et al., *Expert Witnesses in the Courts: An Empirical Examination,* 76 Judicature 5 (1992), and Samuel R. Gross, *Expert Evidence*, 1991 Wis. L. Rev. 1113.

5. 113 S. Ct. 2786, 2798 (1993). The Court stated that before admitting expert testimony the trial court must make a "preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid." *Id.* at 2796. The role of the District Court under the Supreme Court's interpretation of Rule 702 in *Daubert* in determining admissibility of expert testimony is addressed in detail in Margaret A. Berger, Evidentiary Framework §§ I, III, in this manual.

In contrast, large-scale litigation may involve scientific principles or theories that have become so well settled and widely accepted that relitigation may be minimized. These are the so-called mature torts,[6] of which harm caused by asbestos and DES (an anti–morning sickness drug) are examples. Management techniques, such as judicial notice, aggregation, compensation schedules for specific injuries, and other nontraditional means of processing claims, may need to be developed to avoid unnecessary litigation activity.

Cases involving scientific issues do not fall neatly into one or a set of preordained and categorical molds. The initial task for the judge is to determine the management needs of the case in light of all relevant factors, including the apparent characteristics of the prospective scientific issues. The initial assessment, though subject to reexamination and revision as more becomes known about the case and the issues, will guide the judge in defining and narrowing the issues, in discovery control, and in motion practice.

B. Defining the Issues

Meaningful case management must begin with defining the issues. Only when the issues are identified and understood can a fair and efficient case management plan be devised. Cases with scientific evidence present particular difficulty because often the parties will operate with inadequate information and the judge will be unfamiliar with the subject matter.

From the judge's perspective, the most effective way to start the process of identifying and defining issues is simply to ask questions. Counsel's responses should be followed by more questions in order to probe deeply into the nature of the claims, the theories of general and specific causation, the defenses, and in particular the bases for disagreement among experts. This process should be viewed as an occasion not for argument but for education, for the judge as well as for the attorneys, who will probably know little about their opponent's case. This approach is important, not only because it is most effective for laying bare the issues, but also because it helps set the right tone for the litigation. Expert witnesses have become intensely adversarial, thereby increasing the difficulty in arriving at fair and informed decisions and undermining civility. Although the litigation process is itself inherently adversarial, there is no reason why the judge should accept contentious advocacy by experts and their counsel at the cost of comprehension, efficiency, and fairness. By approaching the conference in a spirit of civil and enlightened inquiry, the judge can communicate to the participants how he or she expects the litigation to be conducted.

Cases with difficult issues of expert evidence will, of course, also involve traditional legal issues, the management of which will call for conventional case

6. *See* Francis E. McGovern, *Toward a Functional Approach for Managing Complex Litigation*, 53 U. Chi. L. Rev. 440 (1986).

management practices. Identifying issues in disputes over scientific evidence will be more difficult and complex. In approaching this task, the judge should keep in mind the following considerations:

- Because the attorneys may have difficulty communicating the necessary scientific information to the judge, it may be useful to retain experts (not necessarily prospective witnesses) who can explain the fundamentals necessary for a basic understanding of the subject matter without addressing the specific issues that divide the parties' experts.
- In cases in which the experts have not yet been retained or named as testifying experts and in cases in which expert testimony is an essential element, it may be helpful to defer further proceedings until the necessary expert evidence has been secured and exchanged by the parties. Frequently the parties may not retain experts, at least to testify at trial, until later in the litigation. (This can be for a number of reasons, such as the expectation that the case will settle, lack of sufficient familiarity with the facts, or difficulty in finding a suitable expert.) Sometimes parties retain experts as consultants and defer the decision to name them as testifying experts. The effect of such a delay depends on the role of the expert in the case. In some cases, the expert merely embellishes testimony of percipient witnesses; the expert's participation in the pretrial phase is therefore not critical to issue definition. In other kinds of cases, however, the expert is crucial to the case; this is true, for example, in medical malpractice litigation in which only an expert witness can supply the evidence of failure to conform to the applicable standard of practice, an essential element in a plaintiff's case.
- When experts have been retained and their positions are generally known, the critical task is to begin to identify the issues that divide opposing experts. In science-rich cases, it is likely that experts will have played a part in the preparation of the claims and defenses, and their theories can therefore be identified early in the litigation. If the process of issue definition is to be effective, it should not stop with a general statement of the experts' disagreement. The court should, with the assistance of the parties, probe deeper to identify the bases for their differences. Experts will often express diametrically opposed opinions on crucial issues in the case without explaining or disclosing the bases for their differences. Closer examination of the bases of their respective positions may well disclose that their differences are the products of different starting points. For example, experts may reason from different statistical or other databases or assumptions, leading them to different conclusions. If the controversy can be reduced to one about the appropriate selection of foundation data, it will be much more susceptible to a reasonable resolution. Experts may also operate from widely differing philosophical or

policy premises, such as the limits of acceptable risk or the nature of unacceptable harm. Finally, expert opinions may be the product of research or testing procedures, which, once disclosed, can be independently and objectively evaluated for adequacy.

- Federal Rule of Civil Procedure 26(a)(2) establishes a procedure under which each party must, not less than ninety days before the trial date or at such other time as the judge may order, make detailed written disclosure with respect to each expert witness retained to testify at trial, including "a complete statement of all opinions to be expressed and the basis and reasons therefor [and] the data or other information considered by the witness in forming the opinions."[7] Having those disclosures at hand should assist the parties and the judge in the process of identifying and narrowing issues. The time necessary for the parties to comply with the requirements of the rule, however—assembling all of the data and preparing complete written reports—is likely to delay the start of this process. The judge must consider how to make the most efficient use of this rule in each case. In most cases, however, the judge should be advised not to delay issue identification (particularly because a settlement may occur before the parties have incurred the expense of hiring experts and preparing their reports), but after disclosure has been completed, to consider further efforts to define and narrow the issues concerning expert evidence.

C. Narrowing the Issues—Use of Reference Guides

The process of defining issues should lead to the narrowing of issues. Some elements of the case may turn out not to be in dispute. For example, there may be no controversy about the plaintiff's exposure to the allegedly harmful substance, allowing that issue to be eliminated. Conversely, the plaintiff's ability to establish the requisite exposure may appear to be so questionable that it might usefully be singled out for early targeted discovery[8] and a possible motion for summary judgment.[9] Unless the judge takes the lead in probing for issues that may not be in dispute, or that may lend themselves to early resolution, the case is likely to involve much unnecessary work, cost, and delay.

The conclusions of a witness offering scientific testimony will generally be the product of a multistep reasoning process. By breaking down the process, the judge may be able to narrow the dispute to a particular step in the process, and

7. Fed. R. Civ. P. 26(a)(2)(B). Some courts have adopted alternative procedures. For a list of courts that have opted out of the provisions of Rule 26(a)(2), see Donna Stienstra, Implementation of Disclosure in Federal District Courts, with Specific Attention to Courts' Responses to Selected Amendments to Federal Rule of Civil Procedure 26 (Federal Judicial Center 1994).

8. Manual for Complex Litigation, Third, § 21.424 (forthcoming 1995) [hereinafter MCL 3d].

9. *See, e.g.*, Celotex Corp. v. Catrett, 477 U.S. 317 (1986).

thereby facilitate its resolution. Those steps, while generally not intuitively obvious to the non-expert, may be identified in the process of issue identification. Once that is done, it can readily be determined which steps are in dispute. As noted, the initial Rule 16 conference may be too early for the parties to be adequately prepared for this process. Nevertheless, the stage should at least be set for the narrowing of issues, though the process may continue as the litigation progresses.

The reference guides in this manual are intended to assist in the process of narrowing issues in the areas they cover.[10] By way of illustration, the Reference Guide on Forensic DNA Evidence facilitates narrowing a dispute over whether proffered evidence may be received by dividing an issue into five distinct subsidiary issues:

1. the validity of RFLP (Restricted Fragment Length Polymorphism) analysis;
2. the quantity and quality of the specific forensic sample;
3. the proficiency and quality control of the laboratory;
4. the comparison of DNA profiles; and
5. the estimation of the probability that the DNA profiles match by coincidence.

For each subsidiary issue, there is a series of suggested questions that will enable the judge to explore the methodology and reasoning underlying the expert's opinion.

The remaining reference guides cover additional areas in which expert evidence is frequently offered and disputed:

- The Reference Guide on Epidemiology identifies issues concerning the appropriateness of the research design, the definition and selection of the research population, the measurement of exposure to the putative agent, the measurement of the association between exposure and the disease, and the assessment of the causal association between exposure and the disease.
- The Reference Guide on Toxicology identifies issues concerning the nature and strength of the research design, the expert's qualifications, the proof of association between exposure and the disease, the proof of causal relationships between exposure and the disease, the significance of the person's medical history, and the presence of other agents.
- The Reference Guide on Survey Research identifies issues concerning the purpose of the survey and the method of its design, selection of the population and sample and assessment of the responses, design of ques-

10. The reference guides are not intended to be primers on substantive issues of scientific proof or normative statements on the merits of scientific proof.

tions, selection of the control group, interviews, data entry, and disclosure and reporting.

- The Reference Guide on Statistics identifies three issues: the design of the data collection process, the extraction and presentation of relevant data, and the drawing of appropriate inferences.
- The Reference Guide on Multiple Regression identifies issues concerning the analysis of data bearing on the relationship of two or more variables, the presentation of such evidence, the research design, and the interpretation of the regression results.
- The Reference Guide on Estimation of Economic Losses in Damage Awards identifies issues concerning expert qualification, characterization of the harmful event, measurement of loss of earnings before trial and future loss, prejudgment interest, and related issues generally and as they arise in particular kinds of litigation.

The scope of these reference guides is necessarily limited, but their format is intended to suggest analytical approaches and opportunities that judges may use in identifying and narrowing issues presented by controversies over scientific evidence. A judge may, for example, ask counsel for both sides to exchange and provide to the court a step-by-step outline of the experts' reasoning processes (following generally the pattern of the reference guides) for use at the conference at which issue definition and narrowing is discussed. If the written statements of expert opinions required by Federal Rule of Civil Procedure 26(a)(2) have been exchanged, the judge could direct each side to identify specifically each part of the opposing expert's opinion that is disputed and to state the specific basis for the dispute. A further conference should then be held after receipt of these statements to attempt to narrow the issues.

D. Limitations or Restrictions on Expert Evidence

As noted, Federal Rule of Civil Procedure 16(c)(4) specifically makes "the avoidance of unnecessary proof and of cumulative evidence, and limitations or restrictions on the use of testimony under Rule 702 of the Federal Rules of Evidence" a subject for consideration and appropriate action by the court at any conference. The timing of such action will depend on the circumstances of each case. Not enough may be known at the initial conference for judicial action, although it may be clear that on certain issues on which expert testimony is proposed, the trier of fact should have no need for such assistance. As issues are defined and narrowed, the judge should consider whether expert evidence will aid the trier of fact on specific issues and should at least indicate tentative views based on the information provided, which are subject to revision if further information makes that appropriate. As issues are eliminated, the need for expert testimony on those issues is also eliminated. Experts increase the cost of litiga-

tion substantially, and permitting their proliferation in a case may place an unfair burden on the party with limited resources.

The judge should also consider the number of expert witnesses permitted to testify. Some local rules and orders limit a party to a single expert on a particular scientific discipline, that is, a single orthopedist, oncologist, or rehabilitation specialist. The judge may place the burden of showing necessity for additional experts on the party proposing to offer them. In cases in which multiple parties are litigating the same issue or in consolidated cases, duplication of expert testimony can be avoided, both by limiting the parties on one side to one expert per discipline and by avoiding repetition of the same testimony on multiple occasions.

In determining the need for expert testimony in the case, the judge should also consider whether the same issues have been previously tried and adjudicated. Scientific or technological facts may have become sufficiently well established to warrant taking judicial notice. Res judicata or collateral estoppel may be available to foreclose particular issues, or expert testimony from earlier cases may be directly on point and available for use in the case, at least on stipulation.[11]

11. MCL 3d, *supra* note 8, § 21.33.

III. Use of Magistrate Judges, Special Masters, and Court-Appointed Experts

Federal Rule of Civil Procedure 16(c)(8) makes the referral of matters to a magistrate judge or a special master a subject for consideration at the conference. Although the rule does not specifically refer to court appointment of experts, subsection (c)(12) does call for consideration of "the need for adopting special procedures for managing potentially difficult . . . actions that may involve complex issues . . . or unusual proof problems." Cases involving scientific evidence may confront the court with the need to look for assistance.[12]

Many courts routinely refer the pretrial management of civil cases to magistrate judges. Some judges believe, however, that in complex cases, there are advantages in having pretrial management performed by the judge who will try the case; this promotes familiarity with the issues in the case and avoids the delay caused by appeals of magistrate judge rulings.[13] If pretrial management is nevertheless referred to a magistrate judge, he or she should keep the judge who will try the case apprised of developments affecting the complex issues in the case. A need for decisions by the trial judge may arise during the pretrial phase; for example, the decision to appoint an expert under Federal Rule of Evidence 706 or a special master under Federal Rule of Civil Procedure 53 is one the trial judge would have to make and therefore should not be deferred until the eve of trial.

The Supreme Court has taken a restrictive view of the trial judge's power to refer matters to a special master; reference to a special master under Rule 53(b) "shall be the exception and not the rule."[14] Nevertheless, masters have performed substantial services in complex litigation, including resolving privilege claims in massive document production, analyzing damage and other accounting data, and assisting in settlement negotiations. Appointment of a special master saddles the parties with additional and often substantial expense, however, and may therefore be expected to be viewed critically by appellate courts.[15]

12. For a discussion of issues surrounding the decision of a judge to invoke such assistance, see Jack B. Weinstein, *Ethical Dilemmas in Mass Tort Litigation*, 88 Nw. U. L. Rev. 469 (1994).

13. MCL 3d, *supra* note 8, § 21.53.

14. *See* La Buy v. Howes Leather Co., 352 U.S. 249, 256–58 (1957).

15. Prudential Ins. Co. of Am. v. United States Gypsum Co., 991 F.2d 1080, 1085 (3d Cir. 1993). For guidance with respect to the appointment and use of special masters in cases with scientific evidence, see Margaret G. Farrell, Special Masters, in this manual.

Under Rule 706, the court may on its own motion or the motion of a party appoint an expert witness. The court may appoint a person agreed on by the parties or make its own selection. Since the courts have no funds with which to compensate witnesses, the cost of a court-appointed expert is typically borne by the parties. The appointment of an expert may be for different purposes: it may be to testify, or it may be only to assist the judge in other ways in dealing with scientific issues.[16] Thus the functions of a court-appointed expert and those of a special master may well overlap. If the expert is to testify, it may be on an ultimate issue in the case or only on subsidiary scientific issues, such as the validity or reliability of methodology used by the parties' experts.[17] The timing of the decision whether to make an appointment can be critical. The appointment of an expert made too soon can result in needless expense; if an appointment is made too late, it may not be possible to locate, appoint, and instruct an expert without delaying the litigation.[18]

16. *See In re* Swine Flu Immunization Prods. Liab. Litig., 495 F. Supp. 1185 (W.D. Okla. 1980) (order appointing panel of medical experts to examine claimants and report to court).

17. *See, e.g.,* Renaud v. Martin Marietta Corp., 749 F. Supp. 1545, 1548 (D. Colo. 1990) (court-appointed expert testified to methodology used by plaintiffs to prove exposure to contaminated water), *aff'd,* 972 F.2d 304 (10th Cir. 1992).

18. For guidance with respect to the appointment and use of such experts, see Joe S. Cecil & Thomas E. Willging, Court-Appointed Experts, in this manual.

IV. Discovery and Disclosure

A. Discovery Control and Management[19]

If the judge has the parties' report on their prediscovery conference and has their discovery plan in hand, as noted, he or she will be well situated to establish control over discovery. The basic control mechanism for testifying experts is provided by Federal Rule of Civil Procedure 26(b)(4)(A), which states that parties are entitled to depose experts identified as trial witnesses but may do so only after the expert's report under Federal Rule of Civil Procedure 26(a)(2)(B) has been provided if one is required.[20] That report may be dispensed with by order of the court or stipulation of the parties.[21] While the court probably cannot preclude the parties from entering into such a stipulation,[22] under its inherent power it may be able to override a stipulation and order the disclosures called for by Rule 26(a)(2)(B).[23] There are compelling reasons for requiring these disclosures with respect to expert witnesses:

- The process of complying with Rule 26(a)(2)(B) will compel attorneys to consider carefully whether to designate an expert as a witness at all, because of the need to fully prepare the witness before disclosure, the risk

19. With respect to discovery control and management, see generally MCL 3d, *supra* note 8, § 21.4.

20. In addition, Fed. R. Civ. P. 26(b)(2) gives the court broad authority to limit the frequency and extent of discovery, including the length of depositions.

21. Fed. R. Civ. P. 26(a)(2)(C). The report under Fed. R. Civ. P. 26(a)(2)(B) is presumptively required of any "witness who is retained or specially employed to provide expert testimony in the case or whose duties as an employee of the party regularly involve giving expert testimony." This would normally exclude a treating physician. The court may by order, or the parties may by stipulation, exempt a case from this requirement.

22. Fed. R. Civ. P. 29 gives the parties the right to modify, without court order, the procedures or limitations governing discovery except for stipulations that would interfere with any time set for completion of discovery, hearing of a motion, or trial.

23. In addition to disclosing the identity of any person who may be used as an expert witness, a party must also disclose

> a written report prepared and signed by the witness. The report shall contain a complete statement of all opinions to be expressed and the basis and reasons therefor; the data or other information considered by the witness in forming the opinions; any exhibits to be used as a summary of or support for the opinions; the qualifications of the witness, including a list of all publications authored by the witness within the preceding ten years; the compensation to be paid for the study and testimony; and a listing of any other cases in which the witness has testified as an expert at trial or by deposition within the preceding four years.

Fed. R. Civ. P. 26(a)(2)(B).

of having to disclose the attorney's work product communicated to the witness, and the expense of preparing the requisite report and data;

- The information and materials required to be disclosed can facilitate the definition and narrowing of issues, both by enhancing the attorneys' preparation and by providing the judge with necessary information;
- Examination of the opposing expert witness's report may well lead to a decision that a deposition would serve no useful purpose; if a deposition is taken, however, having the report will expedite it;
- The disclosures will assist the court in making informed rulings limiting or restricting expert testimony;
- The disclosures will help counsel prepare for effective cross-examination and reduce the risk of surprise at trial, which often leads to delay and increased expense; and
- The disclosures may promote early settlement.

Thus, by following the scheme of the Federal Rules, the court will be able to reduce unnecessary discovery activity, control other activity directed at expert witnesses, and advance effective case management. In the scheduling order issued in connection with the initial conference, the court should prescribe the sequence and timing of these disclosures; generally the party with the burden on an issue should make its disclosure before other parties are required to make theirs on that issue.

Compliance with Rule 26(a)(2)(B) requires disclosure not only of data or information on which the expert relied in reaching the opinions but also of all data and material "considered by the witness in forming the opinions." As a result, "litigants should no longer be able to argue that materials furnished to their experts to be used in forming their opinions—whether or not ultimately relied upon by the expert—are privileged or otherwise protected from disclosure when such persons are testifying or being deposed." [24]

The obligation of disclosure under the rule highlights the importance of protecting and preserving records, documents, and other materials in the possession or under the control of the parties. Notes and records of tests and experiments that cannot be duplicated are an illustration of material of potentially crucial importance in cases with scientific evidence. The court may therefore want to consider the prompt issuance of an order providing for the preservation and nondestruction of documents and other materials potentially relevant to the litigation. Such an order should only be entered after consultation with counsel, and it should take into account the need to accommodate normal retention policies. [25]

Compliance with the rule also requires that the expert's report, as well as any information provided by the expert through a deposition, be supplemented if the

24. Fed. R. Civ. P. 26(a)(2)(B) advisory committee's notes.
25. MCL 3d, *supra* note 8, § 21.442.

party learns that the information so disclosed is in some material respect incomplete or incorrect (even if it was complete and correct when initially provided). Since it is not uncommon for an expert to modify an opinion in the course of litigation, the parties need to be reminded of their obligation to give timely notice to the other side. The court's scheduling order should make provision for periodic review and updates of discovery responses and disclosures.

Discovery by deposition or interrogatory may be directed at nontestifying experts, that is:

> an expert who has been retained or specially employed by another party in anticipation of litigation or preparation for trial and who is not expected to be called as a witness at trial [but] only as provided in Rule 35(b) [relating to physical or mental examinations] or upon a showing of exceptional circumstances under which it is impracticable . . . to obtain facts or opinions on the same subject by other means.[26]

The purpose of this restriction is to avoid penalizing a party that has sought expert assistance early in the litigation and to prevent the opponent from gaining the benefit of the other side's diligence. Exceptional circumstances may arise, however, where an expert, for example, has conducted destructive tests relevant to the issues but incapable of being repeated or where one side has retained all qualified experts.[27]

Use of court-appointed experts also raises difficult issues concerning discovery.[28] An expert appointed to testify as a witness under authority of Federal Rule of Evidence 706 is subject to deposition by any party under terms of the rule.[29] But when the expert is appointed as a technical advisor under the inherent authority of the court, there is no right to depose the expert.[30] The opportunity for discovery of an expert is less clear when the expert is appointed under Rule 706 and is not only offering testimony as a witness but also serving as a technical advisor. To the extent that the duties of the appointed expert depart from those of a testifying witness, courts have found that the appointment is similar to that of a technical advisor and have restricted the opportunity for discovery of the expert.[31]

Rule 26(b)(4)(C) also requires payment of a reasonable fee to an expert for time spent responding to discovery and, in the case of a nontestifying expert, also

26. Fed. R. Civ. P. 26(b)(4)(B).

27. For a discussion of discovery directed at experts appointed by the court under Fed. R. Evid. 706 or at special masters appointed under Fed. R. Civ. P. 53, see Joe S. Cecil & Thomas Willging, Court-Appointed Experts § V.C, and Margaret G. Farrell, Special Masters § II.B, in this manual.

28. Since special masters perform many of the duties of a judge, including oversight of discovery, the right of discovery concerning information considered by a special master is quite limited. Nevertheless, the order appointing the special master may specify the extent of access to information supporting the master's findings. *See* Margaret G. Farrell, Special Masters § IV.C, in this manual.

29. Fed. R. Evid. 706(a) ("[T]he [court-appointed] witness' deposition may be taken by any party; and the witness may be called to testify by the court or any party.").

30. Reilly v. United States, 863 F.2d 149, 154–56 (1st Cir. 1988).

31. Renaud v. Martin Marietta Corp., 972 F.2d 304, 308 n.8 (10th Cir. 1992); *In re* Joint E. & S. Dists. Asbestos Litig., 151 F.R.D. 540, 544 (E.D.N.Y. 1993), *appeal dismissed*, 14 F.3d 151 (2d Cir. 1994).

of a fair portion of the expenses incurred by the opposing party in obtaining facts and opinions from the expert. Expert discovery in science-rich cases may have other costly aspects, such as making computer runs or performing tests. The court has authority under Rule 26(c)(2) to condition such discovery upon payment of expenses by the party who should be appropriately charged.[32]

B. Protective Orders and Confidentiality

Protective orders may become an issue in expert discovery in two ways: a party may seek to bar public disclosure of matters disclosed in the course of an expert's deposition, or a party may seek access to discovery material from related litigation under protection of an order previously issued.[33]

Rule 26(c)(5) permits a court, on motion of a party or of the person from whom discovery is sought, and after the parties have conferred to attempt in good faith to resolve the dispute, to issue a protective order for good cause shown and as justice requires. A protective order may, among other things, bar disclosure of discovery (including limiting a person's presence at the deposition), permit disclosure only on specified conditions or require sealing of the deposition or other information. The rule specifically authorizes an order to protect trade secrets or other confidential research, development, or commercial information. When the information to be protected cannot be conveniently isolated from other information, the court may issue an umbrella order covering the entire deposition, subject to later order releasing information not entitled to protection. Umbrella orders expedite discovery and reduce disputes, but they can be controversial, as when requests are made for the release of information covered by the order. Since the order was entered without a particularized showing of need, little showing is required to obtain modification.[34]

Commonly, parties stipulate to such orders, in which case the question arises whether they can deny access by third parties to the information. Discovery materials that have not been used in trial or court proceedings are not subject to the public's First Amendment right of access.[35] However, the practice of sealing the record of a case as a part of a negotiated settlement is coming under increasing scrutiny.[36] While a guarantee of confidentiality facilitates settlement, it collides with other policy considerations, such as the interest in access to data affecting

32. *See* MCL 3d, *supra* note 8, § 21.422.

33. MCL 3d, *supra* note 8, § 21.43.

34. *In re* "Agent Orange" Prod. Liab. Litig., 104 F.R.D. 559, 568–70 (E.D.N.Y. 1985), *aff'd*, 821 F.2d 139 (2d Cir.), *cert. denied*, 484 U.S. 953 (1987).

35. Seattle Times Co. v. Rhinehart, 467 U.S. 20 (1984).

36. *See* Anne-Therese Bechampes, Note, *Sealed Out-of-Court Settlements: When Does the Public Have a Right to Know?,* 66 Notre Dame L. Rev. 117 (1990). *See also* Arthur R. Miller, *Confidentiality, Protective Orders, and Public Access to the Courts,* 105 Harv. L. Rev. 428 (1991); Richard L. Marcus, *Myth and Reality in Protective Order Litigation*, 69 Cornell L. Rev. 1 (1983).

public health and safety and assisting other litigation, government regulatory efforts, and public information.[37]

These considerations are relevant to the second prong of the issue: gaining access to discovery material in related litigation. Obtaining material such as the earlier deposition of an expert in the pending case may avoid duplicative discovery.[38] An analogous situation is presented in multidistrict litigation, in which transferee courts have vacated protective orders previously entered by a transferor court.[39]

C. Discovery of Nonretained Experts

A need for information in cases with scientific evidence may lead parties to seek discovery by subpoena from experts who have not been retained in the litigation. Federal Rule of Civil Procedure 45(c)(3)(B)(ii) permits the court to quash a subpoena that "requires disclosure of an unretained expert's opinion or information not describing specific events or occurrences in dispute and resulting from the expert's study made not at the request of any party." However, if the party seeking the information shows a substantial need for it that cannot be otherwise met without undue hardship and assures that the person subpoenaed will be reasonably compensated, the court may order compliance under specified conditions. As the Advisory Committee Notes point out, this provision was intended to protect the intellectual property of nonretained experts: "The rule establishes the right of such persons to withhold their expertise, at least unless the party seeking it makes the kind of showing required for a conditional denial of a motion to quash . . . ; that requirement is the same as that necessary to secure work product under Rule 26(b)(3) and gives assurance of reasonable compensation."[40]

D. Videotape Depositions

Federal Rules of Civil Procedure 30(b)(2) and (3) permit a party, unless otherwise ordered, to record a deposition by audiotape, videotape, or stenographic means; any other party may designate on notice any other method to record the deposition in addition to the method specified by the person taking the deposition.[41] Videotape can be particularly useful for taking an expert's deposition in the following instances:

37. Legislation expanding public access has been adopted in some states and is under consideration in others and in Congress.

38. For orders granting access to previously discovered materials, see Wilk v. American Medical Ass'n, 635 F.2d 1295, 1301 (7th Cir. 1980); Cipollone v. Liggett Group, Inc., 785 F.2d 1108, 1121–23 (3d Cir. 1986). *See* Marcus, *supra* note 36, at 41–53.

39. *In re* Upjohn Co. Antibiotic Cleocin Prods. Liab. Litig., 664 F.2d 114 (6th Cir. 1981).

40. Fed. R. Civ. P. 45(c)(3)(B)(ii) advisory committee's note. *See In re* American Tobacco Co., 880 F.2d 1520, 1527 (2d Cir. 1989); *see also* Mark Labaton, Note, *Discovery and Testimony of Unretained Experts*, 1987 Duke L.J. 140, and Richard L. Marcus, *Discovery Along the Litigation/Science Interface*, 57 Brook. L. Rev. 381 (1991).

41. *See* MCL 3d, *supra* note 8, § 21.452.

- An expert may become unavailable for the trial because of other commitments, and a subpoena may be neither feasible nor desirable; videotape will provide a more interesting and meaningful presentation at trial than reading the transcript.
- The expert's testimony may be needed at separate trials in multiparty litigation or where the litigation has been bifurcated and the testimony is relevant to both phases.
- The expert's testimony may relate to matters that can be demonstrated on videotape but not in court, such as the operation of large equipment, the physical characteristics of a location, the conduct of a test, or the reconstruction of an accident; videotape permits the witness to point out relevant matter and illustrate the testimony.

When such depositions are contemplated, problems concerning their use at trial should be resolved before they are taken.

V. Motion Practice

Scientific evidence raises two issues that may be addressed by motions:

1. admissibility under the rules of evidence; and
2. sufficiency as a matter of law to sustain a verdict for the proponent.

The two issues tend to become intertwined in the course of litigation but need to be considered separately. The exclusion of proffered evidence does not necessarily entitle the objector to judgment, although the result may be ultimately to leave the proponent unable to prove an essential element of its case. Even if admitted, however, the evidence may be legally insufficient, warranting entry of judgment as a matter of law before or at trial.[42]

Whether the ruling is on admissibility arising from a motion in limine or on summary judgment, the order should state the judge's findings (where appropriate) and reasons. Because such a ruling is likely to be reviewed on appeal, the court should provide a clear and complete statement of its legal and factual basis. The parties and the appellate court should not be left to guess which of several potentially applicable rules the court relied on and how it determined the factual issues.[43]

A. Motions in Limine

Objections to evidence raised before trial are best presented by a motion in limine under Federal Rule of Evidence 104(a). In its recent decision in *Daubert*, the Supreme Court stated:

> Faced with a proffer of expert scientific testimony, then, the trial judge must determine at the outset, pursuant to Rule 104(a), whether the expert is proposing to testify to (1) scientific knowledge that (2) will assist the trier of fact to understand or determine a fact in issue.[44]

42. *See generally* William W Schwarzer et al., The Analysis and Decision of Summary Judgment Motions: A Monograph on Rule 56 of the Federal Rules of Civil Procedure (Federal Judicial Center 1991). *See also* Margaret A. Berger, Evidentiary Framework § I.C.3, in this manual.

43. *See In re* Paoli R.R. Yard PCB Litig., 916 F.2d 829, 836 & n.3 (3d Cir. 1990), *cert. denied*, 499 U.S. 961 (1991).

44. Daubert v. Merrell Dow Pharmaceuticals, Inc., 113 S. Ct. 2786, 2796 (1993) (footnotes omitted). Issues concerning the admissibility of such evidence are discussed at length in Margaret A. Berger, Evidentiary Framework § I.C.2, in this manual.

Rule 104(a) is the court's vehicle for determination of preliminary questions concerning the qualifications of a witness, the existence of a privilege, or the admissibility of evidence. The court may, if necessary, conduct a hearing (which must be outside the hearing of the jury), and it is not bound by the rules of evidence.[45] When the admissibility of expert evidence is pivotal to a motion for summary judgment, a Rule 104(a) hearing should precede consideration of the motion.[46] A ruling on admissibility may also be important in jurisdictions where the court may be precluded from granting judgment as a matter of law after trial on the ground that it had erroneously admitted expert testimony.[47]

By requiring the parties to follow the disclosure procedure under Federal Rule of Civil Procedure 26(a)(2), the court will have before it the complete statement of the opinions to which the expert will testify and their factual basis. This material, supplemented by memoranda addressed to the evidentiary issues, will provide a helpful record for rulings under Rule 104(a).[48]

B. Summary Judgment

The exclusion of critical expert evidence may leave the party bearing the burden of proof unable to prove an essential element of its case, thus laying the foundation for summary judgment;[49] or critical expert evidence may be so conclusory that it fails to raise a genuine issue of fact. As the Court stated in *Daubert*:

> Additionally, in the event the trial court concludes that the scintilla of evidence presented supporting a position is insufficient to allow a reasonable juror to conclude that the position more likely than not is true, the court remains free to direct a judgment, Fed. Rule Civ. Proc. 50(a), and likewise to grant summary judgment, Fed. Rule Civ. Proc. 56.[50]

At the initial and subsequent Rule 16 conferences, the court should consider whether a summary judgment motion is appropriate and, if so, when it should be made.[51] Discussion with counsel of the bases for a proposed summary judgment can forestall the filing of motions, which, because they implicate disputed facts, are a waste of resources.[52] Timing is important because if the motion is

45. Fed. R. Evid. 104(a), (c).

46. *In re Paoli,* 916 F.2d at 837, 854–55 (proponent of expert witness entitled to notice of grounds for exclusion and opportunity to remedy deficiency).

47. *See* Jackson v. Pleasant Grove Health Care Ctr., 980 F.2d 692, 695–96 (11th Cir. 1993).

48. For a discussion of the burden of demonstrating the need for a hearing under Rule 104(a) concerning deficiencies in expert testimony, see the discussion of judicial screening in Margaret A. Berger, Evidentiary Framework § I.C.2, in this manual.

49. *See* Celotex Corp. v. Catrett, 477 U.S. 317 (1986).

50. Daubert v. Merrell Dow Pharmaceuticals, Inc., 113 S. Ct. 2786, 2798 (1993).

51. Fed. R. Civ. P. 16(c)(5).

52. *See* Edward Brunet, *The Use and Misuse of Expert Testimony in Summary Judgment*, 22 U.C. Davis L. Rev. 93 (1988).

made too early, it may lack the necessary record for decision; if the motion is delayed, it loses the potential benefit of reducing cost and delay.[53]

When a summary judgment motion is properly supported, Federal Rule of Civil Procedure 56(e) requires the opposing party to present "specific facts [that would be admissible in evidence] showing that there is a genuine issue for trial."[54] Summary judgment motions turning on the sufficiency of scientific proof raise the question whether an expert's opinion may satisfy the requirement of Rule 56(e). Federal Rule of Evidence 705, as amended in 1993, permits an expert to testify "in terms of opinion or inference and give reasons therefor without first testifying to the underlying facts or data, unless the court requires otherwise." The purpose of the rule is to eliminate the much criticized practice of asking experts hypothetical questions, leaving it to cross-examination at trial to bring out relevant facts.[55] That purpose does not support importing the rule into summary judgment practice, and the rule's text, as revised in 1993, makes clear that the expert can be required to disclose the factual basis for an opinion. Conclusory expert affidavits therefore will not be sufficient to meet the burden on the party opposing the motion,[56] although an affidavit stating an adequately supported opinion may suffice to raise a triable issue.[57]

53. *See Celotex*, 477 U.S. at 322 (the opponent of the motion is entitled to "adequate time for discovery" needed to oppose the motion); William W Schwarzer & Alan Hirsch, *Summary Judgment After Eastman Kodak*, 45 Hastings L.J. 1, 17 (1993). The disclosures required under Fed. R. Civ. P. 26(a)(2) should help in developing an adequate record.

54. Under Fed. R. Evid. 703, an expert may base an opinion on hearsay evidence "[i]f of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject."

55. Fed. R. Evid. 705 advisory committee's note.

56. *See* Mendes-Silva v. United States, 980 F.2d 1482, 1488 (D.C. Cir. 1993).

57. Bulthuis v. Rexall Corp., 789 F.2d 1315, 1356–57 (9th Cir. 1985).

VI. The Final Pretrial Conference

The manner in which judges use pretrial conferences differs widely, and this manual offers no prescription for their effective use. A judge may conduct a series of conferences between the initial conference and the final pretrial conference or leave all unfinished business until the final conference. What is important is that the management issues affecting expert evidence be addressed and disposed of in the most effective manner appropriate for the case. The desired objective is that, if the case does not settle, the parties be fully prepared for trial and the trial be free of wasted effort.

Much of the subject matter discussed in connection with the initial conference may, as noted, carry over to subsequent conferences, including the final pretrial conference. Even if progress was made at the initial conference in the defining and narrowing of issues, developments during the discovery phase of the case will enlarge the parties' information and refine their positions. New issues may appear and others may disappear. It is therefore critical that the judge continue the effort to define and narrow issues and that the final pretrial conference result in a definitive statement of the issues to be tried.

The court may want to consider a number of possible techniques to identify and narrow the differences between opposing experts, including the following:

- Have each party mark for the opposition the parts of the opposing expert's report with which they agree and disagree, and indicate critical issues that the opposing expert has not addressed;
- Direct counsel to have their experts meet and prepare a joint statement summarizing the bases for their disagreement;
- Convene a conference attended by experts and counsel to identify and attempt to narrow the bases for their differences, leading to an appropriate preliminary instruction to the jury; and
- Explore the possibility of a joint report by the experts.

The final pretrial order should state clearly and specifically the issues of scientific evidence to be tried; it should include a preclusion order barring expert evidence not previously disclosed;[58] and it should make provision for trial proce-

58. Fed. R. Civ. P. 37(c)(1).

dures appropriate for the case that will enhance comprehension and expedite the trial (see the following section for discussion).

The final pretrial conference offers the last clear chance for settlement. Cases frequently settle at this stage, when the parties are fully informed about their case and their opponent's case. In cases with difficult scientific evidence, the court may want to consider appointing a mediator with relevant experience and expertise to conduct settlement negotiations. The court may also want to explore various alternative dispute resolution procedures.

In trials involving scientific evidence, the court and the parties are confronted with particular challenges, arising from the difficulties of presenting the case in a comprehensible and efficient manner. Techniques for enhancing comprehension and avoiding unnecessary cost and delay are generally known; while for the most part such techniques are not novel, they are not as widely used as they might be.[59] Judges as well as attorneys tend to resist change in their accustomed ways of doing things and often are disinclined to risk innovation even when the need for reform is demonstrable. What follows is a brief summary of the principal techniques judges have found useful in enhancing comprehension of the case and improving efficiency.

A. Trial Procedures

- Structure the trial. The trial may be bifurcated, separating the trial of issues, such as general causation, specific causation, and damages; or the trial may be structured to try one issue at a time, where the jury returns a verdict before the trial resumes; or the jury may be directed to return seriatim verdicts at the end of the trial, thereby deliberating on only one issue at a time.[60]
- Limit the scope of the trial. The judge can limit the scope of the trial by limiting the number of expert witnesses to avoid duplicate or unnecessary proof. Any reduction in the volume of proof presented to jurors will enhance their capacity to comprehend.
- Limit the length of the trial. Similarly, the judge can place limits on the amount of time allowed each side for direct examination and cross-examination. This, too, will reduce the volume of proof and enhance comprehension.
- Arrange a tutorial for the judge and jury before the trial begins, conducted by neutral experts or experts chosen by the parties, to explain noncontroversial fundamentals of complex scientific issues.

59. *See generally* MCL 3d, *supra* note 8, §§ 21.6, 22.2–22.4; William W Schwarzer, *Reforming Jury Trials*, 1990 U. Chi. Legal F. 119.

60. MCL 3d, *supra* note 8, § 21.68.

- Give the jury preliminary instructions at the start of the trial and explain the issues they will have to decide; this will make the evidence more intelligible to jurors.
- Permit jurors who want to take notes to do so.

B. Presentation of Evidence

- Eliminate legal and other jargon. Lawyers, judges, and experts use technical jargon, creating obstacles to jury comprehension. The judge should give instructions to participants before trial and repeat them from time to time as necessary. The judge may find it necessary to ask witnesses to translate their statements at trial into plain English.
- Have experts testify in succession; in lengthy trials, the jury's memory of earlier testimony may have faded when an opposing expert is called later, making it difficult for them to compare and evaluate the testimony.[61]
- Use summaries of voluminous data whenever possible.[62]
- Encourage stipulations by the parties on matters not reasonably disputable. A stipulated summary of a deposition, for example, can avoid the need for a lengthy reading of the transcript.
- Use visual and other teaching aids (models, pictures, films, or demonstrations) to explain complicated concepts.
- Provide jurors with notebooks containing glossaries of terms, fact stipulations, key exhibits, chronologies or time lines, a list of witnesses, and other reference material that will assist comprehension.
- Permit jurors to ask questions under controlled conditions; jurors may, for example, be permitted to ask for clarification when they do not understand some part of an expert's testimony.
- In bench trials, present the direct testimony of experts in written narrative form, subject to cross-examination.[63]

61. Fed. R. Evid. 611(a) permits the court to vary the order of calling witnesses.
62. Fed. R. Evid. 1006.
63. The reports under Fed. R. Civ. P. 26(a)(2) can serve this purpose.