

Court Appointed Scientific Experts

A Handbook for Experts

Version 3.0

Dear Dr.

Thank you for agreeing to participate in *Court Appointed Scientific Experts (CASE)*, a demonstration project of the American Association for the Advancement of Science (AAAS). This innovative project is intended to assist federal trial judges in identifying highly qualified scientists and engineers to serve as court-appointed experts in cases where the judge believes that assistance or information beyond the traditional, adversarial method will serve the interests of a complete, balanced and objective perspective on science and technology issues. I am pleased that the AAAS will serve as the link between the federal judiciary and the scientific/engineering communities.

Scientific and technical issues are increasingly important in federal litigation. In addition, federal judges have a “gatekeeper” role to assure that scientific and technological evidence is based on scientifically valid and relevant reasoning and methodology. In certain cases, input from a highly qualified, court appointed expert may be helpful to the court in reaching decisions that are sound in science.

While federal judges have long had the authority to appoint experts, there has been no ready resource to which they could turn. *CASE* provides an institutional link between the judiciary and the scientific community by identifying highly qualified scientists as potential court appointed experts.

This handbook is intended to provide you with information about *CASE*, the court system, the types of assistance that court appointed experts can render, and the independent evaluation being conducted by the Federal Judicial Center. If you have any questions, please contact Jessica Wyndham, the Program Director, at 202-326-6604. Again, thank you very much for your participation. It is a valuable public service.

Sincerely,

Pamela Ann Rymer
Chair, Project Advisory Committee
Court Appointed Scientific Experts

Purpose of the *Handbook for Experts*

This handbook is intended to assist experts who have been appointed by the court to serve as an expert for the judge trying the case. Because these experts have been recommended to the judge by the American Association for the Advancement of Science's *Court Appointed Scientific Experts (CASE)* project, many of them may have little or no familiarity with the structure and procedures of civil litigation in American courts. This guide provides background on the litigation process, in general, as well as explanations of specific aspects of litigation, such as depositions and testimony, and advice on how to fulfill the duties assigned by the court.

The Handbook was prepared with the assistance of *CASE*'s Education Subcommittee and with the advice of the *CASE* Advisory Committee. A list of the members of these committees, as well as *CASE* staff, can be found at the end of the Handbook.

TABLE OF CONTENTS

Welcome from The Honorable Pamela Ann Rymer

Purpose of the *Handbook for Experts*

- I. About the American Association for the Advancement of Science (AAAS)
- II. *Court Appointed Scientific Experts (CASE)*, a Demonstration Project
 - A. History and Goals of *CASE*
 - B. Project Structure
- III. The Civil Litigation Process
 - A. Introduction
 - B. The Pretrial Process
 - C. Court Appointed Experts
 - D. The Trial
- IV. Fulfilling Your Duties as a Court Appointed Expert
 - A. Make Sure You Understand Your Assignment
 - B. Learn and Follow the Court's Rules
 - C. Be Forthcoming About Potential Conflicts of Interest
 - D. Prepare a Written Report if Required
 - E. Prepare to and Testify if Necessary
- V. Being an Expert
 - A. Conflicts of Interest
 - B. Expert Witness Report
 - C. Testimony
- VI. References/Suggested Readings
- VII. Glossary
- VIII. Education Subcommittee
- IX. Advisory Committee
- X. Project Staff

I. THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

The American Association for the Advancement of Science (AAAS) is the world's largest general scientific and engineering society. Founded in 1848, AAAS has approximately 140,000 individual members and close to 300 affiliated scientific and engineering societies and academies of science. Well known as the publisher of *Science*, we have an active program agenda that pursues the Association's dedication to improving the effectiveness of science in the promotion of human welfare and have long been in the forefront in addressing a broad range of issues in science policy and science education. Working cooperatively with the American Bar Association since 1974, AAAS has become a leader on issues at the intersection of science and the law.

II. COURT APPOINTED SCIENTIFIC EXPERTS (CASE)

A. HISTORY AND GOALS

As judges increasingly deal with the challenges of litigation that present complex scientific questions, many express concern regarding the objectivity and reliability of parties' experts. In a 1998 survey of federal judges conducted by the Federal Judicial Center (FJC), the education and research arm of the federal judiciary, judges were asked about problems associated with experts. "Experts abandon objectivity and become advocates for the side that hired them" was the most frequently cited problem.

One way in which this problem can be addressed is through more frequent use of court appointed experts. Federal judges have long had the inherent authority to appoint their own advisors and sometimes use this authority. In 1975, Congress codified this provision when it revised the *Federal Rules of Evidence*. At that time, it adopted Rule 706, which provides judges the authority to appoint their own experts, even without the consent of the parties. A 1993 survey conducted by the FJC demonstrated that most federal judges (87 percent) believed that in some cases it would be useful to appoint their own expert. Nevertheless, only 20 percent of the judges had ever appointed an expert. One reason for this disparity is that judges wishing to appoint an expert lack a procedure for locating scientists who are both independent and knowledgeable. Perhaps for that reason, judges responded favorably to the notion that it would be useful if scientific societies would assist the court in identifying suitable individuals. This idea is consonant with the FJC's *Manual for Complex Litigation, Third Edition*'s call for "professional organizations and academic groups" to assist the courts by providing "qualified, willing, and available persons."

More than a decade ago, AAAS began to study ways in which it might help courts meet the challenge of addressing the complex scientific, medical, and technical issues they faced. In 1988, the Carnegie Commission on Science, Technology, and Government was established to

study the mechanisms by which each branch of government incorporates scientific and technological knowledge into its decisions and to propose improvements in process and organization. In 1990, the Commission asked AAAS to contribute to its study by recommending ways in which scientific and engineering societies could help improve the scientific advice available to the federal courts. AAAS appointed a special task force to respond to this charge. The task force included representatives from the legal community, as well as from scientific and engineering societies.

The task force's September 1991 report recommended the implementation of a demonstration project to test the feasibility of establishing a coordinating mechanism that would respond to requests from federal judges to identify scientists and engineers who could serve as court appointed experts. In its report on Judicial and Regulatory Decision Making, the Commission "encouraged and supported a project of the ABA/AAAS National Conference of Lawyers and Scientists to develop mechanisms that would enable the scientific community to identify potential expert witnesses."

AAAS followed through on the recommendation by meeting extensively with federal judges; attorneys from the plaintiffs' and defense bars and from academia and the federal government; and scientists and engineers. AAAS heard diverse views and perspectives, but there was substantial support for a demonstration project from the federal judges, while the scientists and engineers expressed confidence that their colleagues would cooperate in implementing a project of this type.

Concurrent with these activities, opinions issued by the Supreme Court reinforced the need for court appointed experts. Specifically, in its 1993 decision in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, the Court found that where scientific expert testimony is proffered, the trial judge "must make a preliminary assessment of whether the testimony's underlying reasoning or methodology is scientifically valid and properly can be applied to the facts at issue." The Court made passing reference to the use of a court appointed expert to assist the judge in this task, noting that "Rule 706 allows the court at its discretion to procure the assistance of an expert of its own choosing."

In the Court's subsequent 1997 decision in *General Electric Co. v. Joiner*, Justice Stephen Breyer expanded on that reference in a concurring opinion. Quoting an amicus brief of the *New England Journal of Medicine*, he wrote: "[A] judge could better fulfill his gatekeeper function if he or she had help from scientists. Judges should be strongly encouraged to make greater use of their inherent authority...to appoint experts....Reputable experts could be recommended to courts by established scientific organizations." AAAS was specifically cited as an appropriate organization to make such recommendations.

Finally, speaking at the 1998 AAAS Annual Meeting, on the occasion of the Association's 150th anniversary, Justice Breyer fully endorsed the then proposed AAAS project, saying: "[AAAS has] offered their help. We in the legal community should accept that offer...The result, in my view, will further not only the interests of truth but also those of justice."

Despite the vital role the judicial branch plays in American society, many scientists are reluctant, even unwilling, to participate in judicial proceedings as an expert in judicial proceedings. This reluctance may stem from the discomfort many scientists feel about the type of discourse that may occur in the adversarial proceedings that mark the American style of litigation. Further, many scientists hold a negative view of fellow scientists who earn most or all of their income from serving as experts to litigants. This reluctance is unfortunate because cases being heard in federal courts require the most knowledgeable and objective scientific information to arrive at a principled resolution of matters in dispute.

This country's very best scientists and engineers often include public service as an essential part of their career responsibilities. Through *CASE*, AAAS hopes to persuade highly respected scientists and engineers to offer their experience and expertise in resolving one of the most important societal challenges of our times, the just resolution of disputes that may involve novel, complex, and emerging areas of scientific study. *CASE* will enable judges to obtain highly qualified, objective, and independent scientists and engineers so that the courts will have the best information before them and can resolve these disputes in a principled and reasoned manner. One of our goals is to provide a service that judges will find useful, as difficult technical disputes more frequently come before them. Just as importantly, *CASE* also provides scientists and engineers with the opportunity to render a valuable public service while maintaining the professional objectivity that is an important aspect of science.

B. PROJECT STRUCTURE

Recruitment and screening of experts. *CASE* staff identifies experts on a case-by-case basis in response to specific requests from judges. In addition to database searches, we call on colleagues in scientific and engineering societies and educational organizations. We have already formed working relationships with several such societies – including the National Academy of Sciences, the Institute of Medicine and the National Academy of Engineering – and are forging more partnerships. These societies stand ready to use their contacts and knowledge of their members to assist us.

Additionally, we have appointed a distinguished Recruitment and Screening Panel, consisting of 26 individuals from a variety of scientific and technical disciplines. These scientists and engineers not only have extensive acquaintances within their disciplines but can also call on colleagues to recommend highly qualified scientists for court appointment. Additionally, the Panel will help staff vet candidates whose names come from other sources. It is important that we ensure that the names we forward to the court are truly knowledgeable in the area of concern to the judge, are well regarded among their colleagues and, equally important, can communicate highly technical information to a lay audience.

CASE attempts to provide judges with two or three names for every request. While staff recommends experts, it is the judge alone who makes the selection.

Education of experts and judges. In addition to this *Handbook for Experts*, CASE staff has prepared a *Handbook for Judges*. Because very few judges have ever used their authority to appoint their own expert, that handbook offers suggestions that may be helpful in managing pretrial and trial proceedings, thus enhancing the likelihood of a successful experience. Judges using AAAS-recommended experts will also receive a copy of the *Handbook for Experts*, so that they will be familiar with the information made available to the experts.

Conflict of interest issues. In seeking "independent experts," CASE attempts to provide judges with individuals disinterested in the outcome of the litigation at issue. A scientist qualified to be an expert is likely to have existing opinions regarding the scientific issues in question. Therefore, the expert's overriding goal is not to approach the scientific issues in the case without opinion, but to be open-minded and to educate the judge and/or jury on the issues while being independent of the case's outcome.

Nevertheless, we screen potential experts for obvious conflicts of interest. Not only do we ask questions about employment history and financial interests, but we also seek information about affiliations with professional societies or advocacy organizations that may have formal positions relevant to the dispute before the court. Decisions on whether any particular situation constitutes an unacceptable bias or conflict are left to the judge.

It is equally important that, during the course of their service, experts appointed by the judge do not engage in professional activities that could compromise the appearance of disinterestedness essential to their credibility. These situations may arise because scientists often have a different view of what constitutes a "conflict" than that commonly used in judicial settings. CASE staff provides the experts with general guidelines and encourages the judges with whom we work to issue clear, written instructions upon appointment of an expert.

Evaluation of project. An important aspect of *Court Appointed Scientific Experts* is the evaluation that will be conducted by the Federal Judicial Center, the education and research arm of the federal judiciary. Part of the evaluation will be quantitative and descriptive, and will answer such questions as the number of requests received, the types of cases and the kinds of experts sought, and how the experts were used. The qualitative aspect of the evaluation will involve interviews with individuals who have participated in CASE, including judges, experts, and project staff. This part of the evaluation will focus on how the project worked, where it succeeded, and what improvements can be made in the process. Your willingness to play a role in this process is an important aspect of your participation in the project.

III. THE CIVIL LITIGATION PROCESS

A. INTRODUCTION

Our court system adjudicates both civil disputes and criminal prosecutions. Because courts rarely appoint their own experts in criminal cases, this discussion will be limited to civil litigation. (Note: often the terms *court* and *judge* are used interchangeably. Thus, the statement “The *court* will decide” means the same thing as “The *judge* will decide.”) Civil litigation occurs in both state and federal courts, but the vast majority of cases are filed in state courts. The litigation process is governed by statutes and rules adopted by legislatures and courts. While there are certain differences between the process in state and federal courts, the basic elements are the same. The purpose of this discussion is to introduce you to those elements.

Although most cases are resolved by settlement and never reach trial, those cases that receive the most attention are those tried in a contentious atmosphere. The American judicial system rests on the premise that the interests of parties will be best served – and the truth most likely found – through an adversarial process. This means that each party will be represented by an attorney who will prepare and present that party’s case as effectively and vigorously as possible, with the judge playing an essentially passive role, somewhat like an umpire. Although many other countries use a system in which judges play a more active role in the litigation, including making the final decision, our system developed in the context of ensuring that all people can obtain a forceful presentation of their interests.

B. THE PRETRIAL PROCESS

Before discussing the pretrial process, it is important to stress again that only about five percent of all civil cases filed ever get to trial. Nevertheless, some of the stages discussed below are common to all cases, even if they are settled or dismissed before trial. The following are descriptions of the considerable activity that occurs before trial.

The complaint. A case begins with the filing of a complaint, a written document in which a plaintiff states, generally quite briefly, the alleged facts of his or her claim. In this complaint the plaintiff alleges some harm that has been done to him or her. The complaint is filed in a court that has jurisdiction of the case, that is, a plaintiff cannot simply file anywhere. Jurisdiction refers to the court’s authority to adjudicate a case.

Responsive pleadings. Once the complaint is filed, the defense has to respond. It can file an answer in which it may deny what plaintiff claims and may also raise certain legal defenses, such as that the complaint was filed too late (called the “statute of limitations”). The complaint and the answer (together called the pleadings) frame the dispute between the parties. The defendant can also file a motion arguing that the court should dismiss the case on a legal ground. Normally motions are decided by the court on the basis of the papers filed by the parties and do not involve witnesses (though they may require affidavits or declarations). There are many legal grounds for filing motions. The most common motion is for summary judgment. Such a motion asserts that there are no disputed issues of material fact and that, given the law, the case can be decided by the judge without a trial on the facts. The defendant may make such a motion where a legal rule bars plaintiff’s case or where the evidence is deficient in some critical respect. The motion will be denied if the judge rejects the legal argument or finds that the outcome depends

on disputed facts that require a trial for decision. Motions for summary judgment are more commonly made by defendants, but they are available to plaintiffs as well.

Defining and narrowing issues. As noted above, judges have begun to take a more active role in managing litigation. In many courts, judges will hold pretrial or status conferences early in the case, often in chambers – the judge’s office – rather than the courtroom. The judge, by examining the pleadings and questioning the lawyers, will attempt to define the controversy and narrow it by excluding matters that do not need to be decided or that can be resolved by agreement. Increasingly, the matters in dispute involve scientific or technical issues. In fact, these issues are often so important that the outcome of the litigation rests on their resolution. The judge will also chart the progress of the case by setting schedules for the various events to occur, such as setting a trial date and a time limit on discovery (see below) to ensure that the lawyers will prepare their case diligently.

Discovery. A major part of the pretrial process consists of discovery, i.e., the process by which the opposing parties obtain information from each other. Discovery is conducted in a variety of ways: by interrogatories (written questions calling for written answers); requests for the production of documents (enabling the requesting party to inspect the desired documents); and depositions (pretrial examination of parties or witnesses). Discovery is important in the American legal system for several reasons. First, in order to be advocates for their clients, lawyers need to prepare for trial by access to information that is relevant to the issues in dispute. When this information is not publicly available, the discovery process ensures that it can be obtained by the opposing parties. Second, the discovery process minimizes “surprises” at trial that can undermine both the fairness and the efficiency of the adjudication process. Finally, through discovery the parties can better assess the strengths and weaknesses of their case, thereby promoting settlement rather than lengthy litigation.

C. COURT APPOINTED EXPERTS

The role of expert witnesses in litigation generally. Ordinarily, witnesses are limited (under Federal Rule of Evidence 701) to testifying about facts: what they know, experienced or observed. With some exceptions, they are not permitted to express opinions. What distinguishes an *expert witness* is that (under Federal Rule of Evidence 702) he or she is permitted to testify to opinions on scientific, technical or other specialized matters if

1. The witness is *qualified* as an expert by knowledge, skill, experience, training or education, and
2. Such knowledge will assist the court or jury to understand the evidence and decide disputed facts. That is, the knowledge is relevant to the matter under dispute.

Even if the expert meets these two criteria, a party may object to the testimony on the ground that the opinions--and the bases for those opinions, such as studies or experiments—are not sufficiently reliable to be admitted at trial. In a case known as *Daubert v. Merrell Dow*

Pharmaceuticals, Inc., the U.S. Supreme Court ruled that the judge must decide this question of admissibility. The court will consider a series of factors, such as whether the method used to reach the opinion has been confirmed by tests and validated by peer review. If a judge rules that the evidence is not sufficiently reliable, he or she will not allow the evidence to be admitted, that is, a jury will not be presented with the evidence. When a judge makes the determination to allow evidence to be admitted, it does not mean that the judge necessarily finds that the evidence is convincing. It does mean that the judge regards the evidence as sufficiently reliable to allow it to be presented to a jury, which then makes the decision regarding the merits of the evidence. The judge's role, as spelled out in *Daubert*, indicates that the role of American trial judges has been evolving so that they play a much more active role in the management of litigation than has traditionally been true.

Court appointment. While parties commonly will retain expert witnesses, appointment of experts by the court has been the exception rather than the rule. Whether such an appointment will be made will depend on whether the judge, on the basis of what he or she has learned about the case during the pretrial phase, feels the need for an independent expert. The court's appointment, therefore, tends to come later rather than sooner in the process. The main elements of Rule 706 of the *Federal Rules of Evidence*, the authority judges usually use to appoint an expert are:

1. The court may appoint an expert agreed on by the parties or one selected by the court;
2. The expert will not be appointed unless he or she consents to act;
3. The court will give the expert a written statement of the expert's duties;
4. If the expert makes findings, the expert is to advise the parties of those findings;
5. Any party may take the expert's deposition;
6. The expert may be called by the court or any party to testify at trial and will be subject to cross-examination; and
7. The expert is entitled to compensation to be paid by the parties under order of the court.

The terms under which an expert is appointed in any particular case will probably be specified in a *court order* and may vary somewhat from the specifics of Rule 706; the judge has certain inherent authority and is therefore not bound strictly by the terms of the rule. It is important for the expert to review a proposed order, be certain that he or she understands it, and is satisfied to serve under it.

The functions of court appointed experts. Court appointed experts may perform a number of different functions in litigation, including the following:

1. Serving as a trial witness: This is the traditional role of the expert witness contemplated by Rule 706. Here the witness is called by the court to testify to opinions in accordance with Rule 702, discussed above. When one of the parties disagrees with the expert's opinion, that party will treat the expert as an adverse

- witness. (In legal jargon, such witnesses are often referred to as hostile witnesses.)
2. Serving as an adviser to the court: The court may call on the witness to analyze the evidence and provide the court with expert advice on how to assess it. For example, the expert may be asked to assist the judge in determining the reliability of studies underlying proposed expert evidence for the purpose of ruling on a motion under *Daubert*, discussed above. Or the expert may be asked to perform tests or conduct studies helpful to the court in understanding evidence. Whatever the expert does for the court will be subject to examination by the parties in pre-trial depositions, and the parties may also call the expert as a trial witness.
 3. Mediating settlement discussions: Experts may be called on to assist the parties in working out terms of settlement involving complex problems. An example might be the settlement of an antitrust case requiring sophisticated economic analysis of the consequences of various alternative remedies.
 4. Facilitating comprehension of the evidence: Experts have been appointed to provide a pretrial tutorial to the judge – and potentially also to the jury after it has been selected – to give an objective explanation of the basic elements of complex subject matter involved in the litigation.

Limitations and responsibilities. Two important limitations apply to the work of the court appointed expert. The first is that the premise of the appointment is not simply that the person is qualified but also that he or she is independent. Being independent does not mean that the person lacks opinions and judgments about the matter in litigation – such a person would not likely qualify as an expert. It does mean that the expert will be open-minded, indifferent to the outcome of the case and will call the shots fairly without regard to how they may affect one party or the other.

The other limitation is that the person is called to provide expert services, not a decision of the case. The expert's role is to facilitate the judge's and or jury's understanding of complex evidence so that the fact finder may arrive at a sound decision.

Because the court appointed expert is identified as an independent expert, his or her opinions and judgments may carry special weight. In these situations, juries may tend to discount opinions of party experts as biased. This places a special responsibility on the court appointed expert to ensure that, whether deliberately or inadvertently, his or her testimony or other statements in the case do not put a thumb on one side of the scale of justice. In other words, court appointed experts must remember that they have been asked to give opinions on a certain scientific or technical matter, *not* to decide who they think should win the case. The latter is a decision for the jury (or sometimes the judge).

D. THE TRIAL

As noted, few cases go to trial; indeed, well over ninety percent are disposed of by motion or settlement. Still, a court appointed expert may be asked to testify at a trial and should be prepared for that possibility. Most civil cases are tried by juries. In the federal system, the

Seventh Amendment creates a broad right to a jury trial and states generally grant a similar right. The right to a trial by jury is a safeguard protecting basic human liberties and is a hallmark of democracy in American justice. This fact dominates the landscape of trials; it mandates a degree of formality that might not be as prominent in cases where the judge alone is trying the case. What follows is a brief description of a typical trial process.

Shortly before the trial, the court will hold a final pretrial conference and issue an order that essentially lays out the game plan for the trial: listing the parties' witnesses and exhibits, stating the principal issues to be tried, and addressing some of the administrative and housekeeping details. On the day of trial, a group of potential jurors, the venire, is brought into the courtroom for jury selection. These potential jurors are drawn at random from a database created from records of drivers licenses and voter registrations in the area served by the court. As jurors' names are called, each is examined briefly by the court and perhaps by the attorneys to determine whether the juror can serve fairly and impartially. The attorneys for each side are then permitted to challenge any juror for cause (i.e., an appearance of partiality) and a certain number without regard to cause (these are known as peremptory challenges). Eventually a jury is seated, composed of anywhere from six to twelve plus one or two alternates (depending on the jurisdiction and the anticipated length of the trial). The length of time required to select a jury depends on the anticipated length of trial and on how controversial the case; it may take a couple of hours or days.

After the jury is seated, the attorneys give their opening statements, intended to outline what the evidence is expected to show. The plaintiff then calls its witnesses for direct examination. The opposing party may raise objections, either to testimony or to exhibits offered as evidence. The court will decide whether to sustain (uphold) or overrule the objection under the rules of evidence. Following the direct examination, defense counsel cross-examines the witness. Cross-examination ordinarily is intended to undermine a witness' direct testimony. The opposing attorney may try to impeach a witness (attack his credibility) by showing that he said or wrote something at some other time that contradicts his testimony. The attorney may also attempt to deflect the impact of the direct testimony by bringing up facts the expert had not considered in reaching his or her opinion, or he may challenge the validity of or support for the expert's underlying assumptions. More information about direct and cross-examination can be found in Section V.

Cases in which expert witnesses participate will be complex and likely will involve issues foreign to the experience of the judge or juror. Helping the jury to comprehend these issues is, therefore, extremely important. Judges and lawyers will generally make some effort to further the jury's comprehension by using tools such as visual aids, computer simulations and summary exhibits. The expert witness should keep in mind that the members of the jury may be completely unfamiliar not only with the technical or scientific subject matter, but with the technical and scientific language, as well. Experts should make an effort to present their testimony in a way that the everyday citizen will understand.

At the end of the plaintiff's case, the defendant presents its witnesses and they are cross-examined by plaintiff's counsel. At the conclusion of all the evidence, the jury is instructed and the lawyers give their closing arguments. Jury instructions are the way in which the court informs the jury of the rules of law that control its decision. It is for the jury to decide what the facts are from the evidence presented but they must apply the law as the judge instructs them. Jury instructions can be quite technical and may take anywhere from a half hour to several hours to read. They are based on the statutes and appellate court decisions that declare the applicable law. The lawyers will have prepared proposed instructions, and the court uses these proposals in preparing its final version. Most judges will give the jury a copy of the instructions for reference during their deliberations.

Eventually, the jury will return a verdict. To find for the plaintiff, the jury must find that the plaintiff's case has been proven by a preponderance of the evidence, i.e., that what plaintiff claims is more probably true than not; this standard differs from criminal cases requiring proof beyond a reasonable doubt for a conviction. In federal courts, the verdict must be unanimous. In most state courts, three-quarters suffices. If the jury reports itself unable to reach a verdict, the judge may give it some instructions to try again. But if it fails, the judge will declare a mistrial and, unless the parties settle, the case will be tried again.

The remainder of this handbook provides you with more detailed information on your role as a court appointed expert.

IV. FULFILLING YOUR DUTIES AS A COURT APPOINTED EXPERT

Here are some pointers to assist you in fulfilling your role as a court appointed expert. More extensive discussion follows in Section V.

A. MAKE SURE YOU UNDERSTAND YOUR ASSIGNMENT

The court likely will have described your task in a written communication to you. Before embarking on this task, make sure you understand the following:

What is the substantive scope of the task? Some courts will have a narrow role in mind for the court appointed expert, others a broader role. If you don't understand the court's assignment, or the assignment doesn't make sense to you, this should be cleared up before you put substantial work into the assignment. You should also bear in mind that the parties' experts will be conveying their own opinions to the party that retained them. In some instances, judges have appointed panels of experts to provide assistance to the court. This may be done when the issue before the court requires input from scientists representing more than one discipline.

What types of assignments may the court give you? Some courts may want you to conduct extensive original research; others may want nothing more than data analyses that will not require research. You may be asked to give your opinion on all or part of the parties' experts'

reports or testimony. You may be asked to critically review the existing literature on a topic. Some judges will not initially know exactly what services they require from you. It is important to communicate with the court from the outset about how best to fulfill your assignment.

What does the judge need to know about your expertise? In initial and subsequent discussions with the judge (or with an attorney who is working with you, see below,) be sure to carefully inform the court of the scope of your expertise. The judge and/or attorney need to appreciate that technical areas that may appear to fall under your discipline may, in fact, be beyond the bounds of your own expertise. Do not offer opinions on subjects with which you may be conversant or familiar, but for which you are not really qualified as an expert.

What is the time frame in which you will accomplish your task? Ask the judge what kind of time commitment he or she expects you to make in completing your assignment. Also ask about deadlines and scheduling of depositions or other travel. Keep in mind that unanticipated events may occur during litigation, so that the answers to these questions may change throughout the legal proceedings.

B. LEARN AND FOLLOW THE COURT'S GROUND RULES

The court will likely have rules in the following areas:

How should you communicate with the court? Some judges may want all communications between the two of you formalized in writing. Others may have a more informal system, allowing for telephone or personal contacts. You should find out the court's preference and follow that system.

What other communications and consultations are acceptable? In general, your assignment should be treated in confidence. Sometimes, though, it might be appropriate to discuss the matter with a colleague or with members of your staff. The appropriateness of such communications should be clarified in advance with the court. *This is especially necessary if the communications involve assistance from another expert who will expect payment for services.* If the court approves such communication, your colleagues and/or staff should be advised of the confidential nature of the discussions. You should also refrain from communicating with the parties, their attorneys, or the experts retained by the parties unless the court authorizes such communications in advance.

What should be done with notes or other documents generated in the course of the project? If the court instructs you to keep all documents generated in the course of the project, you should, by all means, abide by the court's wishes. These documents may include handwritten notes, computer drafts, "post-it" notes, and anything else you have produced in the course of your service to the court. If the court has not given you any specific instruction regarding document retention, you should follow your usual practice.

What are the deadlines? Any deadlines the court sets should be strictly followed. If a

problem arises with meeting a deadline, that should be communicated as soon as possible to the court.

What work product does the court require? The court may request a written report, but not in all instances. In addition, one or more of the parties is likely to ask you to give a deposition. Following this deposition, you may or may not be required to testify in court. These expectations should be clarified at the outset.

How will you be paid? In return for your service to the court, you should expect to be paid. The court, not AAAS, will provide this payment. Generally, both parties will contribute to the payment of your fees. If you have any particular concerns about how the court proposes to pay you, at what rate, and at what intervals, you should not hesitate to communicate these matters to the judge.

Will you have an attorney? As you know, parties to litigation hire attorneys to represent their interests and to present their case. These attorneys, in turn, may employ experts to assist them in preparing their case and/or testifying at trial. Although these attorneys represent the *parties*, not the experts they have hired, it is in their client's interest that the experts be assisted in such matters as preparing for depositions or trial. You, however, will be employed by the court, not a party's attorney. Until recently, courts have not made frequent use of their ability to appoint their own experts. Therefore, not a lot of guidelines exist regarding how the court should provide its expert with the assistance and advice that is prevalent for party experts. In some cases, judges have appointed an attorney to represent the court's expert. In these instances, the attorney actually represents the interests of the court expert, and is not advocating a particular view of the dispute. These attorneys have performed duties such as facilitating communications between the expert and the court, understanding legal documents, and preparing for deposition and trial. However, the judge may choose not to appoint an attorney for you, but instead may assist you as needed.

C. BE FORTHCOMING ABOUT CONFLICTS OF INTEREST

As a court appointed expert, you will be presumed to have an objectivity and independence that the parties' experts lack. In fact, this objectivity is the major reason for the judge to appoint an expert instead of relying on the party-retained experts. During your involvement in the case, you should seek guidance from the court regarding the kinds of activities or situations that could call this objectivity and independence into question. In addition, before the judge appoints an expert, you will have completed a AAAS questionnaire regarding conflicts of interest and potential bias. See the more extensive discussion below.

D. PREPARE A WRITTEN REPORT IF REQUIRED

The court may ask you to prepare a written report summarizing your findings and opinions on the issues assigned to you. Before preparing this report, you should clarify the court's wishes on the scope and length of the report and whether citations, illustrations, charts and/or tables

would be useful or necessary. See the more extensive discussion below.

E. PREPARE TO AND TESTIFY IF NECESSARY

You may be asked to testify either in a deposition or at trial, or both. Although somewhat different in their format and purpose, both of these are formal events where you will be sworn to tell the truth by a court reporter and will then be questioned by one or more attorneys. Whatever the format, any testimony requires careful preparation. You should be as knowledgeable about the material as you were when you completed the written report. Some time may have passed since you wrote that report, so be certain to thoroughly review the report's conclusions and opinions and the bases for them. You can expect that the questioning attorneys will be thoroughly familiar with the report and will have done their own independent research. Thus, you should be prepared for an informed, rigorous, and skeptical, but usually polite examination. See the more extensive discussion below.

V. BEING AN EXPERT

A. CONFLICTS OF INTEREST

What are conflicts of interest and why are they important?

In the context of experts involved in litigation, a “conflict of interest” is present whenever a circumstance causes a reasonable person to question the ability of the expert to be objective in reaching an opinion on a contested issue. An actual or perceived conflict will not necessarily disqualify an expert from rendering an opinion and providing testimony concerning that opinion, but it is an appropriate subject for cross-examination. The following is a non-exclusive list of some types of situations involving you, your spouse, or family members, which may pose an actual or perceived conflict of interest:

- A past or present personal or financial relationship with any of the parties, their attorneys, or other witnesses in the case (including personal friendships or close professional relationships, receipt of grants or applications for grants to any of the parties or closely related entities, consulting or employment relationships, etc.);
- Any direct or indirect financial interest in the outcome of the litigation, such as ownership of stock in a corporate party in the case;
- Involvement as an expert retained by a party in litigation involving similar issues; or
- Any other circumstance that might cause the expert's objectivity to be questioned.

You have already completed a questionnaire addressing these topics.

When a party or attorney selects and retains experts, there is an inherent potential bias in the experts' testimony because experts are more likely to be retained in the future if they express opinions favorable to the party that has selected them. The principal reason judges use court appointed experts is to provide testimony free from such conflict. Because jurors may view court appointed experts as more independent and objective than experts retained by one of the

parties, jurors may assume court appointed experts have more inherent credibility than party-retained experts. Additionally, if potential conflicts or biases are disclosed up front, unwanted surprises that may pose problems in the litigation can be avoided. It is, therefore, of paramount importance that court appointed experts be as free as possible of conflicts of interest, and fully disclose any circumstances that might present even the appearance of a conflict of interest.

When the court decides whether a particular circumstance presents a conflict of interest, the test is not whether the expert believes the conflict will affect his or her objectivity or credibility, but whether a reasonable person — including a reasonable party to the litigation — might believe that the circumstance could affect the expert's judgment and credibility. For example, an expert who had previously received a grant from a corporation that is a party to the litigation might be sincerely convinced that this circumstance would have no effect on his opinions. Similarly, an expert who had authored a journal editorial taking a position on a matter in controversy in the litigation might sincerely be convinced that he could objectively view the matter anew. In either of these cases, however, there is at least a perceived conflict of interest, since reasonable people might view the expert's objectivity as being called into question.

Credibility and impeachment evidence

One of the most important determinants of the outcome of a trial is the jury's assessment of the credibility, or believability, of the various witnesses. "Impeachment" evidence is evidence that relates to the credibility of a witness, as opposed to evidence that is directly relevant to the question at issue in the case itself. One of the means by which testimony of a witness may be impeached is by demonstrating that the witness has some sort of a conflict of interest that might tend to bias him or her toward one side of the case.

There are many cases in which what might at first appear to be a conflict of interest is not actually a circumstance that would tend to bias the witness. For example, the fact that years prior to the expert's involvement in a particular case, he or she had received a relatively small grant from a party to the case on an unrelated matter, and had not had a continuing relationship with the party, would probably not cause any actual bias. However, what is a completely innocuous circumstance may appear to be much more sinister if full disclosure is not made at the beginning of the expert's involvement in the case. Therefore, there should be full disclosure of all circumstances that might be perceived as posing a conflict of interest, even if the expert is convinced that the circumstance has had no effect upon his ability to objectively assess the issues in the case.

Questionnaire and the necessity for full disclosure

CASE staff has received your curriculum vitae and has provided you with a detailed questionnaire seeking information concerning employment history, employment of immediate family members, membership in professional or advocacy groups, financial relationships with entities that might be litigants, research activities, publications, and public statements concerning controversial matters potentially relevant to a case in which you might be asked to testify. The purpose of the questionnaire is to identify perceived or real conflicts of interest *before* your appointment as an expert. This questionnaire is designed to minimize the risk of an expert

having to withdraw from a case after appointment, or be subjected to a potentially embarrassing cross-examination concerning possible conflicts of interest.

Updating questionnaire information and considerations regarding appropriate professional activities during the course of the case

During the time that you are involved in a case, every effort should be made to avoid situations that would create an appearance of a conflict of interest, including applications for grants from parties to the case or for employment with parties to the case, public pronouncements on controversial matters at issue in the case, etc. To the extent that conflicts – real or perceived – arise that are beyond your control (such as your employer’s receipt of a major grant from a party, or a member of your immediate family’s employment or investment with one of the parties), you should advise the court of the change in circumstances as soon as possible. In addition, major changes in the information disclosed in the questionnaire, such as a change in employment, should also be disclosed as soon as possible, even if these changes seem irrelevant to your role in the litigation. Ask the court to instruct you on how to convey updated information.

Allowable discussion concerning the subject matter of the testimony

There is no standard rule concerning the extent to which it is appropriate for a court appointed expert to discuss the subject matter of his or her testimony with persons outside the formal setting of a court hearing or a deposition. For example, while judges generally discourage ex parte communications (communications about case-related substantive matters in the absence of attorneys for all of the parties), there may also be exceptions to this rule. Furthermore, judges may have differing standards concerning what types of contact are appropriate or inappropriate. Therefore, be certain that the rules and requirements of the judge are clear to you. For example, you should know whether or not the following types of contacts, among others, are considered appropriate:

- Discussion of the case or its subject matter with other professionals in the field who have not been retained as experts in the case. (Such contacts might be very helpful, but they are potentially problematic, since the other professionals with whom you hold such discussions might have perceived or real conflicts of interest that would not have been disclosed to the parties in the case.)
- Discussion of the case or its subject matter with experts who have been retained by the parties in the case. (Such contacts might be helpful in clarifying areas of agreement and disagreement, but are subject to potential disagreements about exactly what was said during the discussion.)
- Discussion of the case or its subject matter with persons who have knowledge of facts relevant to the case, such as investigators, treating medical personnel, etc.
- Discussion of the case or its subject matter with the attorneys involved in the case. Conversations about housekeeping matters such as the scheduling of depositions are generally not considered to be a problem, but substantive discussions about the subject matter of your testimony should generally not take place without the attorneys for all parties being present. Even in the case of discussions concerning housekeeping matters, a record should be kept of the nature of the contact.

If you think that one of the above discussions would be useful in fulfilling your assignment, ask the judge before going ahead. Additionally, you should ask the judge to provide a written copy of his or her rules regarding permissible contacts.

B. EXPERT WITNESS REPORT

Nature of the report

Under the rules governing cases in United States District Courts, testifying experts retained by one of the parties to the case are required to prepare, sign, and submit a report, which should contain:

- a complete statement of all opinions the expert will give, and his or her basis and reasoning;
- the data or other information the expert considered in forming his or her opinions;
- any exhibits the expert intends to use as a summary of, or support for, the opinions;
- the expert's qualifications, including a list of all publications authored within the preceding ten years;
- the compensation to be paid for the expert's study and testimony;
- and a listing of any other cases in which the expert has testified, either at trial or by deposition, within the past four years.

Although this rule does not directly apply to court appointed experts, courts may require you to submit a written report of a comparable scope to those required from experts retained by a party.

AAAS project staff will encourage judges to give written, as well as oral, instructions regarding reports that are as specific as possible, and that address such issues as scope, length, whether citations are required, and the use of graphs, charts, or other visual aids. Be certain that the expectations of the judge concerning the report are clear. In addition, you should inquire as to expectations of the court regarding the retention of documents. In most cases, experts are expected to retain, or request that the court retain, all data and models relied upon by the expert until the case has been concluded. Notes the expert has taken while forming opinions generally are not required to be retained; however, you should maintain those notes if it is your customary practice to retain them in the course of forming an opinion. Any notes that you retain are discoverable, that is, you will be required to allow the parties to see these notes, should they request to do so.

Reports should be written in such a manner that they are capable of being understood by the court, the attorneys and an intelligent lay audience, all of whom may lack scientific training. In some jurisdictions, the jury may consider contents of the expert witness report, as well as the expert's testimony, as admissible evidence. Even if the expert witness report cannot be considered as admissible evidence, the attorney conducting cross-examination of the expert is permitted to ask the expert questions about excerpts from the report. Thus, scientific terms and

concepts that are likely to be unfamiliar to a lay audience should be explained, either in the body of the report or, if inclusion in the body of the report is impracticable, in an appendix submitted with the report.

Uses of the report

An expert's report is used in several ways. These include:

- describing the scope and nature of the expert's likely testimony, so that the attorneys can decide whether it is necessary to take the deposition of the expert;
- encouraging resolution of the case short of trial, since a thorough and persuasive report may convince one or more parties that their position has weaknesses that they had not fully appreciated;
- providing the judge with an understanding of the scientific principles and issues in the case, so the judge will have a better basis to rule on pretrial motions to preclude expert testimony offered by one side or another; and
- in those jurisdictions where such use is permitted, providing the jury with a more cogent explanation of the expert's position than may be possible with traditional testimony.

C. DEPOSITIONS

A “deposition” is the written record of a witness’s testimony, under oath and with the opportunity of cross-examination, but not in open court. A court reporter present at the deposition transcribes the testimony. This transcript can be used later to examine the expert during the trial or in those cases where the same expert participates in other trials on related issues.

Purpose

There are two general purposes for depositions: discovery and preservation of testimony. Because most jurisdictions use *discovery* depositions more frequently, they will be dealt with in the most depth here. The party that has not retained the expert generally schedules a deposition taken for the purpose of discovery. In the case of a court appointed expert, either party could schedule the deposition.

The attorney who has requested the deposition typically hopes to use the deposition to:

- “flesh out” the details of the expert's opinions and the basis for those opinions beyond those set forth in the expert's report;
- develop information for potential use in cross-examining the expert at trial;
- determine whether there is a basis for moving to exclude the expert's opinions from evidence, for example, that the expert is either not qualified or does not have a valid basis for his opinions about the case; and
- determine how well the expert expresses himself and how persuasive he is likely to be at trial.

A deposition for *preservation of testimony* serves as a substitute for trial testimony, and is generally *noticed*, or requested, by the party who will be presenting the expert's testimony at trial. It is generally taken under circumstances where the expert may not be available to testify in person at the trial.

Deposition Procedure

Notification. Occasionally, the method used to notify an expert about an upcoming deposition is through issuance of a subpoena. A subpoena will be “served” (or delivered) to the expert directly by a U.S. Marshal or other law enforcement official. While this may be unsettling, it is simply a formal procedure for notifying an expert of the need to be present for the deposition. If you do receive a subpoena, notify the court or an attorney who has been assigned to assist you, if appropriate.

Logistics. A deposition may be taken in any location, including an attorney's office, the expert's office, a hotel conference room, a court reporter's office, or (in rare circumstances) a courthouse. Although the notice of deposition and subpoena will list a particular location, this is frequently changed by agreement of the witness and counsel if some other location or time is more convenient. Counsel for all parties must receive notice of the deposition, and counsel for all parties generally attend unless the subject matter of the deposition is clearly irrelevant to the claims or defenses of one of the parties. Counsel for all parties may participate in the questioning, and may object to questions of other counsel. (In most jurisdictions, although several attorneys may attend a deposition on behalf of a single party, one attorney must do all of the questioning for that party.)

In addition to the attorneys and the person being deposed, a court reporter is generally present to administer the oath and transcribe the testimony. Depositions may also be recorded by means of either audio or video recording (or both), and a video operator may also be present for that purpose. The parties themselves (or representatives of corporate parties) may be present, and counsel may bring their own expert with whom to consult during the deposition.

Substance. The deposition may address any “relevant” topic, with “relevant” generally given a broad definition. Questioning typically begins with the attorney who has *noticed* the deposition, and continues until all attorneys have had an opportunity to question the witness. Questioning may cover:

- The expert's background (including education, professional experience, publications, memberships and offices in professional organizations, professional or scientific awards, and previous experience in litigation);
- The methodology generally used by experts in this area of science;
- The method by which the expert arrived at the opinions and conclusions contained in his or her report (including the types of data collected, the methods of data collection and analysis, and the identity of any published sources or persons consulted);
- The basis for the expert's opinion;

- Alternative explanations for the observed data and/or conclusions, and the degree of uncertainty in the expert's conclusions;
- If the expert has been instructed to retain documents and tangible objects that were reviewed or generated (including draft reports, notes, correspondence, etc.), the notice of deposition may direct the expert to bring them so that they can be examined and copied by counsel;
- The amount of the expert's compensation for preparation and testimony time on this matter, and the amount of the expert's compensation for other expert witness or legal consulting work, especially work involving similar subject matter;
- The names of standard or generally accepted texts, journals or other published sources in the field, or, more specifically, whether a particular source is considered “authoritative” and what is meant by this term;
- The names of other persons in the field whom the expert would regard as leading authorities; and
- Whether the expert has read the reports of other experts in the case, the extent to which the other experts are known to the person being deposed and the deponent's opinion of the professional qualifications of those experts, and the extent to which the expert agrees (or disagrees) with the methodology and conclusions of other experts in the case.

Preparation. The key to a successful and useful deposition is being adequately prepared. Attorneys preparing to conduct a deposition often do significant reading in the scientific or professional literature in the area, as well as consult with experts whom they have retained. Thus, the attorneys may be very knowledgeable about the subject matter of the expert's report, particularly if they have tried other cases in this field. Scientists who assume that attorneys will not have a good grasp of the material make a serious mistake.

Although the attorneys may be extremely knowledgeable about the specific subject matter of the expert's report, that specific knowledge may not be accompanied by a broader understanding of the field. Thus, questions may be based on isolated points that seem to be taken out of context, or may ignore what the expert considers important principles in the scientific field. An expert should prepare for a deposition with the same seriousness as preparing to defend a scientific paper before a skeptical audience of professionals in the expert's own field, and also should be prepared to explain what may seem to be basic knowledge in that field.

The notice of deposition or subpoena may be accompanied by a list of types of documents or other items (such as samples, photographs, or visual aids) that should be brought to the deposition. It is important to read this list sufficiently in advance of the deposition so that the requested items may be located and copied, if necessary, before the deposition. Otherwise, it might be necessary to reconvene the deposition on another date if requested documents or other items exist and are not brought to the deposition. Sometimes the list of documents requested may seem overly broad in scope or the request itself may seem vague. If so, the expert may seek clarification or communicate other problems with the request by alerting the court or an attorney, where appropriate, to the expert's concerns.

Conduct at the deposition. The most important advice to the deponent, or witness who will be deposed, is to be certain to understand questions before answering them, and to make sure the answer is an accurate response to the question being asked. Most attorneys advise that if a question seems confusing or unclear, it is entirely appropriate for the person being deposed to ask that it be repeated or rephrased. Also, it is important to immediately correct or clarify a wrong or unclear answer. If the deponent does not know the answer to the question, it is acceptable to say "I don't know." If an attorney has been appointed to represent the expert at the deposition, it is entirely appropriate to ask that attorney for advice about the procedure to be followed at the deposition.

It is especially important for court appointed experts to be forthcoming and not to appear to be withholding information that might favor one side or the other. Court appointed experts should provide their full perspective of the issues, including uncertainties or qualifications. It is also important to be as succinct as possible by staying focused and on topic.

It is the task of the attorney conducting the deposition to probe thoroughly the basis for an expert's opinions and to determine whether there is a basis for effective cross-examination at trial. The style of questioning used by attorneys at depositions varies widely, with some attorneys being conversational and others taking a more confrontational or hostile approach. An expert being deposed should attempt to maintain a professional demeanor at all times, regardless of the style of the attorney doing the questioning. If an attorney is being confrontational, an expert who responds in kind may cause his or her own objectivity to be called into question by seeming to be as much of an advocate as the attorney. Similarly, an expert who responds to a conversational style of questioning by being more informal or less precise than would otherwise

be the case, may be embarrassed when his or her answers are read back in the more formal setting of a trial.

The court reporter transcribing the deposition may well be unfamiliar with scientific or technical terminology used in the deposition. Some witnesses find that it is useful to prepare a list of scientific and technical terms that are relatively certain to arise during the course of a deposition and give it to the court reporter, since this eliminates the need for the reporter to interrupt the deposition to ask for the spelling of a word. It is also important that all answers be in the form of a clear, loud verbal response, rather than a nod of the head. It is also important to recognize and resist fatigue, boredom, and exasperation during the deposition. Experts who feel they need a break, should feel free to request one.

The deposition will typically end with the witness being asked whether he or she wishes to read and sign the deposition, or whether he or she wishes to waive that right. The purpose of reading and signing the deposition is to be certain that the testimony has been accurately transcribed. Where time permits, it is typically advisable to ask for the right to read and sign the deposition, rather than to waive reading and signing, since if reading and signing are waived, there is no way to correct errors in the transcript. This is true of all depositions, but because of

the unfamiliarity of many court reporters with scientific terminology, it is particularly true of scientific expert depositions. Any substantive changes to the testimony may subject the witness to further depositions to explore the basis for the changes.

D. TESTIMONY

Introduction

The parties, via the judge, may ask a court appointed expert to testify as a witness at a deposition, during a hearing, or at trial. (The parties very likely will have their own experts.) Additionally, a judge may make the request on his or her own behalf. Witnesses always give their testimony orally and under oath, though a transcript or video recording of a deposition is sometimes used at a trial or hearing in lieu of a live appearance. Whether expert testimony becomes *admissible evidence* in a case depends on its relevance and reliability. If one of the attorneys objects to the testimony and the judge upholds, i.e., agrees with the objection, the testimony will not be admitted.

If testimony is admitted into evidence, the trier of fact – typically the jury, but sometimes the judge – may consider it in deciding factual disputes between the parties. Judges decide all factual issues in bench trials, which are those tried without a jury. Judges also may decide some of the facts even in a jury trial. For example, in ruling on pre-trial motions, judges typically have to consider facts as well as the law. No matter the context in which you testify as a court appointed expert, your role is to present an accurate opinion about the scientific or technical issues in a case, not to assist either party.

When an expert employed by a party testifies at trial, the attorney for that party first examines – or questions – the expert during direct examination. The opposing party’s attorney then examines the expert during cross-examination. Because the judge, rather than one of the parties, has appointed you, however, this traditional sequence of examination may not necessarily apply. For example, if the judge has appointed an attorney for you, he or she may conduct the direct examination, which will be followed by a cross-examination by the parties’ lawyers. Alternatively, because the attorneys representing the parties may have worked on the case for a long time, and therefore be more familiar with the scientific material involved in the case than the attorney representing the expert, the party favoring your position may adopt you as a witness, which means the lawyers for that party will conduct the direct examination. A third possibility is that the judge might conduct the direct examination, which would be followed by a cross examination conducted by both parties. Because court appointed experts have not been used frequently, and have given testimony even less frequently, no “common practices” have developed, which makes it difficult to predict just how a judge might proceed with your testimony.

Court appointed experts may have an extra patina of credibility because of the nature of their appointment. Therefore, it is essential that you be sensitive to the importance of presenting your testimony in a fair and unbiased way. This may include taking the initiative to point out the

strengths and weaknesses of a variety of interpretations of data and scientific theories, including the one that you find most useful for understanding the scientific matter at issue in the trial.

Direct examination

During direct examination the lawyers cannot ask leading questions, which are questions that suggest the answer, nor can they ask completely open-ended questions that invite excessively long answers. In a traffic accident case, for example, a lawyer must ask, “How fast were you driving?” rather than “It’s true, is it not, that you were driving 25 miles per hour?” Likewise, a single question, “Tell us all about the accident” would generally be improper because it is too broad. Instead, the direct questioning would be broken into more manageable pieces. “What happened as you drove into the intersection?” “What did you do after you saw the other car?” Notwithstanding such limitations, when responding to direct examination the expert will have wide latitude to explain his or her opinions about the scientific or technical issues in the case and the basis for those opinions.

In some ways direct examination resembles a scientific presentation before your peers, or perhaps the defense of a thesis, though there are some initial “formalities.” Typically you first will be asked to state your name and profession, and to answer several questions about your professional affiliations and background. You may be asked what you know about the case, and any other information upon which you relied. Then you will be asked your opinions on the scientific issues in the case and the basis for those opinions.

Unlike lay, or fact, witnesses, who are generally not allowed to express opinions about issues in the case, the primary role of expert witnesses, whether employed by the parties or appointed by the court, is to give opinions. Fact witnesses, for example, can testify about what they saw or heard during an auto accident, but could not give any opinions about whether improperly functioning brakes contributed to the crash. An expert brake technician, however, could testify about the quality of the brakes, even though he or she did not see the accident. Also unlike fact witnesses, experts may rely on information that is not part of the evidentiary record, so long as it is reliable information of the kind generally used in their field.

The permissible scope of an expert’s opinion testimony will depend on his or her area of expertise and the extent to which the expert is *qualified* within that area. To establish an expert witness’ qualifications in the legal sense, the lawyer conducting his or her direct examination will ask questions that seek information establishing the expert’s specialized knowledge, skill, experience, training or education within the field of expertise at issue. Having established that the witness’s background is sufficient to provide reliable opinion testimony that is appropriate and relevant to the case, the attorney will then *move to have him or her formally qualified as an expert*. If qualified by the court, the expert will be permitted to give opinions or conclusions drawn from the knowledge of his or her field. Because you are a court appointed expert, selected by the judge based on your qualifications, this step should not be at all problematic. While your testimony will be limited to the subject area in which you have been qualified, this need not be construed in an overly narrow fashion. Returning to the auto accident example, the brake expert could not testify about the eyesight of the driver.

After the judge rules that you are qualified as an expert, an attorney (see above regarding attorneys for court appointed experts) will begin asking you a series of questions about the issues involved in the case. As discussed above, these questions will allow you to explain your answers, but will not be completely open-ended. The attorney conducting the direct examination is responsible for drawing out your complete testimony in a clear and coherent manner. If the attorney asks you a hypothetical question about issues involved in the case, be sure you have enough facts to give a complete answer, always feel free to ask for clarification, if necessary, and take as much time as you need in answering the question.

Cross-examination

The Purpose of Cross-Examination and How It Is Conducted.

Following the direct examination, you probably will face cross-examination. While direct examination allows you to present your material in a straightforward fashion, cross-examination has a very different style. In fact, cross-examination has a radically different style from both direct examination and from the type of discourse and exchange typical of the kind of scientific presentation to which you are probably more accustomed. Lawyers for the party that disagrees with your opinion most likely will ask questions that are adversarial – sometimes even hostile – in tone. Though most experts find cross-examination the least enjoyable aspect of their court experience, cross-examination is an essential part of our judicial system. In the United States, all parties are entitled to representation by an advocate for their interests. Thus, attorneys representing plaintiffs or defendants in civil litigation, or defendants in a criminal trial, have a responsibility to make the best case possible for their clients, a responsibility that often translates into a zealous style of questioning. But the process serves an essential function, and it often clarifies and properly limits opinions. It also may bring out potential biases. You will be best able to respond effectively to cross-examination if you are well prepared, candid, objective, and have carefully delineated the boundaries of your expertise.

The attorney conducting cross-examination may ask you if the underlying data permit a conclusion other than the one you drew. An important aspect of being an expert responsible to the court is the ability to discuss frankly the strengths and weaknesses of alternative explanations and theories.

During cross-examination you should expect that the lawyers will attempt to undermine your credibility as well as your explanations and reasoning. Thus, they may ask questions about your professional affiliations, publications, publicly held opinions, and other topics related to your professional career. There may be questions about positions you may have held in the past that are inconsistent with your present testimony, and attempt to impeach you with such inconsistencies. Remember that scientists often change their minds about a scientific issue during the course of their careers. For example, a scientist might change his or her mind about an issue if further findings render the earlier view untenable. In the scientific arena, such changes of opinion do not mean that you are less credible; in fact, the opposite may be true. Therefore, you need not be apologetic about changes of opinion, but must be prepared to explain them

rationally. You should anticipate and prepare for this kind of questioning, you should review your publications and presentations related to your expected testimony, and consult with your attorney, if you have one, prior to your cross-examination. Typically, cross-examining attorneys ask what you have done to prepare for your testimony. You will be expected to name the publications (both your own and those written by others) that you have reviewed in forming your opinions. For more information about *impeachment* and *credibility* evidence, please refer to section V(A) of this handbook.

In addition to attacking credibility, attorneys use other tactics for challenging direct testimony. For example, the rules of evidence allow attorneys in cross-examination to ask leading questions, and they will do so. These questions are designed not only to suggest the answer the attorney wants you to give, but to control or limit your answers. Thus, the cross-examiner often asks questions that require a “yes” or “no” answer, without giving you an opportunity to provide a fuller – and more accurate – explanation. If the question cannot be answered with a “yes” or “no,” say so, and give the reason why.

While you must follow the attorney’s format and merely give a “yes” or “no” answer if it is called for, do not become frustrated if your interrogator does not allow you to expand on your answer. If appropriate, you may respond that a “yes” or “no” answer is not possible, but avoid resorting to this response if you can. It may appear evasive, and the court may order you to answer the question as asked. In any event, you generally will have an opportunity to expand on

your answers during *redirect*, when the attorney who conducted your direct examination has another chance to ask you questions.

Cross-examining attorneys usually set the tone of their examination through voice inflection and facial expressions. They may act hostile or sarcastic in an effort to intimidate you. At the other extreme, they may adopt a pleasant tone of voice designed to catch you off guard. If the questions are hostile, do not take this attitude personally, and if they are friendly, be especially alert. Remember that the attorneys are merely doing their job of representing the interests of their clients. (See Section III for a fuller discussion of the adversarial system of justice.) Your responsibility is to state your impartial scientific opinion in a professional manner.

Attorneys also may ask questions in a seemingly haphazard manner to confuse or catch the witness off-guard. Therefore, do not try to figure out why the attorney is asking you a particular question at a particular time. Instead, concentrate on answering the question as accurately and truthfully as possible. If you overstate the facts or your opinions, or if your testimony is too understated, the attorney may attempt to convince the jury that your entire testimony is not credible.

Your Response to Cross-Examination Questions

Whatever method the attorney uses, your job is to present accurate expert opinions. If your testimony is in front of a jury, be aware that your demeanor in responding to an aggressive, hostile cross-examination, or even to a seemingly friendly one, will likely be an important

component of your credibility. In accomplishing this, keep the following suggestions in mind. They apply in all contexts – at depositions and hearings as well as at trial.

- Always listen carefully to the question, and make sure that you have heard and understood it before you answer.
- Be sure to answer the question that is asked, and do not elaborate unnecessarily. Remember that judges and juries lack your background in the area at issue, and too much information can be confusing. Although you may sometimes think that the attorney “should have” asked a different question or pursued a different line of questioning, do not give in to the desire to guide the questioner.
- If you don’t know the answer to a question, do not be reluctant to say so, even if the attorney reacts with surprise or disbelief. Do not be embarrassed to say “I don’t know” or “we [the scientists in this discipline] don’t know.” Also, do not be afraid to state that the question is outside of your area of expertise, if that is the case. Be consistent in defining the boundaries of your expertise, and stay within them once they have been defined.
- If presented with a document, make sure you look at it closely enough to know exactly what it is before answering any questions about it. If the lawyer is basing questions on a document that he or she has not shown you, ask to see it if you have any concerns about what the document really says. In an effort to rattle witnesses, lawyers sometimes will “fake it” by seeming to refer to a paper that supports their position when in fact it does not. Similarly, if a lawyer reads you a quotation from a document, ask to see the document so you can examine the context from which the quoted language was taken. Take time to read paragraphs before and after the quotation to make sure it represents fairly the author’s intent in the article.
- Be very clear about the degree of certainty surrounding your answer, and beware of questions about what *might* be possible. “It’s possible, is it not, that a meteor crushed the car and not the truck that ran the red light?” The lawyer will try to squeeze a “yes” or “no” answer to such a question, but depending on the facts you can respond in a more informative way. For example, “very, very unlikely, but remotely possible”; or “not in this case.”
- If you are sure of your answer, do not change it no matter how many times the attorney asks the question. Avoid fighting with the lawyer, but if it’s appropriate, you can respond that you’ve already answered a question. To avoid a fight, say that you believe you’ve already provided the answer, and then give it again.
- If you do not understand a question, ask the attorney to rephrase it until the question is perfectly clear to you, but do not try to help the attorney ask what you might think is the “right” question.
- Do not allow the attorney to rush you along in your testimony. If you need time to collect your thoughts before answering, do so. Pausing and thinking does not look foolish, and if you need to “fill the silence” just say that you want to make sure your answer is accurate and presented in a way that will avoid confusion. Few lawyers will continue to press for a quick but inaccurate and confusing answer.
- Though as a court appointed expert the question will not likely arise, if asked

what you are being paid for your testimony, respond that you've been paid to conduct a review, to do certain work, and to appear in court. Your testimony is your best opinion and is not affected by your compensation. With few exceptions, all experts are paid for their professional work.

- If the attorney who conducted your direct examination makes an objection during the cross-examination, listen carefully to the objection and wait for the judge to rule on it before you answer the question. Remember, if your attorney is objecting, the question may be particularly sensitive, and if necessary take an extra minute or two to frame your answer. If the judge says that the objection is sustained, this means that the judge is agreeing with the objection. The attorney cross-examining you will probably be required to ask another question or the same question in a more acceptable fashion. If the objection is overruled, the judge is ruling against the objection. The judge will probably instruct you to answer the question. Objections often rely on legal rules regarding permissible questioning of witnesses, so you may not always understand the reasons for the objection or the judge's ruling. Just wait for the judge to tell you how to proceed.
- If you feel that it's necessary or would be helpful, you have every right to ask the judge if you can take a short break.
- If the attorney interrupts you before you have finished your answer, politely ask to finish and, if necessary, ask the judge for permission to finish.
- If you give an answer that you later realize is inaccurate, interrupt the attorney and correct your mistake, even if you become conscious of the mistake long after you have given your original answer.
- If you realize you gave an incorrect answer after your testimony has concluded, notify the judge or your attorney, if you have one, as soon as possible, as your responsibility to be accurate continues even after your testimony has concluded.

In short, even though the arena is different, you should act with the accuracy and candor that you would in front of your professional peers. A good "rule of thumb" is to testify as though the individual you most admire in your discipline will be evaluating your testimony for accuracy and credibility. Do not say anything that you would not be comfortable with him or her reading.

General Guidelines When Giving Testimony

To prepare for your testimony, you should meet with the judge or attorney who will be conducting your direct examination and review both your direct testimony and any anticipated cross-examination. If the individual conducting the direct examination is an attorney for one of the parties, the judge must agree beforehand that this meeting is appropriate. Keep in mind that the jury and the judge probably have little or no scientific background. Thus, you should try to explain your opinions in a manner that non-scientists can readily understand. Stick to the concepts that the jury and judge will need to understand the science involved in the case and the opinions you have reached based on that science. Even though it may be frustrating to avoid a full and complete discussion of the scientific or technical matter at issue, remember that you are not teaching a college course and that overly detailed elaboration can detract from the jurors' understanding. The expert witness should also remember that the jury will be completely

unfamiliar not only with the technical or scientific subject matter but with the language as well. Therefore, be sure to avoid scientific or technical jargon whenever possible. When you use complex terms or words that have a special meaning in your discipline, be sure to explain them clearly. In short, make your best effort to present your testimony in a way that a non-scientist will understand. Additionally, whenever possible, use clear visual aids, such as slides, computer simulations or summary exhibits to help the judge and jury understand complex concepts.

In a legal setting, your demeanor and appearance can be an important part of your overall presentation. Not only is your outward appearance the first thing that jury members notice, but demeanor and appearance can affect the jury's assessment of your credibility. It is important, therefore, to project a professional image. Wear proper business attire. Also, trivial and obvious though it may seem, remember to turn off all cell phones or beepers before entering the courtroom.

Try to project a cordial, professional, and calm attitude at all times. Avoid a tone of voice that reflects sarcasm or frustration. Realize that many attorneys try to frustrate and rattle the witnesses they are examining as a purposeful tactic. Remind yourself that these tactics are a by-product of the adversarial system, and should not be taken personally.

Above all, remember that you are providing a valued public service through your appointment as an *independent* expert, offering your knowledge and opinions for the benefit of the court, not for any of the parties. Do not let your reaction to a sympathetic party, or your perception of the equities of a case color your opinions or your response to cross-examination. When you answer a question or provide an opinion, you should do so with the same level of objectivity and professionalism as if you were addressing an audience of your peers. Although the courtroom can be an unfriendly place, try not to let it intimidate you. If you prepare properly and stick to what the court has asked you to do, you will provide an immensely important public service, and you will find the experience professionally rewarding as well.

VI. REFERENCES/SUGGESTED READINGS

- Joe S. Cecil and Thomas E. Willging, "Accepting Daubert's Invitation: Defining a Role for Court-Appointed Experts in Assessing Scientific Validity," *Emory Law Journal* 43, no. 3 (summer 1994): 995-1070.
- Eric A. Youngstrom and Christine Pelligrini Busch, "Expert Testimony in Psychology: Ramifications of Supreme Court Decision in *Kumho Tire Co., Ltd. v. Carmichael*," *Ethics & Behavior* 10, no. 2 (2000): 185-193.
- William Glaberson, "The Nation: Assigning Blame; the Courts v. Scientific Certainty," *N.Y. Times*, 27 June 1999, sec. 4.
- Si-Hung Choy, "Comment: Judicial Education After *Markman v. Westview Instruments, Inc.*: The Use of Court-Appointed Experts," *UCLA Law Review* 47 (2000): 1423-1458 .
- William C. Smith, "No Escape from Science," *ABA Journal* 86 (2000): 60-62.
- D. Alan Rudlin, "Role Seen for Court-Appointed Experts in Wake of *Daubert*," *Environmental Compliance & Litigation Strategy* (March 1994): 8-9.
- Donald Kennedy and Richard A. Merrill, "Science and the Law," *Issues in Science and Technology* (summer 2000): 49-51.
- Hon. Stephen Breyer, "Science in the Courtroom," *Issues in Science and Technology* (summer 2000): 52-56 .
- Hon. Stephen Breyer, "Science and Society: The Interdependence of Science and Law," *Science* 208 (1998): 537-538.
- Margaret A. Berger, "Expert Testimony: the Supreme Court's Rules," *Issues in Science and Technology* (summer 2000): 57-63.
- Julie Kay, "Science or Junk? Study Says Judges Can't Distinguish," *Miami Daily Business Review*, 11 August 2000.
- Ellen E. Deason, "Court-Appointed Expert Witnesses: Scientific Positivism Meets Bias and Deference," *Oregon Law Review* 77 (spring 1998): 59-155.
- Dennis J. Curran, "Impeachment of the Expert Witness: What They Never Told You in Law School," *The Ninth Annual National Expert Witness & Litigation Seminar* (June 2000): 3-61.
- Gilbert S. Omenn, "Enhancing the Role of the Scientific Expert Witness," *Environmental Health*

Perspectives (1994): 674-675.

VII. GLOSSARY*

Admissible evidence: Evidence which may be received by a trial court to aid the trier of fact (judge or jury) in deciding the merits of a controversy.

Adoption of a witness: The process in which lawyers other than those of the witness conduct the direct examination of that witness.

Affidavit: A written, *ex parte* statement made or taken under oath before an officer of the court or a notary public or other person who has been authorized to do so.

Answer: The principle pleading on the part of the defendant in responding to the plaintiff's complaint. It must contain a denial of all of the allegations in plaintiff's complaint which the defendant wishes to contest.

Complaint: The first pleading of the case, in which the plaintiff sets out the facts on which the claim for relief is based. The purpose of the complaint is to give notice to the adversary of the nature and basis of the claim asserted.

Cross-examination: The questioning of a witness by a party or lawyer other than the one who called the witness, concerning matters about which the witness testified during direct examination. The purpose is to discredit or clarify testimony already given so as to neutralize damaging testimony or present facts in a light more favorable to the party against whom the direct testimony was offered.

Declaration: At common law, the formal document setting forth plaintiff's cause of action, which includes those facts necessary to sustain a proper cause of action and to advise the defendant of the grounds upon which the suit is based.

Decree: Court orders governing the administration of specialized institutions such as prisons, schools or mental hospitals.

Defendant: The party being sued.

Deponent: The witness who testifies as to information or facts known to him or her, under oath in a deposition.

Deposition: A method of pre-trial discovery consisting of a statement of a witness under oath, taken in question and answer form, with the opportunity for the adversary to present and cross examine the witness.

Direct examination: The initial questioning of a witness by the party who called the witness. The purpose is to present testimony containing the factual argument the party is making. Leading questions should not be used on the direct examination of a witness except as may be

necessary to develop his or her testimony.

Discovery: Pre-trial procedure by which one party gains information held by another party. The scope of material available for discovery is quite broad; however, there is a balance between full and open discovery, and safeguard against unwarranted intrusions into the opponent's files.

Ex parte communications: Communications about case-related substantive matters in the absence of attorneys for all of the parties.

Hostile witness: During *direct examination*, a lawyer is not allowed to ask leading questions of his or her own witness. But, if that witness openly shows hostility against the interests (or the person) that the lawyer represents, the lawyer may ask the court to declare the witness "hostile," after which, as an exception of the cross-examination rules, the lawyer may ask their own witness leading questions.

Impeach: To call into question the veracity of the witness by means of evidence offered for that purpose, or by otherwise showing that the witness's testimony should be called into question.

Interrogatories: A pre-trial discovery tool in which written questions are propounded by one party and served on the adversary, who must answer by written replies made under oath.

Jurisdiction: Judge's power to hear and determine a case. Federal courts have jurisdiction only over cases between persons residing in different states or brought under federal statutes. Both state and federal courts have jurisdiction only if the defendant is present in the territory the court serves. If the court lacks jurisdiction, it must dismiss the case.

Jury instructions: The way in which the court informs the jury of the rules of law that control their decision. The instructions are usually read to the jury.

Objection: A procedure in which a party asserts that a particular witness, line of questioning, piece of evidence, or other matter is improper and should not be continued, and asks the court to rule on its impropriety or illegality.

Overrule objection: The judge's denial of an objection raised by one of the parties. If the objection is overruled, the questioning will continue as if the objection had never been raised.

Responsive pleadings: Answers filed by the defendant that either admit or deny the allegations contained in the complaint, and thus respond to them, rather than raise grounds upon which the complaint should be dismissed, such as the expiration of the statute of limitations.

Statute of limitations: A statutory time period beyond which an action cannot be brought.

Summary judgment: Pre-verdict judgment rendered by the court in response to a motion by plaintiff or defendant, who claims that the absence of factual dispute on one or more issues

eliminates the need to send those issues to the fact finder.

Sustain objection: An act in which the court rules in favor of the objection. Many objections deal with rules of evidence; therefore, the witness needn't be concerned about the objection unless the judge gives the witness a specific instruction on whether or how to answer the question.

Testimony: An oral statement made by a witness, under oath, as part of a legal proceeding or legislative hearing. Although "testimony" and "evidence" are frequently used interchangeably, evidence is a broader term that also includes writings and other sources.

Trier of fact: The person or group of persons who has the responsibility of determining the facts relevant to decide a controversy. A jury has the role of the trier of fact in a jury trial; in a non-jury trial the judge sits both as a trier of fact (or fact-finder) and as the trier of law.

Trier of law: The person who has the responsibility of determining the relevant law to decide a controversy. In a trial, the judge is the trier of law.

Venire: a group of potential jurors called to sit on a jury.

* Definitions based on *Barron's Law Dictionary*, third edition.

VIII. *Court Appointed Scientific Experts*
EDUCATION SUBCOMMITTEE

Bert Black, Esq.
Diamond, McCarthy, Taylor & Finley
Dallas, TX 75201

JoAnn Bordeaux, Esq.
Deputy Director, Torts Branch
United States Department of Justice

Dr. David Eaton
University of Washington
Department of Environmental Health

Patrick Malone, Esq.
Stein, Mitchell & Mezines
Washington, DC 20036

Dr. Richard Marshall
Association of Trial Lawyers of America
Washington, DC 20007

William Schwarzer
Senior Judge
U.S. District Court for the Northern District
of California
San Francisco, CA 94102

**IX. *Court Appointed Scientific Experts*
ADVISORY COMMITTEE**

Pamela Ann Rymer (**Chair**)
Judge
U.S. Court of Appeals for the Ninth Circuit
Pasadena, CA

Martin L.C. Feldman
Judge
U.S. District Court for the Eastern District
of Louisiana
New Orleans, LA

William Hendee, PhD
Senior Associate Dean and Vice President
Medical College of Wisconsin
Office of Research, Technology, and
Informatics
Milwaukee, WI

Gilbert Omenn, MD, PhD
Executive Vice President, Medical Affairs
University of Michigan
Ann Arbor, MI

Louis Pollak
Senior Judge
U.S. District Court for the Eastern District
of Pennsylvania
Philadelphia, PA

Susan Poulter, JD, PhD
Professor
University of Utah
College of Law
Salt Lake City, UT

Paul D. Rheingold, Esq.
Partner
Rheingold, Valet, Rheingold & Shkolnik,
P.C.
New York, NY

Edward W. Warren, Esq.
Partner
Kirkland & Ellis
Washington, DC

Sheila Widnall, PhD
Institute Professor
Massachusetts Institute of Technology
Cambridge, MA

**X. *Court Appointed Scientific Experts*
PROJECT STAFF**

Jessica Wyndham
Project Director