



“Science Day”:
Back to School

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Science days can provide courts and litigants with the education necessary to understand the scientific disciplines underpinning many mass tort cases.

How to Explain Causation Theories to the Court

Federal courts are sometimes presented with mass tort litigation that is filled with complex scientific and technical issues and challenges. Accordingly, because not all courts are familiar with the concepts of causality and

exposure, defense counsel is faced with the challenge of potentially educating the court on the methodologies and vocabularies of the scientific disciplines involved in the litigation before it. Frequently, these foundational questions ultimately may lead to *Daubert* or *Frye* challenges to expert opinion testimony, motions in limine, and summary judgment motions late in the case. In turn, federal judges must analyze and interpret sometimes dense technical and scientific evidence, often presented through conflicting, though seemingly credible, expert witness testimony. Jon E. Boljesic, *Court ‘Science Days’ May Not Benefit All Parties Equally*, Law 360 (2019).

Judges remain in the difficult position of having to understand and rule on the reliability of complex scientific testimony, which can be critical to the resolution of multidistrict mass tort litigation. Given their importance, the parties devote substantial strategic efforts to influencing evidentiary decisions before they are made.

The focus of these efforts is often on presenting a party’s scientific theory of the case early, building its credibility before the judge, and discrediting the opponent’s theory in the process *Id.*

One way to streamline this exercise is holding what are now referred to as “science day” hearings during which parties have an early pretrial opportunity to present an overview of the scientific and technical issues to the court. Science day hearings have quickly become somewhat commonplace in mass tort litigation. Barbara J. Rothstein, & Catherine R. Borden, Fed. Jud. Ctr. *Managing Multidistrict Litigation in Products Liability Cases: a Pocket Guide for Transferee Judges* (2011). Generally, experts from both sides present scientific information in an informative, non-adversarial format. The presentations normally involve no cross-examination, no official transcripts, and an agreement that no testimony can be used in subsequent *Daubert* hearings or other proceedings. Lisa M. Martin, *Using*



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Science Day to Your Advantage, 2(4) Pro Te: Solutio (2009). Science days are a useful tool in which the court can engage to harness a deeper understanding and working knowledge of complex scientific issues early in a matter or series of matters.

Science day hearings can also give judges an opportunity for a briefing specifically on the science that will serve as the foundation for legal arguments and eventual motion practice or trial. They also offer the parties a meaningful opportunity to make an impression on the judge and set the stage for the trial. As one commentator described, a science day is essentially the court inviting both sides to “come in, lawyers, put on witnesses, no cross-examination, more like a classroom, and tell us your view of how the science is supposed to work in this particular case.” Bert Black, Daubert Hearing Sympos. (Univ. California Davis, 2012).

This article will examine the different flavors of science day hearings used by judges and courts across the country and the advantages of these hearings for defense counsel. The article will look through the lens of several science day orders across the country, focusing particularly on a science day order from the United States District Court for the Northern District of Mississippi, *Cooper v. Meritor, Inc.*, No. 4:16-CV-52-DMB-JMV, 2019 U.S. Dist. Lexis 21788 (N.D. Miss Feb. 11, 2019). In that case, the court held a science day for the parties to lay out the complex environmental, scientific, and medical issues in a complex, mass tort litigation case involving a manufacturing plant’s purported ground and air contamination that allegedly caused a wide variety of cancer in residents and former residents of a bordering neighborhood.

Possible Mechanics of Science Day

Although organizations such as the American Bar Association (ABA) have proposed guidelines by which science days should be conducted, there are no formalized standards or procedures governing science days in federal court. Am. Bar Ass’n, Civil Trial Pract. Stand. 12–14 (2007). Therefore, the structure of a science day is based entirely on the needs and preferences of the presiding judge. Boljesic, *supra*.

The ABA’s Civil Trial Practice Standards lay a foundation for science day procedure.

Civ. Trial Pract. Stand., *supra*, at 12–14. The standards recognize that in cases involving complex technology or other complex subject matter that may be especially difficult for nonspecialists to comprehend, the court may permit or require the use of tutorials to educate the court. *Id.* The ABA reiterates that science days are intended to provide the court with background information to assist the court in understanding the technology or other complex subject matter involved in the case. *Id.* Science days may, but need not, seek to explain the contentions or arguments made by each party with respect to the technology or complex subject matter. *Id.*

In light of the court’s broad discretion and the ABA’s blueprint, courts often invite the parties to express their views on the desirability of a science day where the court believes a tutorial might help it in understanding the complex technology or other scientific subject matter. *Id.* Once the court decides to permit or require a science day, it may invite the parties to suggest the subject matter and format of the hearing. *Id.* If the parties cannot agree on the subject matter and format, however, courts often invite each party to submit a description of its proposals, to explain how that science day will assist the court, and why it is preferable to the tutorial proposed by another party. *Id.* Then, the court may approve the strategy submitted by one of the parties, or it may fashion its own science day after providing the parties with an opportunity to comment on the court’s proposed subject matter and format. *Id.*

The Practical and Strategic Benefits of Science Day

Science days are intended to be non-adversarial tutorials for the court. Accordingly, the ostensive purpose of the parties is to lay out the fundamental science involved in a case objectively. Ideally, before deciding the admissibility of any expert testimony, the purpose of the science day is to allow the judge to ask questions and become familiarized with the basic technical issues in the case.

In reality, a science day can set the tone for the entire case at a very early stage. It is often the first opportunity that the parties and their experts have to sway the court in their favor. The “neutral presentations” by

the parties serve as a chance to advocate for their proposed interpretation of the applicable science. As such, attorneys and their experts are well served by being well prepared and persuasive while still conforming to the procedure ordered by the judge.

From a defense prospective, proposing a science day can have serious tactical significance and can be advantageous in

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many ways. First, a science day is typically scheduled near the outset of the litigation, well before *Daubert* motion practice and potentially before the exchange of expert reports. Therefore, a science day allows the defense to get an early understanding of the plaintiff’s technical case. Although many science days are structured so that cross-examination is prohibited, the record is not distributed to the parties, and the statements made during the proceeding cannot be used by the parties, defense counsel can still use what they learned from the plaintiff’s presentation later in the litigation to their advantage. Second, a science day is an opportunity for the defense to build credibility with the judge. Since the court uses a science day to learn about the scientific and technical issues in the case, defense counsel has a chance to emphasize their expertise and bring to light any glaring causation issues in the plaintiff’s case.

In light of how reluctant some courts are to grant *Lone Pine* orders to identify and cull potentially meritless claims, science days present a viable alternative for educating the court and demonstrating causa-



tion issues early on in the case. *Lore v. Lone Pine Corp.*, 1986 WL 637507 (N.J. Super. Nov. 18, 1986). Judges know that Federal Rule of Evidence 702 and the *Daubert* decision require them to act as gate keepers, and science days are a useful tool for judges tasked with determining the admissibility of expert testimony. Science days have been recognized as so helpful in meeting that gatekeeping responsibility that at least one circuit judge has expressed regret when the circuit court did not have the benefit of a tutorial that was presented to the district court but not recorded:

I salute the district court and the parties for having held a tutorial on the technology. It was undoubtedly valuable to the district judge. The only problem is, it was unreported (which is understandable, as a principal benefit of a tutorial is the opportunity for informal exchange) and thus, it was unavailable to assist us. In future cases where such formats are used—and I encourage it, having benefited from similar tutorials when I served as a district judge—I urge district judges and litigants to consider the possibility of videotaping the tutorial for whatever assistance it may be to the court of appeals.

Altera Corp. v. Clear Logic, Inc. (9th Cir. 2005).

Since science days are often “off-the-record” and unreported to preserve the non-adversarial and educational nature of the hearings, federal judges will sometimes invite state court judges presiding over similar litigation to attend and observe the science day proceedings. *In re Invokana (Canagliflozin) Products Liability Litigation* (D. N.J. 2017).

Science Days in Practice

Science days are not one-size-fits-all. Rather, the court has broad discretion over the structure and content of the science day proceeding. Civ. Trial Pract. Stand., *supra*, at 12–14. Depending on the needs of the court, a variety of formats are possible, including live presentations or demonstrations; prerecorded presentations or demonstrations; question-and-answer or panel sessions with the judge; or presentations followed by the opportunity for questioning by each party. In some formats, each side’s experts engage in a dialogue

moderated by the court so that the court can ask questions about technical terminology and determine areas of contention. Peter S. Menell et al., Fed. Jud. Ctr., Patent Case Management Judicial Guide §5.1.2.2.1 (3d ed., 2016).

Additionally, the topics covered during a science day can be tailored by the judge to the unique factual circumstances of the case. For example, topics might include the characteristics, properties, or design of a product at issue; the diagnosis and treatment of a condition; causes of a medical condition or outcome; a demonstration of how a certain method, software, or product works; an overview of key terminology and published scientific literature relevant to the claims and defenses in a litigation; or a summary of the research and development work or regulatory history surrounding a particular product or class of products. Melissa J. Whitney, Fed. Jud. Ctr., Tutorials on Science and Technology (2018).

In *In re Roundup Products Liability Litigation*, the U.S. District Court for the Northern District of California grappled with multidistrict product liability litigation arising from the allegedly carcinogenic qualities of the glyphosate-based herbicide Roundup. *In re Roundup Prods. Liab. Litig.* (N.D. Cal. 2016). The court ordered a science day for each side to explain the science behind the evidence presented in support of their case. In the order, the court stated, “Science Day is intended to offer an informal overview of the basic science underpinning the parties’ dispute, with the goal of better preparing the Court to evaluate the studies and expert testimony that will be presented during [the] *Daubert* proceedings.” The court decided that the parties would not be permitted to make presentations on the merits, and they were not permitted to discuss the studies or organizations with which they agreed or disagreed. Each side was to make its own non-adversarial presentation, and the parties were not permitted to cite testimony or materials submitted during the science day later in any proceeding. The proceedings were not part of the record and were not accessible to either party after the science day hearing.

In *In re Invokana (Canagliflozin) Products Liability Litigation* (2016), more than 110 cases were filed on behalf of individuals

who suffered ketoacidosis, kidney damage, and other side effects allegedly associated with the Type 2 diabetes medications Invokana and Invokamet. In response, the U.S. Judicial Panel on Multidistrict Litigation ordered that all federal claims involving the medications be transferred to the U.S. District Court for the District of New Jersey for coordinated pretrial proceedings. In response, the U.S. District Court for the District New Jersey ordered a science day. In that order, the court instructed counsel to meet and determine the parameters concerning the presentations. *In re Invokana (Canagliflozin) Prods. Liab. Litig.* (D. N.J. 2017). The court also invited state court judges presiding over Invokana cases to this science day to educate other judges and promote continuity in the nationwide litigation efficiently.

Similarly, in *In re Fluoroquinolone Products Liability Litigation*, the U.S. Judicial Panel on Multidistrict Litigation wrestled with over 600 lawsuits against a drug manufacturer in which plaintiffs claimed they suffered aortic dissection and aortic aneurysms resulting in hospitalization, surgery, or death within one year after taking the medication. All federal claims involving the drug were transferred to the U.S. District Court for the District of Minnesota for coordinated pretrial proceedings. To understand the complicated medical data at issue better, the district court ordered a science day and allowed the parties to agree on a proposed protocol. The parties’ scientists were ordered to give PowerPoint presentations about fluoroquinolones and peripheral neuropathy for two hours each. *In re Fluoroquinolone Prods. Liab. Litig.* (D. Minn. 2016). The PowerPoints were submitted to the court before the science day, but were not exchanged by the opposing parties. The parties also proposed not to have a court reporter, cross-examination, or questioning. However, the court decided that it would be helpful to have a court reporter to create a transcript for the court’s use, thus allowing continuity among different law clerks, but the transcript would not be an official transcript and could not be ordered by the parties.

Likewise, in *In re Abilify Products Liability Litigation* (2016), plaintiffs involved in multidistrict litigation consolidated in the Northern District of Florida claimed

that drug manufacturers failed to warn doctors and consumers that their antipsychotic drug could cause detrimental compulsive behaviors. In June 2019, more than 2,600 of these lawsuits had been filed in federal court. In the early stages of the litigation, however, the U.S. District Court for the Northern District of Florida ordered a science day to establish the fundamental science at issue. The order stated:

The purpose of Science Day is not to test the evidence or weigh the strength of any scientific theories. Rather, Science Day will be conducted in an effort to familiarize the Court with the medical science relevant to the litigation, so that the undersigned is in the best position possible to manage the case as it proceeds. The goal is to educate the undersigned about how Abilify works on the brain and/or body and the scientific theories underlying this litigation.

In re Abilify (Aripiprazole) Prods. Liab. Litig. (N.D. Fla. 2016).

The parties proposed, and the court there adopted, the following parameters for the science day: (1) one hour per side; (2) off-the-record and not binding on the parties; and (3) the presentations limited to scientific evidence equally available to all parties. The parties also proposed that the presentations be made by the lawyers; however, the court declined that suggestion in favor of presentations by scientists or medical experts. The court decided that the expert presentations could be guided by the attorney presenting the expert, but there could be no cross-examination by opposing counsel. Further, the plaintiffs and defendants were both ordered to provide the court with up to twenty relevant scientific articles and to file a proposal jointly for the topics to be covered. Additionally, the court decided that the science day would be conducted in open court, but experts would not be under oath. The presentations were recorded for use by the court but remained unavailable to the parties.

Further, the overseeing court sought a science day in *In re Taxotere (Docetaxel) Products Liability Litigation* (2016), multi-district litigation that arose out of a breast cancer chemotherapy drug, which the plaintiffs claimed caused the undisclosed side effect of permanent baldness. The cases were consolidated in the Eastern Dis-

trict of Louisiana for pretrial proceedings. The litigation involved hundreds of claims as well as highly technical medical issues. The U.S. District Court for the Eastern District of Louisiana ordered a science day for the parties to provide the court with an overview of the scientific issues. *In re Taxotere (Docetaxel) Prods. Liab. Litig.* (E.D. La. 2016). The court ordered each side to submit a statement of facts and legal issues that were not to be exchanged between parties. The court also ordered each side to submit a number of scientific articles supporting their position that were to be exchanged between parties. Each side was also instructed to make a presentation of no more than an hour and a half through one expert witness's direct examination. The court had the opportunity to ask questions of the parties' experts during and after each presentation. The hearing was off the record and was ordered not to be used for any purpose other than the court's educational benefit.

Lastly, in *Cooper v. Meritor, Inc.*, No. 4:16-CV-52-DMB-JMV, 2019 U.S. Dist. Lexis 21788 (N.D. Miss. Feb. 11, 2019), the plaintiffs claimed that a hubcap-manufacturing plant disposed of hazardous wastes into areas adjacent to a residential neighborhood in Mississippi. *Id.* The plaintiffs asserted that their widely varied cancer diagnoses were attributable to the plant's contamination of the soil and air near their homes. To educate and provide the court with an overview of the general environmental, scientific, and medical issues related to the case, the U.S. District Court for the Northern District of Mississippi ordered a science day. *Id.* Both the plaintiffs and defendants were ordered to make presentations to the court. These presentations were to be made by each side's respective experts in an objective lecture format, without providing any specific opinions relating to the contaminants or diseases alleged in the case. The attorneys were not permitted to question or cross-examine the experts, but they were allowed to offer suggested questions for the court to ask while the court examined the experts. Each side was allotted two-and-one-half hours for their presentations, which could involve PowerPoints or other demonstrative aids. The court also ordered the parties to exchange an outline of topics to be

addressed during their respective presentations seven days before the science day, and any changes to those outlines at least 48 hours before the science day. The science day was held off the record, was not subject to discovery, and was transcribed for the court's educational use only.

In *Meritor*, defense counsel focused on both general and specific causation, including the relevant science issues in the personal injury lawsuits. They presented experts in epidemiology, toxicology, air modeling, and specific causation, with a focus on carcinogenesis. The experts used the Federal Reference Manual on Scientific Evidence as an outline for examining general and specific causation. Reference Manual on Scientific Evidence, Fed. Jud. Ctr. (3d ed., 2011). These experts presented on the methodologies for assessing whether the exposure to certain contaminants could be a substantial factor in producing a particular injury or disease.

Concluding Observations

Although we cannot identify widescale science day trends based on the cases discussed here, in these cases, the federal courts instituted off-the-record proceedings and did not permit party cross-examination. Transcriptions, when a court ordered them, were for court use only, for the court's benefit. The courts did not permit experts to express opinions but only to explain the science. The degree to which the courts asked for supplementary background material varied, from asking for a specific number of scientific studies to limiting materials to science day demonstratives. In one case, state court judges hearing related cases were invited to attend.

The best way to understand how a court may approach a science day, then, as with other litigation areas, still remains through research about the presiding judge, because, as mentioned, a science day's structure and strictures will depend on the presiding judge's needs and preferences.

No matter the structure or strictures, though, science days have advantages for the defense. For one, despite their off-the-record nature, counsel can still use what they learned from a plaintiff's presentation later to an advantage.

