Case No. 20-1417

IN THE UNITED STATES COURT OF APPEALS
FOR THE EIGHTH CIRCUIT

THOMAS HARDER,
Appellant,

vs.

UNION PACIFIC RAILROAD COMPANY,
Appellee.

Appeal from the U.S. District Court for the District of Nebraska
Honorable Cheryl R. Zwart, U.S. Magistrate Judge
Case No. 8:18-cv-00058-CRZ

BRIEF OF THE APPELLANT

Jonathan Sternberg, Mo. #59533
Jonathan Sternberg, Attorney, P.C.
2323 Grand Boulevard #1100
Kansas City, Missouri 64108
Telephone: (816) 292-7020
Facsimile: (816) 292-7050
jonathan@sternberg-law.com

Shawn M. Sassaman
Bern Cappelli, LLP
101 West Elm Street, Suite 215
Conshohocken, PA 19428
Telephone: (610) 941-4444
Facsimile: (610) 941-9880
ssassaman@bernllp.com

COUNSEL FOR APPELLANT

ORAL ARGUMENT REQUESTED

Summary and Request for Oral Argument

Employee brought a negligence action against Railroad under the Federal Employers' Liability Act ("FELA"), alleging that his exposure to carcinogens during his work for Railroad caused or contributed to his development of a follicular lymphoma. His medical causation expert concluded the toxic exposure was a likely cause of the lymphoma. Railroad moved to exclude the expert, arguing his opinions were insufficient. The district court agreed, excluded the expert, and granted Railroad summary judgment. Employee now appeals.

The district court abused its discretion in excluding Employee's expert. To satisfy the standard for expert testimony as to causation of an injury under the FELA, so long as the expert presents scientifically reliable evidence that the railroad's action likely played some role, however small, in causing the plaintiff's injuries, the testimony should be admitted. Employee's expert performed a differential etiology analysis to reach his conclusion, which is a standard, valid scientific method in determining an injury's cause. Any concerns from his lack of information about the precise amount of Employee's toxic exposure or his inability to definitively rule out age or "bad luck" as possible causes of the cancer go to the weight of his testimony and not its admissibility.

The issues on appeal are complex, subtle, and fact-intensive. The interchange of oral argument would assist the Court in deciding them. The appellant requests 15 minutes per side.

Table of Contents

Table of Authorities iv

Jurisdictional Statement 1

Statement of the Issue 2

Statement of the Case 3

A. Overview 3

B. Mr. Harder's claims 4

C. Dr. Chiodo's evaluation and report 7

D. Proceedings below 12

Summary of the Argument 18

Argument 19

Standard of Review 19

A. To satisfy *Daubert*'s standard for expert testimony as to causation of an injury under the FELA, the expert's opinion only needs to meet the FELA's relaxed standard of causation: that the railroad's action likely played a part, no matter how small, in bringing about the plaintiff's injury. 22

1. *Daubert* provides a liberal framework for the admission of expert testimony under the Federal Rules of Evidence. 23

2. The FELA's relaxed causation standard impacts the *Daubert* analysis: so long as the expert presents scientifically reliable evidence that the railroad's action likely played some role, however small, in causing the plaintiff's injuries, the testimony should be admitted. 30

3. An expert may come to a conclusion on causation by performing a differential etiology analysis, and to satisfy *Daubert* and be admissible to establish causation in an FELA case it does not have to rule out all other possible causes. 37

B. Dr. Chiodo's testimony that Mr. Harder's exposure to carcinogenic toxins during his railroad work was a likely cause of his lymphoma satisfied *Daubert*'s standard for expert testimony as to causation of an injury under the FELA and was admissible. 41

1. Dr. Chiodo performed a standard differential etiology analysis. 42

2. Dr. Chiodo properly ruled in Mr. Harder's toxic exposure during his railroad work as a likely cause of his lymphoma. 43

3. That Dr. Chiodo could not definitively rule out Mr. Harder's age or "bad luck" as possible causes of his lymphoma did not render his conclusion inadmissible that the toxic exposure was a likely cause. 46

4. Any concerns from Dr. Chiodo's lack of information about Mr. Harder's precise amount of exposure or inability to definitively rule out age or "bad luck" as possible causes of Mr. Harder's lymphoma go to the weight of his testimony and not its admissibility. 48

Conclusion 51

Certificate of Compliance 52

Certificate of Service 53

Addendum 54

Doc. 64: Judgment (Jan. 29, 2020) A1

Doc. 63: Memorandum and Order (Jan. 29, 2020) A2

Doc. 62: Order (Jan. 8, 2020) A16

Doc. 39-4: Report of Dr. Ernest P. Chiodo (June 3, 2019) A18

Certificate of Service A25

Table of Authorities

Cases

Anderson v. Liberty Lobby, Inc., 477 U.S. 242 (1986)..... 19

Atchison, Topeka & Santa Fe Ry. Co. v. Buell, 480 U.S. 557 (1987)..... 32

Bailey v. Cent. Vt. R.R., 319 U.S. 350 (1943)..... 33

Boeing Co. v. Shipman, 411 F.2d 365 (5th Cir. 1969) 33

Brown v. Burlington N. Santa Fe Ry. Co., 765 F.3d 765 (7th Cir. 2014)..... 46-47

Claar v. Burlington N. R.R. Co., 29 F.3d 499 (9th Cir. 1994)..... 36

Clausen v. M/V NEW CARISSA, 339 F.3d 1049 (9th Cir. 2003) 41, 44-45

CSX Transp., Inc. v. McBride, 564 U.S. 685 (2011) 32-33, 48

Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579 (1993) ..... *passim*

Davis v. ODECO, 18 F.3d 1237 (2d Cir. 1994) 36-37

First Union Nat. Bank v. Benham, 423 F.3d 855 (8th Cir. 2005) 28

Frye v. United States, 293 F. 1013 (D.C. Cir. 1923) 24-25

Geier v. Mo. Ethics Comm'n, 715 F.3d 674 (8th Cir. 2013) 20

Glastetter v. Novartis Pharm. Corp., 252 F.3d 986 (8th Cir. 2001) (per curiam)..... 38

Hardyman v. Norfolk & W. Ry. Co., 243 F.3d 255 (6th Cir. 2001) 41, 44-45

Heller v. Shaw Indus., Inc., 167 F.3d 146 (3d Cir. 1999) 41

Hickerson v. Pride Mobility Prods. Corp., 470 F.3d 1252 (8th Cir. 2006) 28

Highmark, Inc. v. Allcare Health Mgmt. Sys., Inc., 572 U.S. 559 (2014) 20

Hines v. Consolidated Rail Corp., 926 F.2d 262 (3d Cir. 1991) .. 20, 34-36

Hose v. Chicago N.W. Transp. Co., 70 F.3d 968 (8th Cir. 1995) 30

In re Conrail Toxic Tort FELA Litig., No. CIV. A 94-11J, 1998 WL 465897 (W.D. Pa. Aug. 4, 1998) 46-48

In re Paoli R.R. Yard PCB Litig., 35 F.3d 717 (3d Cir. 1994) 39

In re Prempro Prod. Liab. Litig., 586 F.3d 547 (8th Cir. 2009) 2, 38, 48-49

Jenson v. Eleventh Taconite Co., 130 F.3d 1287 (8th Cir. 1997) 29

Johnson v. Mead Johnson & Co., LLC, 754 F.3d 557 (8th Cir. 2014) ..... *passim*

Kudabeck v. Kroger Co., 338 F.3d 856 (8th Cir. 2003) 38

Kuhn v. Wyeth, Inc., 686 F.3d 618 (8th Cir. 2012) 27

Kumho Tire Co. v. Carmichael, 526 U.S. 137 (1999) 25

Lauzon v. Senco Prods., Inc., 270 F.3d 681 (8th Cir. 2001) 2, 26, 29, 38-39, 49

Lynch v. N.E. Regional Commuter R.R. Corp., 700 F.3d 906 (7th Cir. 2012) 20, 50

Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574 (1986) 19-20

Metro-N. Commuter R.R. Co. v. Buckley, 521 U.S. 424 (1997) 31

Monessen S.W. Ry. Co. v. Morgan, 486 U.S. 330 (1988) 31

Moody v. Maine Cent. R.R. Co., 823 F.2d 693 (1st Cir. 1987) 30

Norfolk & W. Ry. v. Ayers, 538 U.S. 135 (2003) 32

Poleto v. Conrail, 826 Fd.2d 1270 (3d Cir. 1987) 31

Polski v. Quigley Corp., 538 F.3d 836 (8th Cir. 2008) 24

Robinson v. GEICO Gen. Ins. Co., 447 F.3d 1096 (8th Cir. 2006) 25-26

Rogers v. Mo. Pac. R.R. Co., 352 U.S. 500 (1957) 32

Sappington v. Skyjack, Inc., 512 F.3d 440 (8th Cir. 2008) 27

Savage v. Union Pac. R.R. Co., 67 F. Supp. 2d 1021 (E.D. Ark. 1999) 36

Sentilles v. Inter-Caribbean Shipping Corp., 361 U.S. 107 (1959) ... 34-35

Sinkler v. Mo. Pac. R.R. Co., 356 U.S. 326 (1958) 31

Smith v. BMW N. Am., Inc., 308 F.3d 913 (8th Cir. 2002) 28-29, 39

Smith v. Nat. R.R. Passenger Corp., 856 F.2d 467 (2d Cir. 1988) 33

Tedder v. Am. Railcar Indus., Inc., 739 F.3d 1104 (8th Cir. 2014) 38

Torgerson v. City of Rochester, 645 F.3d 1031 (8th Cir. 2011) (en banc) 19

Turner v. Iowa Fire Equip. Co., 229 F.3d 1202 (8th Cir. 2000) 38-39

United States v. Finch, 630 F.3d 1057 (8th Cir. 2011) 26

Watkins Inc. v. Chilkoot Distrib., Inc., 655 F.3d 802 (8th Cir. 2011) 19

Westberry v. Gislaved Gummi AB, 178 F.3d 257 (4th Cir. 1999) 2, 40, 44-45

Wood v. Minn. Mining & Mfg. Co., 112 F.3d 306 (8th Cir. 1997) 26, 41

United States Code

28 U.S.C. § 1291 1

28 U.S.C. § 1331 1

28 U.S.C. § 1337 1

45 U.S.C. § 51 ..... *passim*

Federal Rules of Civil Procedure

Rule 56 20

Federal Rules of Evidence

Rule 702 ..... 23-27, 30, 42-43

Rule 703 23-24

Federal Rules of Appellate Procedure

Rule 4 1

Rule 32 52

Other authorities

Federal Judicial Center, *Reference Manual on Scientific Evidence* (1994) 40

Jurisdictional Statement

This is an appeal from a final order and judgment of the U.S. District Court for the District of Nebraska in an action brought under the Federal Employers' Liability Act, 45 U.S.C. §§ 51 *et seq*. ("FELA") (Appellant's Appendix ["Aplt.Appx."] 8). The district court had jurisdiction under both 28 U.S.C. § 1331, because the plaintiff's claims were a civil action arising under the laws of the United States, and 28 U.S.C. § 1337(a), because the plaintiff's claims were a civil action or proceeding arising under an act of Congress regulating commerce.

The district court entered its final order and judgment disposing of all parties' claims on January 29, 2020 (Aplt.Appx. 701, 715; Appellant's Addendum ["Add."] A1, A15). The plaintiff filed his notice of appeal on February 27, 2020 (Aplt.Appx. 716). Under Fed. R. App. P. 4(a)(1)(A), the notice of appeal was timely, as it was filed within 30 days of the district court's final order and judgment.

Therefore, this Court has appellate jurisdiction under 28 U.S.C. § 1291.

Statement of the Issue

The district court abused its discretion in excluding Dr. Ernest Chiodo as Mr. Harder's medical causation expert and therefore granting the railroad summary judgment. Under the FELA, an expert's opinion only needs to show reliably that the railroad's action likely played a part, no matter how small, in bringing about the plaintiff's injury. Dr. Chiodo properly concluded using a differential etiology analysis, a standard scientific method, that the substantial exposure to carcinogenic toxins Mr. Harder reported from his railroad work 30 years ago was a likely cause of his lymphoma. That Dr. Chiodo did not know the precise amount of the exposure or could not definitively rule out age or "bad luck" as possible causes went to the weight of his testimony, not its admissibility.

Johnson v. Mead Johnson & Co., LLC, 754 F.3d 557 (8th Cir. 2014)

In re Prempro Prod. Liab. Litig., 586 F.3d 547 (8th Cir. 2009)

Lauzon v. Senco Prods., Inc., 270 F.3d 681 (8th Cir. 2001)

Westberry v. Gislaved Gummi AB, 178 F.3d 257 (4th Cir. 1999)

Statement of the Case

A. Overview

From 1979 to 1987, a predecessor to the Union Pacific Railroad Company ("UP") employed Thomas Harder as a machinist (Aplt.Appx. 9, 12). In 2015, he was diagnosed with follicular lymphoma, a type of cancer (Aplt.Appx. 83, 626). In 2018, he brought a negligence action for damages against UP under the FELA, 45 U.S.C. §§ 51 *et seq.*, alleging that his exposure to various known toxic substances and carcinogens during his railroad work caused or contributed to his developing the lymphoma (Aplt.Appx. 8-9).

Mr. Harder identified Dr. Ernest Chiodo, M.D., as his medical causation expert to testify as to the general and specific causation of his injuries (Aplt.Appx. 83, 626). UP moved to exclude Dr. Chiodo's testimony under Fed. R. Evid. 702, 703, and 705, arguing that his opinions were insufficient under the *Daubert* standard (Aplt.Appx. 25, 28). It then moved for summary judgment, arguing that without a causation expert, Mr. Harder could not prove his claims (Aplt.Appx. 78, 86). Mr. Harder timely responded and opposed UP's motions (Aplt.Appx. 341, 624).

The district court granted UP's motion to exclude Dr. Chiodo, holding his opinions did not meet the *Daubert* standard, and then granted UP summary judgment (Aplt.Appx. 701, 715; Add. A1, A15).

Mr. Harder now appeals (Aplt.Appx. 716).

B. Mr. Harder's claims

Thomas Harder began his railroad employment in 1979 as a machinist for the Chicago Northwestern Railroad, a predecessor to UP, where he worked until he quit in 1987 (Aplt.Appx. 61, 83, 247, 252, 272). In November 2015, he was diagnosed with follicular lymphoma, a type of cancer (non-Hodgkin lymphoma) of the endocrine system, on the left side of his groin area (Aplt.Appx. 83, 261, 626).

In February 2018, Mr. Harder filed a negligence action for damages against UP under the FELA in the U.S. District Court for the District of Nebraska, alleging that the follicular lymphoma was caused by his exposure to various "toxic substances" and carcinogens during his railroad employment (Aplt.Appx. 8-10, 83, 626). He alleged these included but were not limited to "petroleum based lubricants, solvents, diesel fuel/exhaust/benzene, heavy metals, creosote, manganese and rock/mineral dust and asbestos fibers" (Aplt.Appx. 9).

Specifically, Mr. Harder alleged that he

> was exposed to petroleum based lubricants while working on the locomotives; solvents used to clean the various component parts of the diesel engine; diesel fuel/exhaust and benzene from the locomotive's exhausts; creosote from touching and kneeling on ties; manganese from welding fumes; silica from the locomotive's sand reservoirs and asbestos dust from brake shoes and insulation.

(Aplt.Appx. 9). He alleged that his "exposure to the above referenced toxic substances and known carcinogens, whether by touch, inhalation

or consumption, in whole or in part, caused or contributed to his development of lymphoma" (Aplt.Appx. 9).

Mr. Harder alleged this was negligence by UP's predecessor because the railroad used known cancer-causing materials in its operation (Aplt.Appx. 9). He alleged the railroad knew, or in the ordinary exercise of ordinary care should have known, that these materials were harmful (Aplt.Appx. 9). He alleged eleven specific ways in which this failed the railroad's duty of care (Aplt.Appx. 10-11).

In his deposition, Mr. Harder testified that he usually worked on locomotives as a mechanic inside a building called the "diesel shop" (Aplt.Appx. 253). This was in Butler, Wisconsin (Aplt.Appx. 253).

Mr. Harder said his general work hours were eight hours straight, but he often worked 16-hour or 12-hour days and even once worked "a week solid, seven days a week, 24 hours a day" during a strike (Aplt.Appx. 262). He said about 30% of his work was welding, including stick welding, MIG welding, and welding drawbar pockets, which he said was "the worst job of all" because it was in a "[c]onfined area, and you were up, underneath and so the fumes and the heat and everything," and which he said he performed a "considerable" number of times (Aplt.Appx. 255-56). He also described other "bad jobs," including blower change-outs, gear case change-outs on motors, cleaning screens inside motors that oil passed through, changing brakes, and even cleaning out toilets (Aplt.Appx. 256, 266, 276).

Mr. Harder said that while he and the other workers were to wear masks and respirators, often the supply room was out of them (Aplt.Appx. 257, 277). He said that the gloves the railroad gave them were inadequate and "did not hold up" (Aplt.Appx. 274-75).

Mr. Harder testified that he used chemicals in his work, including mineral spirits, water treatment additives, diesel fuel, motor oil, manganese, and rock mineral dust, all of which got on his skin and were inhaled on a daily basis, which caused him concern (Aplt.Appx. 257, 264-66, 268-69). He said main engine oil and diesel fuel are both petroleum-based lubricants, and these got on his skin, causing his hands to sting, and were inhaled on a daily basis, too (Aplt.Appx. 264-66, 268). He said the amount of his exposure to diesel fuel was "high" (Aplt.Appx. 269).

Mr. Harder said exhaust from the diesel engines was "the biggest" concern, because two or more locomotives would be running inside the shop, which happened daily and often for hours, and the fans could not handle the level of exhaust, especially during the wintertime when the exterior doors were closed because of the cold Wisconsin winters, it was "atrocious" and often the fans would stop working (Aplt.Appx. 258, 266). He said it would "loo[k] like London fog" (Aplt.Appx. 258) and described the amount of exhaust as "immense" (Aplt.Appx. 262). He said his eyes would water and sometimes he would not be able to breathe, "and that's

when you bailed out when it was that bad," stating he did that "numerous" times (Aplt.Appx. 267).

Mr. Harder also testified that he performed oil testing daily, which involved sampling several ounces of a locomotive's engine oil, heating it to 212 degrees to see if there was any water in it that would boil, and then running a flame over the top to record the temperature at which it would flash (Aplt.Appx. 263). He said this was done without gloves and produced considerable smoke, which "gets pretty nasty" and was inhaled (Aplt.Appx. 263-64).

C. Dr. Chiodo's evaluation and report

Mr. Harder timely disclosed expert witnesses (Aplt.Appx. 83, 99, 626). He listed Dr. Hernando Perez, Ph.D. as his expert "as to notice and foreseeability of the hazards associated with [Mr. Harder]'s crafts, including exposure to carcinogens and the railroad industry's knowledge of the hazards of exposure to toxins" (Aplt.Appx. 84, 99, 627). He also listed Dr. Ernest Chiodo, M.D. as his "medical expert who will testify as to general and specific causation of [his] injuries" (Aplt.Appx. 84, 99, 626).

Dr. Chiodo has a number of advanced degrees, including Doctor of Medicine, Juris Doctor, and Masters of Science in both Biomedical Engineering and Occupational and Environmental Health Sciences (specializing in Industrial Toxicology) from Wayne State University, Master of Public Health from Harvard University, Master of Science in

Threat Response Management and Master of Business Administration from the University of Chicago, and Master of Science in Evidence-Based Health Care from the University of Oxford, England (Aplt.Appx. 417-18). He is board-certified in internal medicine, preventative medicine in occupational medicine, and preventative medicine in public health, and also is a certified industrial hygienist (Aplt.Appx. 421). Dr. Chiodo is licensed as a physician and surgeon in Michigan, Illinois, Florida, and New York, licensed as an attorney in Michigan and Illinois, and has been a professor of medicine, industrial hygiene, industrial toxicology, and law (Aplt.Appx. 420, 422).

Dr. Chiodo produced a report in this case concluding that the exposures to diesel exhaust, solvents, welding fumes, and benzene, all of which are known to cause an increased risk of non-Hodgkin lymphoma, that Mr. Harder experienced during the course of his railroad employment were a significant contributing factor in his development of follicular lymphoma (Aplt.Appx. 415; Add. A25).

Dr. Chiodo stated that to reach his conclusions, he reviewed Mr. Harder's complaint, answers to interrogatories, and response to UP's first set of requests for production, as well as his medical records from three healthcare providers, and also interviewed Mr. Harder (Aplt.Appx. 410; Add. A20). Mr. Harder told Dr. Chiodo that his work as a machinist for UP's predecessor involved extensive repairs of

locomotives, during which he had heavy exposure to diesel exhaust, welding fumes, and solvents (Aplt.Appx. 410; Add. A20).

In his deposition, Dr. Chiodo described his methodology as this:

> [T]he basis of my opinion would be my review of the records indicated in my report, my conversation with Mr. Harder, and my knowledge, training and experience, knowledge, training and experience in the relevant disciplines. Now, I corroborate that opinion with citations from the literature. I cite articles. I find articles that corroborate my opinion because that is, this is in federal court and my understanding that pursuant to *Daubert*, I have to cite corroboration of my opinion.
>
> …
>
> Q. Okay. So after you reach your opinion, then you go looking for studies that corroborate your opinion because that's necessary in federal court under the *Daubert*?
>
> A. Yes, ma'am. I don't formulate my opinion by doing the literature search because I already have -- my knowledge, training and experience leads me to my opinion. The literature search is not the basis of my opinion. It corroborates my opinion in this episode, in this instance.

(Aplt.Appx. 109-10).

In his report, Dr. Chiodo discussed a number of peer-reviewed medical and scientific literature that he said supported his conclusion, including literature showing: "Work as a machinist as well as exposure to diesel exhaust is well known to cause Non-Hodgkin's Lymphoma;" "Exposure to solvents and welding fumes are known to cause Non-Hodgkin's Lymphoma;" "Benzene exposure is a known to cause [*sic*]

Non-Hodgkin's Lymphoma;" "Railroad work is well known as an occupation with significant diesel exhaust and fuel exposure;" and "Exposure to diesel exhaust causes exposure to benzene" (Aplt.Appx. 410-15; Add. A20-25). In his deposition, he discussed that research (Aplt.Appx. 109-110).

Dr. Chiodo also described his methodology as using what he called a "differential diagnosis of etiology," which he defined as being "where a doctor considers the likely diseases that somebody could be suffering from given their clinical presentation. They start eliminating the possible diseases, and at the … at the end of the process … they have the diagnosis" (Aplt.Appx. 148). Applied to Mr. Harder, he described his differential diagnosis of etiology as this:

> I considered the likely causes including [Mr. Harder]'s employment. Really the likely causes are his age, born in 1953, can't exclude that as a cause, just age, and likely causes, his exposure to work as a machinist, including exposure to diesel exhaust, solvents, welding fumes and benzenes. Those are part of the differential diagnosis of etiology and I can't exclude any of those, so I did do a differential diagnosis of etiology.

(Aplt.Appx. 147).

Dr. Chiodo stated he ruled in likely causes, stating Mr. Harder's "age is probably, other than his occupational exposures, the leading cause. Maybe there's some other possible causes that are less likely," and also ruled-in the "vagaries of cancer" – i.e., "bad luck" (Aplt.Appx.

149-50). Dr. Chiodo essentially ruled-out Mr. Harder's smoking history as *de minimis* (Aplt.Appx. 157), which Mr. Harder reported in his only amounting to smoking "3 or 4 bowls of pipe tobacco per week for 3 years consistently and then quit permanently" in 1978 (Aplt.Appx. 527-28). He therefore concluded that as he could not exclude Mr. Harder's occupational exposures, they were a likely cause of the lymphoma, and there was no requirement that he apportion the risk from that versus age (Aplt.Appx. 149).

Additionally, Dr. Chiodo testified that dose-response – the amount of exposure to the toxic materials at issue necessary to cause Mr. Harder's lymphoma – was not something that applied to the causation of this injury:

> Q: Do you have an opinion as to the dose response for how much exposure, what amount duration of exposure to diesel exhaust, for example, would cause or could cause follicular lymphoma?
>
> A. There is no threshold value. Within medicine, within toxicology there's a principle called the single hit theory. Toxins, carcinogenic effects do not have a threshold. Theoretically, if you smoke one cigarette, the chemicals in a cigarette could get into a cell, get into a nucleus and cause malignant transformation of a cell and cause cancer theoretically, so there is no cut-off level. Now, there is something called no observed effect level that would be non-carcinogenic effect. Doesn't mean, by the way, that there aren't adverse effects, but you just can't observe them, and that goes to the non-carcinogenic effects. Obviously, the longer the exposure, the greater the exposure, the more

> likely you are to develop the disease, like cigarette smoking. If you smoke a lot of cigarettes over a long period of time, you're more likely to develop lung cancer than if you just smoked one cigarette, but there is no threshold there. There is no level that you or any other expert in my opinion can credibly say below this level, no, that's the threshold you can't get cancer.

(Aplt.Appx. 155).

Dr. Chiodo also discounted the necessity of having reviewed general air monitoring studies:

> If you're talking about referring to studies done on some other people, that wouldn't necessarily reflect Mr. Harder's exposures. On top of it, even if you did have a personal air monitor that you put on him, somebody put, an industrial hygienist put a monitor to collect samples from his breathing zone for a period of time, it's just a snapshot of that particular day. It doesn't necessarily say what his exposures were over the course of his employment. That's just a fundamental principle of industrial hygiene, so that's what I'm saying. So if you're now saying we don't have studies for Mr. Harder, but we have studies from some other place, even if they were studies on Mr. Harder, that doesn't necessarily reflect what his overall exposures were because it's just a snapshot of that time that the monitoring was done.

(Aplt.Appx. 123).

D. Proceedings below

UP timely answered Mr. Harder's complaint and denied any liability (Aplt.Appx. 12). Some discovery issues were heard together with many other "toxic exposure cases" against UP in the District of Nebraska (Aplt.Appx. 17). (Another of these cases, *West v. Union Pac.*

R.R. Co., No. 20-1422, is pending on appeal before this Court, with the same counsel as this case and similar issues to this case.) The parties consented to a magistrate judge conducting all proceedings in the case (Aplt.Appx. 21-22).

In November 2019, UP moved the court under Fed. R. Evid. 702, 703, and 705, to exclude Dr. Chiodo, arguing that his opinions failed to meet the requirements of admissibility per *Daubert v. Merrell Dow Pharms., Inc.,* 509 U.S. 579 (1993) (Aplt.Appx. 23). It also moved to exclude Mr. Harder's other expert, Dr. Perez, for the same reason (Aplt.Appx. 57).

First, UP argued Dr. Chiodo's methodology for determining general causation – that the toxins at issue were capable of causing injuries like Mr. Harder's – was unreliable (Aplt.Appx. 41-50). It argued this was because his opinion was "conclusion-oriented" and so was not based on any accepted scientific methodology (Aplt.Appx. 42-47). It also argued this was because he did not determine or compare Mr. Harder's alleged exposures to any "known exposure" threshold (Aplt.Appx. 47-50).

Second, UP argued that Dr. Chiodo's specific causation opinion – that Mr. Harder's exposures to the toxins did cause his lymphoma – also was unreliable, because he did not perform a reliable differential etiology analysis to reach it (Aplt.Appx. 50-55). It argued this was because he did not reliably rule-in Mr. Harder's occupational exposures

as a cause of the lymphoma and made no attempt to rule-out other potential causes (Aplt.Appx. 50-55).

Along with the motions to exclude the experts, UP also moved the court for summary judgment on Mr. Harder's claims (Aplt.Appx. 78). It argued Mr. Harder could not make a *prima facie* case without a medical causation expert, and as Dr. Chiodo had to be excluded, Mr. Harder could not prove his claims (Aplt.Appx. 85-86). It also argued that Mr. Harder could not show exposure to harmful levels of any toxic substance, which was required to establish UP's liability, and so he could not prove his claims for this reason, either (Aplt.Appx. 88-92).

Mr. Harder timely opposed both of UP's motions (Aplt.Appx. 341, 624). He also asked for a *Daubert* hearing to allow Dr. Chiodo to testify as to his methodology and conclusions (Aplt.Appx. 367, 372).

As to UP's motion to exclude Dr. Chiodo, Mr. Harder argued that the FELA's standard of causation was whether the railroad's negligence played any part, no matter how small, in bringing about an injury (Aplt.Appx. 347-50, 352). He argued that this impacted the *Daubert* analysis, making it entirely proper for Dr. Chiodo to conclude there might be more than one cause of Mr. Harder's lymphoma, as long as he concluded that the exposure from the railroad was a likely cause, which he did (Aplt.Appx. 347-50, 353-58).

Mr. Harder argued that Dr. Chiodo did perform a differential etiology analysis, which was sufficient, proper, and admissible

(Aplt.Appx. 357-58). He argued that Dr. Chiodo could rely on his training and experience in concluding that the toxins more probably than not caused Mr. Harder's lymphoma, rather than definitive studies linking follicular lymphoma to those toxins (Aplt.Appx. 358-59). He argued that especially given Dr. Chiodo's testimony about the inapplicability of dose-response, the law did not require him to know the exact exposure Mr. Harder suffered (Aplt.Appx. 360-63). Finally, he argued that UP's attacks on Dr. Chiodo's lack of personal clinical experience with follicular lymphoma and disagreements with his methodology went to the weight of his testimony, not its admissibility, and was an issue for the jury (Aplt.Appx. 363-65).

As to UP's motion for summary judgment, Mr. Harder conceded that if Dr. Chiodo was excluded, he could not prove his claims (Aplt.Appx. 637). But he argued again that Dr. Chiodo's testimony was proper, admissible expert testimony on causation, especially given the FELA's relaxed standard for liability (Aplt.Appx. 637-38). He also argued that under that standard, and especially given Dr. Chiodo's testimony, evidence of the precise amount of exposure to the toxic substances at issue that he suffered was unnecessary (Aplt.Appx. 638-41). UP filed replies in support of both of its motions (Aplt.Appx. 649, 690).

The district court denied Mr. Harder's request for a *Daubert* hearing on Dr. Chiodo and then granted UP's motions to exclude Dr.

Chiodo and for summary judgment (Aplt.Appx. 699, 701; Add. A2). (It denied UP's motion to exclude Dr. Perez, the other expert, as moot (Aplt.Appx. 701; Add. A2).)

The court agreed that it "applies a relaxed standard of causation under the FELA" but held that this did not change the *Daubert* analysis (Aplt.Appx. 704; Add. A5). It held Dr. Chiodo did not need to cite published studies on general causation and his conclusion that Mr. Harder's alleged exposures can cause follicular lymphoma could be based on his knowledge, training, and experience (Aplt.Appx. 706-07; Add. A7-8). But it held that he still had to make a proper differential etiology analysis to do so (Aplt.Appx. 707; Add. A8).

The court first held Dr. Chiodo did not make a scientifically reliable differential etiology because he did not correctly "rule-in" the toxic exposures from Mr. Harder's railroad work, as he did not know "any specific details of Harder's alleged exposures" (Aplt.Appx. 707-09; Add. A8-10). It held he could not base his opinion of Mr. Harder's exposure on his telephone conversation with Mr. Harder (Aplt.Appx. 710; Add. A11). It held that "[e]ven assuming … that any level of exposure to toxins can cause cancer," Dr. Chiodo made "no attempt to discern when the level and length of toxin exposure crosses the line from of a mere possible cause to a probable or likely cause of follicular lymphoma, or that [Mr.] Harder's exposure met or exceeded that exposure level" (Aplt.Appx. 710-11; Add. A11-12).

The court also held that Dr. Chiodo's differential etiology was unreliable because he did not "rule out" age or other causes (Aplt.Appx. 712; Add. A13). It held he therefore failed "to 'rule out' alternative causes as the sole cause" of Mr. Harder's injury, which was required (Aplt.Appx. 712; Add. A13).

The court then held that because it excluded Dr. Chiodo and Mr. Harder had to present expert medical causation evidence to establish a *prima facie* case, he could not prove his claims against UP (Aplt.Appx. 712-14; Add. A13-15). It granted UP's motion for summary judgment and entered judgment for UP and against Mr. Harder (Aplt.Appx. 714-15; Add. A1, A16).

Mr. Harder then timely appealed to this Court (Aplt.Appx. 716).

Summary of the Argument

The district court abused its discretion in excluding Dr. Ernest Chiodo as Mr. Harder's expert on causation. Dr. Chiodo's testimony that Mr. Harder's exposure to carcinogenic toxins during his railroad work was a likely cause of his lymphoma satisfied *Daubert*'s standard for expert testimony as to causation of an injury under the FELA.

To satisfy *Daubert*'s standard for expert testimony as to causation of an injury under the FELA, so long as the expert presents scientifically reliable evidence that the railroad's action likely played some role, however small, in causing the plaintiff's injuries, the testimony should be admitted. And a differential etiology analysis in which the expert rules in causes, rules some out, and comes to a likely cause is a standard, valid scientific method for determining causation.

Dr. Chiodo's testimony that Mr. Harder's exposure to carcinogenic toxins during his railroad work was a cause of his lymphoma met these standards and was admissible. He performed a suitable differential etiology analysis and properly ruled in Mr. Harder's toxic exposure as a likely cause of the lymphoma. That he could not definitively rule out age or "bad luck" as possible causes did not render his conclusion that the toxic exposure was a likely cause inadmissible. And any concerns from his lack of information about the precise amount of exposure or inability to definitively rule out age or "bad luck" as possible causes go to the weight of his testimony and not its admissibility.

Argument

The district court abused its discretion in excluding Dr. Ernest Chiodo as Mr. Harder's medical causation expert and therefore granting the railroad summary judgment. Under the FELA, an expert's opinion only needs to show reliably that the railroad's action likely played a part, no matter how small, in bringing about the plaintiff's injury. Dr. Chiodo properly concluded using a differential etiology analysis, a standard scientific method, that the substantial exposure to carcinogenic toxins Mr. Harder reported from his railroad work 30 years ago was a likely cause of his lymphoma. That Dr. Chiodo did not know the precise amount of the exposure or could not definitively rule out age or "bad luck" as possible causes went to the weight of his testimony, not its admissibility.

Standard of Review

This Court "reviews de novo a grant of summary judgment." *Torgerson v. City of Rochester*, 645 F.3d 1031, 1042 (8th Cir. 2011) (en banc). It will "view the facts in the light most favorable to the nonmoving party, drawing all reasonable inferences in the nonmoving party's favor." *Watkins Inc. v. Chilkoot Distrib., Inc.*, 655 F.3d 802, 803 (8th Cir. 2011). "Credibility determinations, the weighing of the evidence, and the drawing of legitimate inferences from the facts are" functions for trial, not summary judgment. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 255 (1986).

Summary judgment is proper only when "the record taken as a whole could not lead a rational trier of fact to find for the" non-movant. *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 587

(1986). The movant must "sho[w] that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a).

In an FELA case, a railroad can obtain summary judgment on causation "only in those extremely rare instances where there is a zero probability either of employer negligence or that any such negligence contributed to the injury of an employee." *Lynch v. N.E. Regional Commuter R.R. Corp.*, 700 F.3d 906, 911 (7th Cir. 2012) (quoting *Hines v. Consolidated Rail Corp.*, 926 F.2d 262, 268 (3d Cir. 1991)).

This Court reviews a "district court's decision to exclude expert testimony for an abuse of discretion." *Johnson v. Mead Johnson & Co., LLC*, 754 F.3d 557, 561 (8th Cir. 2014). Still, "[t]he abuse-of-discretion standard does not preclude an appellate court's correction of a district court's legal … error: 'A district court would necessarily abuse its discretion if it based its ruling on an erroneous view of the law ….'" *Highmark, Inc. v. Allcare Health Mgmt. Sys., Inc.*, 572 U.S. 559, 563 n.2 (2014) (citation omitted). So, "[a] district court abuses its discretion when it makes an error of law," and those legal conclusions are reviewed de novo. *Geier v. Mo. Ethics Comm'n*, 715 F.3d 674, 678 (8th Cir. 2013). If in excluding expert testimony a district court incorrectly applies the rules governing the admission of expert testimony to reach that conclusion, it abuses its discretion. *Johnson*, 754 F.3d at 564 (reversing exclusion of expert testimony admissible under the rules).

* * *

The FELA only requires a plaintiff to show that a railroad's negligence played some part, no matter how small, in bringing about his injury. Under the *Daubert* standard, where based on his knowledge, training, and experience a qualified expert will testify that the railroad's action likely caused the plaintiff's injury, even if he cannot rule out some other possible causes, too, that testimony is admissible to prove causation of the plaintiff's claim. That other causes also may be possible, or that there may be some arguable flaws in the expert's methodology, goes to the weight of his testimony, not its admissibility.

Here, based on his knowledge, training, and experience Dr. Ernest Chiodo concluded that a likely cause of Mr. Harder's lymphoma was his exposure to various carcinogenic substances during his railroad work, about which Mr. Harder testified in detail, and that any such exposure was sufficient to be a likely cause of lymphoma. Nonetheless, the district court excluded Dr. Chiodo and, reasoning that Mr. Harder could not prove causation without an expert, granted UP summary judgment. This was an abuse of discretion.

This Court should reverse the district court's orders excluding Dr. Chiodo's testimony and granting UP summary judgment and should remand this case for further proceedings.

A. To satisfy *Daubert*'s standard for expert testimony as to causation of an injury under the FELA, the expert's opinion only needs to meet the FELA's relaxed standard of causation: that the railroad's action likely played a part, no matter how small, in bringing about the plaintiff's injury.

The district court excluded Dr. Ernest Chiodo as Mr. Harder's causation expert and thus granted UP summary judgment, reasoning that Mr. Harder therefore could not prove causation (Aplt.Appx. 707-14; Add. A8-15). It held this was because there was no evidence from which Dr. Chiodo could know that Mr. Harder was exposed to the toxins at issue and he failed to rule out other possible causes of his lymphoma, which it held rendered Dr. Chiodo's testimony inadmissible under the *Daubert* standard (Aplt.Appx. 707-13; Add. A8-14).

This was an abuse of discretion. The district court failed to correctly apply the FELA's low standard of causation, the Federal Rules of Evidence, or *Daubert*'s liberal standard for the admission of expert testimony.

Mr. Harder testified in detail to his exposures to the carcinogenic toxins at issue during his railroad work. Dr. Chiodo is a qualified expert and he testified that based on his conversations with Mr. Harder, his knowledge, training, and experience as a physician and industrial hygienist, and his review of relevant scientific literature, those exposures were a likely cause of Mr. Harder's lymphoma, even if he could not definitively rule out age or "bad luck" as other possible

causes. He testified that the amount of the exposure was not an applicable issue.

As the Supreme Court and this Court have well established, this was more than sufficient to meet the *Daubert* standard for admissible expert testimony, especially given the FELA's low standard of causation. To determine exposure, Dr. Chiodo could rely on Mr. Harder's statements of what he experienced. And he was not required to rule out all other possible causes. The district court's perceived flaws in Dr. Chiodo's analysis go to the weight of his testimony, not its admissibility. The solution for UP, if any, is competing expert testimony and cross-examination, not exclusion by the court.

The district court erred in holding otherwise. Its judgment must be reversed and the case remanded for further proceedings.

1. *Daubert* provides a liberal framework for the admission of expert testimony under the Federal Rules of Evidence.

The "[a]dmissibility of expert testimony is governed by Federal Rules of Evidence 702 and 703." *Johnson*, 754 F.3d at 561. Rule 702 provides a "screening requirement" that has "been boiled down to a three-part test:"

> First, evidence based on scientific, technical, or other specialized knowledge must be useful to the finder of fact in deciding the ultimate issue of fact. This is the basic rule of relevancy. Second, the proposed witness must be qualified to assist the finder of fact. Third, the proposed evidence must be reliable or trustworthy in an evidentiary sense, so that, if

> the finder of fact accepts it as true, it provides the assistance the finder of fact requires.

Id. (quoting *Polski v. Quigley Corp.*, 538 F.3d 836, 839 (8th Cir. 2008)). And Rule 703 requires that the expert's opinion must be based on "facts or data in the case that the expert has been made aware of or personally observed."

Since 1993, the application of these rules has been governed by the standards the Supreme Court announced in *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579 (1993). *Johnson*, 754 F.3d at 561. As this Court explained in *Johnson*, *Daubert* and Rule 702 call for the liberal admission of expert testimony:

> When the Supreme Court decided *Daubert* …, federal courts were divided over the issue of whether the test from *Frye v. United States*, 293 F. 1013 (D.C.Cir.1923) or the standards set forth in the Federal Rules of Evidence (which were not in existence when *Frye* was decided), governed the admissibility of expert testimony. The restrictive *Frye* test allowed scientific expert testimony only with regard to concepts that had "general acceptance in [a] particular field." The *Daubert* Court held that the 1972 adoption of the Federal Rules of Evidence superseded the *Frye* test, finding that the admissibility of scientific evidence no longer was limited to knowledge or evidence "generally accepted" as reliable in the relevant scientific community. 509 U.S. at 588-89. Instead, Rule 702 mandates that the district court screen the admission of novel scientific evidence, and it must conclude, pursuant to Rule 104(a), that the proposed testimony is scientific knowledge, derived from the scientific method, that will assist the trier of fact, i.e., is relevant. *Id.* at 589-93. The district court's screening "entails a

> preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue." *Id.* at 592-93. While the *Daubert* Court acknowledged that many factors would be instructive to the district court, it focused on four non-exclusive factors: (1) whether the scientific technique can be or has been tested; (2) whether the theory or technique has been subjected to peer review and/or publication; (3) the known rate of error for the technique or theory and the applicable standards for operation; and (4) whether the technique is generally accepted. *Id.* at 593-94.

754 F.3d at 561-62 (some internal citations omitted).

By adopting these guidelines, "*Daubert* and Rule 702 thus greatly liberalized what had been the strict *Frye* standards for admission of expert scientific testimony." *Johnson*, 754 F.3d at 562 (citing *Daubert*, 509 U.S. at 588, "highlighting the 'liberal thrust' of the Federal Rules and their attempt to relax the previous roadblocks to expert testimony"). In *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 147 (1999), the Supreme Court then "expressly extended its *Daubert* reasoning to all expert testimony, not simply that which was considered 'scientific.'" *Johnson*, 754 F.3d at 562.

These standards necessarily cut down a district court's discretion to exclude expert testimony, such that under *Daubert* "the rejection of expert testimony is the exception rather than the rule." *Robinson v. GEICO Gen. Ins. Co.*, 447 F.3d 1096, 1100 (8th Cir. 2006).

> [T]he liberalization of the standard for admission of expert testimony creates an intriguing juxtaposition with our oft-repeated abuse-of-discretion standard of review. While we adhere to this discretionary standard for review of the district court's Rule 702 gatekeeping decision, cases are legion that, correctly, under *Daubert*, call for the liberal admission of expert testimony. *See, e.g., United States v. Finch*, 630 F.3d 1057, 1062 (8th Cir. 2011) (holding that we resolve doubts about the usefulness of expert testimony in favor of admissibility); *Robinson*…, 447 F.3d [at] 1100 … (holding that expert testimony should be admitted if it "advances the trier of fact's understanding to any degree" (quotation omitted)); *Lauzon v. Senco Prods., Inc.*, 270 F.3d 681, 686 (8th Cir. 2001) (Rule 702 "clearly is one of admissibility rather than exclusion" (internal quotation omitted)); *Wood v. Minn. Mining & Mfg. Co.*, 112 F.3d 306, 309 (8th Cir. 1997) (holding that exclusion of expert's opinion is proper "only if it is so fundamentally unsupported that it can offer no assistance to the jury" (internal quotation omitted)).

Johnson, 754 F.3d at 562 (internal citations adjusted for format).

At the same time, under *Daubert* "district courts are admonished not to weigh or assess the correctness of competing expert opinions." *Id.* Instead, "[a]s long as the expert's scientific testimony rests upon 'good grounds, based on what is known' it should be tested by the adversary process with competing expert testimony and cross-examination, rather than excluded by the court at the outset." *Id.* (quoting *Daubert*, 509 U.S. at 590, 596).

When a district court "violate[s] these liberal admission standards by resolving doubts in favor of keeping the testimony out and relying

upon its own assessment of the correctness of the expert opinions," it abuses its discretion because it "disallow[s] the adversarial process to work." *Id*. Accordingly, this Court many times has reversed the exclusion of expert testimony that in reality met the liberal Rule 702/*Daubert* framework. *See, e.g.*:

- *Johnson*, 754 F.3d at 562-63 (in products liability action alleging injury from bacterial infection from infant formula, reversing exclusion of plaintiff's causation expert because his basic testimony satisfied *Daubert* and any supposed flaws in his differential etiology analysis went to the weight of his testimony, not its admissibility);
- *Kuhn v. Wyeth, Inc.*, 686 F.3d 618, 626-33 (8th Cir. 2012) (in products liability action against drug manufacturer, reversing exclusion of plaintiff's causation expert because an expert can disagree with existing studies and can rely on contrary studies; the expert presented reliable evidence to support his opinion, and it was not the court's province to choose between competing theories when both were supported by reliable scientific evidence);
- *Sappington v. Skyjack, Inc.*, 512 F.3d 440, 449, 454 (8th Cir. 2008) (in products liability action against manufacturer alleging injury when lift tipped over, reversing exclusion of plaintiff's causation expert because his testing of a similar model of lift from the same manufacturer was relevant and his report was reliable);

- *Hickerson v. Pride Mobility Prods. Corp.*, 470 F.3d 1252, 1256-57 (8th Cir. 2006) (in products liability action against manufacturer alleging injury when scooter caused fire, reversing exclusion of plaintiff's causation expert because the expert was qualified to testify about the origin of the fire and its cause and based his opinion on reliable and sound methodology);
- *First Union Nat. Bank v. Benham*, 423 F.3d 855, 861-63 (8th Cir. 2005) (in legal malpractice case, plaintiff's causation expert was excluded on the grounds that his testimony was based on his own experience and not the experiences of other lawyers; exclusion reversed, because *Daubert* standard allows a witness to qualify as an expert based on his own knowledge, skill, experience, training, or education, and attorney's testimony based on his own practice and a review of the evidence in the case was not so fundamentally unsupported that it could offer no assistance to the jury);
- *Smith v. BMW N. Am., Inc.*, 308 F.3d 913, 920 (8th Cir. 2002) (in products liability action against automobile manufacturer alleging injury from faulty airbag, reversing exclusion of pathologist as causation expert; although the pathologist was unable to quantify exactly how much of the motorist's assumed forward neck flexion occurred before a properly functioning airbag would have deployed, or how much of her forward neck flexion would have been reduced by an airbag, he based his opinion on his knowledge

of basic operation of air bags and how injuries of the type sustained by motorist occurred or could be prevented, and that was all *Daubert* required);

- *Lauzon*, 270 F.3d at 688-90 (in products liability action against manufacturer of pneumatic nailer alleging injury from double-firing, reversing exclusion of plaintiff's causation expert; though the expert was unable to duplicate the accident exactly, he tested the device used in the accident and reliably was able to conclude that a design defect caused the double-firing);
- *Jenson v. Eleventh Taconite Co.*, 130 F.3d 1287, 1297-98 (8th Cir. 1997) (in Title VII action against former employer, reversing exclusion of plaintiffs' psychiatric and psychological experts; the opinions were thorough and meticulously presented, the methodology for arriving at them was laid out clearly by each witness, and the testimony was relevant to the damages the plaintiffs sustained from the claimed emotional injuries).

Therefore, given *Daubert*'s liberal standard for admissibility, "[i]t is far better where, in the mind of the district court, there exists a close case on relevancy of the expert testimony in light of the plaintiff's testimony to allow the expert opinion and if the court remains unconvinced, allow the jury to pass on the evidence." *Lauzon*, 270 F.3d at 695.

2. The FELA's low causation standard impacts the *Daubert* analysis: so long as the expert presents scientifically reliable evidence that the railroad's action likely played some role, however small, in causing the plaintiff's injuries, the testimony should be admitted.

This is an action under the FELA, in which the Rule 702/*Daubert* standards apply to expert testimony about causation just as they do in any other case where expert testimony is necessary. *See Hose v. Chicago N.W. Transp. Co.*, 70 F.3d 968, 973-75 (8th Cir. 1995) (affirming admission of physician causation expert in an FELA case alleging injury from manganese exposure, analyzed under *Daubert* standard). And expert testimony is just as necessary to prove a causal connection between an action and an injury in an FELA case as it is in ordinary injury case: it is required "unless the connection is a kind that would be obvious to laymen, such as a broken leg from being struck by an automobile." *Moody v. Maine Cent. R.R. Co.*, 823 F.2d 693, 695-96 (1st Cir. 1987).

At the same time, the remedial nature of the FELA also has a significant effect on the admissibility of expert testimony, because the FELA's standard of causation is relaxed and low. While this Court has never been faced with this question before, other circuits have, as have district courts in this circuit. They hold that so long as the expert presents scientifically reliable evidence that the railroad's action likely

played some role, however small, in causing the plaintiff's injuries, the testimony should be admitted.

Enacted in 1908, the FELA provides railroad employees with a special federal cause of action for injuries "resulting in whole or in part from the negligence" of a railroad "or by reason of any defect or insufficiency, due to its negligence …." 45 U.S.C. § 51. Congress's purpose in enacting it was humanitarian. *Metro-N. Commuter R.R. Co. v. Buckley*, 521 U.S. 424, 438 (1997). It "uses broad language that, in turn, has been construed even more broadly by th[e Supreme] Court, consistent with its … legislative intent." *Monessen S.W. Ry. Co. v. Morgan*, 486 U.S. 330, 343 (1988).

The broad language of "[t]his statute, an avowed departure from the rules of the common law, was a response to the special needs of railroad workers who are daily exposed to the risks inherent in railroad work and are helpless to provide adequately for their own safety." *Sinkler v. Mo. Pac. R.R. Co.*, 356 U.S. 326, 329 (1958). The "FELA represented a radical change from the common law in an attempt to assure workers a more sure recovery by abolishing many traditional defenses." *Poleto v. Conrail*, 826 Fd.2d 1270, 1278 (3d Cir. 1987). (This was necessary because there is no workers' compensation for railroad workers engaged in interstate commerce.)

Sixty years ago, the Supreme Court held that given the FELA's broad language and humanitarian purpose, a jury may find a railroad

liable so long as the evidence justifies the conclusion that the railroad's negligence "played any part, even the slightest, in producing the injury." *Rogers v. Mo. Pac. R.R. Co.*, 352 U.S. 500, 506 (1957). This is because "the FELA is a broad remedial statute and" the Supreme Court "adopted a standard of liberal construction in order to accomplish [Congress'] objectives" in it. *Atchison, Topeka & Santa Fe Ry. Co. v. Buell*, 480 U.S. 557, 562 (1987). As well, "the FELA does not authorize apportionment of damages between railroad and nonrailroad causes." *Norfolk & W. Ry. v. Ayers*, 538 U.S. 135, 159-60 (2003).

Then, in 2011, after some courts had cut down on this, the Supreme Court clarified and reapplied this relaxed standard of causation. *See CSX Transp., Inc. v. McBride*, 564 U.S. 685 (2011). In *McBride*, the railroad argued that the FELA's correct causation standard should be ordinary proximate cause as in common-law negligence cases. *Id.* at 688. The Supreme Court rejected this attempt to increase the plaintiff's burden of proof on causation. *Id.*

The FELA "does not incorporate 'proximate cause' standards developed in nonstatutory common-law actions." *Id.* Instead, "[t]he charge proper in FELA cases, we hold, simply tracks the language Congress employed, informing juries that **a defendant railroad caused or contributed to a plaintiff's employee's injury if the railroad's negligence played *any part* in bringing about the injury**." *Id.* (emphasis added). "Juries in such cases are properly

instructed that a defendant railroad 'caused or contributed to' a railroad worker's injury 'if [the railroad's] negligence played a part – **no matter how small** – in bringing about the injury." *Id.* at 705 (emphasis added; quotation marks and alteration in the original).

This means "[t]he standard of causation in an FELA action is a 'low and liberal' one that works in favor of submission of issues to the jury … rather than toward foreclosure through a directed verdict or judgment N.O.V." *Smith v. Nat. R.R. Passenger Corp.*, 856 F.2d 467, 469 (2d Cir. 1988). "[I]t is clear that the congressional intent in enacting the FELA was to secure jury determinations in a larger percentage of cases than would be true of ordinary common law actions. In other words, 'trial by jury is part of the remedy.'" *Boeing Co. v. Shipman*, 411 F.2d 365, 371 (5th Cir. 1969) (citations omitted); *see also Bailey v. Cent. Vt. R.R.*, 319 U.S. 350, 354 (1943) ("To deprive [railroad] workers of the benefit of a jury trial in close or doubtful cases is to take away a goodly portion of the relief which Congress has afforded them" in the FELA).

Given this relaxed burden to prove merely that the railroad's action played a part, no matter how small, in bringing about the plaintiff's injury, this necessarily impacts the standards for admitting expert testimony under Rule 702 and *Daubert*. This is because, under the FELA, the expert need only reliably testify that the railroad's action

likely played some role, however small, in causing the plaintiff's injuries. The effect of that testimony, then, is for the jury.

A leading decision on this is *Hines*, 926 F.2d at 262. In *Hines*, a toxic-exposure FELA case, the Third Circuit reversed a summary judgment predicated, as here, on the exclusion of the plaintiff's expert witness on causation. *Id.* at 276. The expert, Dr. Shubin, attributed the plaintiff's cancer to PCB exposure while working for the railroad and based his opinions on a medical exam of the plaintiff, his personal and family histories, various medical tests, laboratory reports, other treating physicians' reports, and the plaintiff's hospital records and occupational history. *Id.* at 266-67. Dr. Shubin also reviewed scientific articles on PCBs. *Id.*

The Third Circuit held that the relaxed FELA standard of causation also necessary relaxes the threshold of admissibility for the reception of expert testimony. *Id.* at 268-69. Under the FELA,

> a medical expert can testify that there was more than one potential cause of a plaintiff's condition. In *Sentilles v. Inter-Caribbean Shipping Corp.*, 361 U.S. 107 (1959), for example, a seaman brought suit under the Jones Act (which specifically incorporates FELA) seeking damages for a tubercular illness that he claimed was caused by an accident that activated or aggravated a latent tubercular condition. None of the three medical witnesses testified that the accident in fact caused the illness. The first witness testified that the tuberculosis might be a consequence of the accident. The second witness stated that the accident and the plaintiff's pre-existing diabetic condition most likely

> aggravated the tuberculosis, although he could not determine which of the two was more responsible. The third witness, who had not personally examined the plaintiff, suggested that the accident "probably aggravated" the plaintiff's condition, although he would not say definitely. *Id.* at 109.
>
> Despite this lack of medical unanimity over the particular cause of the illness, the Court concluded that the differences in testimony did not impair the jury's ability to draw causal inferences. Furthermore, the Court recognized the general reluctance among experts to state that a trauma was the cause of a disease. *Id.* at 109 & n. 2. As the Court explained, "[t]he matter does not turn on the use of a particular form of words by the physicians in giving their testimony," since it is the task of the jury and not the medical witnesses to make a legal determination regarding causation. *Id.* at 109.

Hines, 926 F.2d at 268-69 (some internal citations omitted).

Accordingly, the Third Circuit agreed with the plaintiff "**that the standard under FELA can significantly influence a determination of the admissibility of [an expert's] testimony**." *Id.* (emphasis added). The Third Circuit then went on and held that under the FELA, Dr. Shubin's testimony was admissible, because he concluded that the PCB exposure was ***a*** likely cause of the plaintiff's cancer, he was qualified to conclude this, and his methodology – principally relying on other studies – was ordinary and reliable. *Id.* at 275-76.

While *Hines* was decided before *Daubert*, courts – including in this circuit – have synthesized the two by holding that to satisfy *Daubert* in an FELA action:

> **as long as the plaintiff's causation expert presents scientifically reliable evidence that the toxic exposure [he received during his railroad work] could have played some role, however small, in causing [his] injuries, the testimony should be admitted.** On the other hand, *Daubert*'s standard of admissibility "extends to each step in an expert's analysis all the way through the step that connects the work of the expert to the particular case." Thus, if the expert's conclusion – or any inferential link that undergirds it – fails under Daubert to provide any evidence of causation, it must be excluded, even under *Hines*' liberal approach to admissibility.

Savage v. Union Pac. R.R. Co., 67 F. Supp. 2d 1021, 1028 (E.D. Ark. 1999) (citation omitted; emphasis added). *See also*:

- *Claar v. Burlington N. R.R. Co.*, 29 F.3d 499, 503 (9th Cir. 1994) ("in FELA cases the negligence of the defendant need not be the sole cause or whole cause of the plaintiff's injuries," so under *Daubert* expert testimony on causation is admissible in an FELA case as long as it "demonstrate[s] some causal connection between a defendant's negligence and their injuries");
- *Davis v. ODECO*, 18 F.3d 1237, 1241 (2d Cir. 1994) (under Jones Act, which incorporates the FELA's "featherweight" standard of proof, in case alleging injury from hydrocarbon exposure, expert's testimony that "it is more probable than not that [his]

> hydrocarbon exposure played a contributory causal role" in the injury and relied on studies discussing the relationship between hydrocarbon exposure and a similar injury, while "underwhelming," was "sufficient to support the jury's verdict" for the plaintiff).

3. An expert may come to a conclusion on causation by performing a differential etiology analysis, and to satisfy *Daubert* and be admissible to establish causation in an FELA case it does not have to rule out all other possible causes.

One well-accepted methodology for determining causation, especially in toxic-exposure cases, and especially in FELA cases, is a differential etiology analysis.[1] In it,

> the experts "rule in" the reasonably plausible causes of injury and then "rule out" or eliminate them from least to more plausible until a most plausible cause emerges. We have previously ruled that this form of expert testimony is acceptable causation testimony under *Daubert*, and in fact

[1] There is some confusion as to use of this term. In *Johnson*, the Court noted that confusion and explained its correct usage: "A differential diagnosis determines all of the possible causes for the patient's symptoms and then eliminates each of these potential causes until reaching one that cannot be ruled out, or deduces which of those that cannot be excluded is the most likely. On the other hand, 'differential etiology' is a term used to describe the similar process by which the cause of an injury is determined. Courts often use the term differential diagnosis to refer to both concepts, but in the instant case, we are actually referring to etiology …." 754 F.3d at 560 n.2 (internal citations omitted). Here, too, the process is etiology, not diagnosis. So, this brief refers to this process correctly as a "differential etiology analysis."

> have termed it "presumptively admissible," noting that a district court may not exclude such expert testimony unless the diagnoses are "scientifically invalid." *Glastetter v. Novartis Pharm. Corp.*, 252 F.3d 986, 989 (8th Cir. 2001) (per curiam) (citing *Turner v. Iowa Fire Equip. Co.*, 229 F.3d 1202, 1208 (8th Cir. 2000)).

Johnson, 754 F.3d at 560 n.2. Indeed, this Court has approved of expert testimony of causation using this method numerous times. *See, e.g.*, *id.*; *Tedder v. Am. Railcar Indus., Inc.*, 739 F.3d 1104, 1109 (8th Cir. 2014); *In re Prempro Prod. Liab. Litig.*, 586 F.3d 547, 565 (8th Cir. 2009); *Kudabeck v. Kroger Co.*, 338 F.3d 856, 859 (8th Cir. 2003).

But "experts are not required to rule out all possible causes when performing the differential etiology analysis." *Johnson*, 754 F.3d at 563. So, in *Johnson*, that the expert could not rule out some other possible causes did not render his testimony inadmissible, and instead only went to its weight. *Id.* (reversing exclusion of expert). In *Lauzon,* expert testimony was admissible when it identified the manufacturer's device defect as a cause of the plaintiff's injury, even though the expert could not duplicate the exact events of the plaintiff's accident. 270 F.3d at 693 (reversing exclusion of expert). And in *Prempro*, expert testimony was admissible that a hormone replacement drug was a likely cause of the plaintiffs' breast cancer, even though the cause of breast cancer is generally unknown and the expert concluded the plaintiffs had other known risk factors, too. 586 F.3d at 565.

At the same time, "a differential expert opinion can be reliable even 'with less than full information.'" *Johnson*, 754 F.3d at 563 (quoting *In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 759 (3d Cir. 1994)); *see also Smith*, 308 F.3d at 920 (expert's testimony was admissible even without full knowledge of force necessary to cause injury at issue; reversing exclusion of expert). That consideration, too, "go[es] to the weight to be given the testimony by the factfinder, not its admissibility." *Id.* And this is particularly true in an FELA case, where the railroad's action needs only to be ***a*** cause of the injury, no matter how small. *Paoli*, 35 F.3d at 759.

Nor must the expert's conclusion rest on definitive studies linking the plaintiff's exact injury with the exact cause alleged in order to satisfy *Daubert*'s liberal standard. *Lauzon*, 270 F.3d at 693. To the contrary,

> [W]e do not believe that a medical expert must always cite published studies on general causation in order to reliably conclude that a particular object caused a particular illness. [A] reliable differential diagnosis alone provides valid foundation for causation opinion, even when no epidemiological studies, peer-reviewed published studies, animal studies, or laboratory data are offered in support of the opinion.

Turner, 229 F.3d at 1208-09 (internal citation omitted; parenthetical made into sentence).

Finally, in a toxic exposure case, it is often unnecessary to determine the amount of a toxin to which a plaintiff was exposed, especially (as Dr. Chiodo testified here (Aplt.Appx. 155) if there is no safe amount:

> while precise information concerning the exposure necessary to cause specific harm to humans and exact details pertaining to the plaintiff's exposure are beneficial, such evidence is not always available, or necessary, to demonstrate that a substance is toxic to humans given substantial exposure and need not invariably provide the basis for an expert's opinion on causation.

Westberry v. Gislaved Gummi AB, 178 F.3d 257, 264 (4th Cir. 1999).

This is because:

> [o]nly rarely are humans exposed to chemicals in a manner that permits a quantitative determination of adverse outcomes …. Human exposure occurs most frequently in occupational settings where workers are exposed to industrial chemicals like lead or asbestos; however, even under these circumstances, it is usually difficult, if not impossible, to quantify the amount of exposure.

Id. (quoting Federal Judicial Center, *Reference Manual on Scientific Evidence* 187 (1994)). In *Westberry*, the Fourth Circuit held that an expert could testify that talc exposure caused the plaintiff's sinus condition, even though the expert did not know the specific level of airborne talc to which the plaintiff had been exposed, where the plaintiff's own testimony established "a substantial exposure." *Id.*

So, "even absent hard evidence of the level of exposure to the chemical in question, a medical expert could offer an opinion that the chemical caused plaintiff's illness." *Heller v. Shaw Indus., Inc.*, 167 F.3d 146, 154-55 (3d Cir. 1999); *cf. Clausen v. M/V NEW CARISSA*, 339 F.3d 1049, 1059 (9th Cir. 2003) (expert's inability to know the precise amount of oil ingested by farmed oysters from an oil spill was not fatal to his ability to testify that the oil was the cause of their death and loss); *Hardyman v. Norfolk & W. Ry. Co.*, 243 F.3d 255, 265 (6th Cir. 2001) (same in an FELA case re: expert testimony that plaintiff's repetitious activity caused his carpal tunnel syndrome when the expert could not quantify that amount; reversing exclusion of expert).

B. Dr. Chiodo's testimony that Mr. Harder's exposure to carcinogenic toxins during his railroad work was a likely cause of his lymphoma satisfied *Daubert*'s standard for expert testimony as to causation of an injury under the FELA and was admissible.

Under these standards, Dr. Chiodo's testimony that Mr. Harder's toxic exposure during his railroad work was a likely cause of his lymphoma was admissible expert testimony. He was qualified and his conclusion was trustworthy enough to assist the jury. His testimony was not "so fundamentally unsupported that it can offer no assistance to the jury." *Wood*, 112 F.3d at 309.

That Dr. Chiodo did not know the precise amount of exposure Mr. Harder experienced or could not definitively rule out age or "bad luck"

as other possible causes does not change this. Especially given Dr. Chiodo's testimony about carcinogens, and especially under the FELA, those issues go only to the weight of his testimony, not its admissibility.

Just as the district court in *Johnson* did, in concluding otherwise in this case the district court "violated [*Daubert*'s] liberal admission standards by resolving doubts in favor of keeping [Dr. Chiodo's] testimony out and relying on its own assessment of the correctness of [his] expert opinions" and "by doing so … disallowed the adversarial process to work." 754 F.3d at 562. Just as in *Johnson* and the other decisions cited above at pp. 27-29, its decision to exclude Dr. Chiodo was an abuse of discretion and must be reversed.

1. Dr. Chiodo performed a standard differential etiology analysis.

As in *Johnson*, of the three Rule 702 factors, "the first two – that the subject is one needing expert testimony and that the exper[t] in question [is] qualified – are not seriously in dispute." 754 F.3d at 562-63. Mr. Harder concedes that whether his exposure to carcinogenic toxins during his railroad work was a cause of his lymphoma requires expert testimony to prove. And Dr. Chiodo's many advanced degrees, licensures, board certifications, and professorships in medicine, law, and industrial hygiene easily qualify him as an expert (Aplt.Appx. 417-18, 420-22). The district court found he "is a well-qualified, highly credentialed expert in the medical fields of internal and occupational

medicine" and "is certified in the engineering and public health discipline of industrial hygiene" (Aplt.Appx. 705; Add. A6).

Instead, as in *Johnson*, the only Rule 702 factor in dispute here is whether Dr. Chiodo's testimony "is trustworthy enough to assist the trier of fact …." 754 F.3d at 563. And also, as there, "The key inquiry is whether the methodology of [Dr. Chiodo] … was reliable enough to assist the trier of fact." *Id.* As in *Johnson*, Dr. Chiodo's methodology was a differential etiology analysis, in which he ruled in likely causes of Mr. Harder's lymphoma and ruled out others (Aplt.Appx. 147-48).

2. Dr. Chiodo properly ruled in Mr. Harder's toxic exposure during his railroad work as a likely cause of his lymphoma.

First, among the likely causes Dr. Chiodo ruled in were Mr. Harder's "exposure to work as a machinist, including exposure to diesel exhaust, solvents, welding fumes and benzenes," his age (Mr. Harder was born in 1953), and "bad luck" (Aplt.Appx. 147-50). To rule in his exposure during his work, Dr. Chiodo began with his knowledge, training, and experience as a physician and industrial hygienist to form his hypothesis, and then reviewed a number of studies that corroborated that hypothesis that exposure to diesel exhaust, solvents, and welding fumes can cause lymphoma, this was a significant danger in railroad work, and that exposure to diesel exhaust caused exposure to benzene (Aplt.Appx. 109-10, 410-15).

The district court held that this was not scientifically reliable because Dr. Chiodo did not correctly "rule-in" the toxic exposures from Mr. Harder's railroad work, as he did not know "any specific details of Harder's alleged exposures" (Aplt.Appx. 707-09; Add. A8-10). Citing no authority, the court held he could not base his opinion that Mr. Harder suffered severe exposure to these on his interview of Mr. Harder (Aplt.Appx. 710; Add. A11).

This was error. It is well-established that where a plaintiff testifies that he suffered a "substantial exposure" to a toxin, an expert can rely on that in determining that this was so. *See, e.g.*, *Westberry*, 178 F.3d at 264 (plaintiff's testimony about substantial airborne talc exposure was sufficient predicate for expert's conclusion that talc was a likely cause of his injury); *Clausen*, 339 F.3d at 1059 (same re: description of oil spill); *Hardyman*, 243 F.3d at 265 (same re: description of repetitive work for carpal tunnel syndrome).

Mr. Harder's recounting of his extreme exposure to diesel exhaust, solvents, welding fumes, and benzenes during his work as a railroad machinist inside UP's predecessor's "diesel shop" in Wisconsin 30 years ago, which drawing inferences in his favor is what he described to Dr. Chiodo (as Dr. Chiodo's report suggests (Aplt.Appx. 410; Add. A20)), is more than sufficient to show he was substantially exposed.

In great detail, Mr. Harder described daily exposure indoors – with a lack of masks and respirators and with gloves that did not hold

up – to welding fumes in a confined area, inhaling and being doused in mineral spirits, water treatment additives, diesel fuel, motor oil, and rock mineral dust, and daily facing both motor oil smoke in his face and diesel exhaust indoors so thick that it looked like "London fog" and left him unable to breathe (Aplt.Appx. 253, 255-58, 262, 264-69, 274-77). Everyone knows not to run their automobile inside a closed garage. Mr. Harder described two diesel locomotives running indoors for hours on end with no ventilation. He described his exposure to diesel fuel as "high," the level of exhaust as "atrocious" and "immense," and the motor oil smoke as "nasty" (Aplt.Appx. 262-64, 269).

As in *Westberry*, *Clausen*, and *Hardyman*, this was more than a sufficient recounting of substantial exposure on which Dr. Chiodo could predicate his conclusions that it was a likely cause of Mr. Harder's lymphoma. Moreover, that this happened upwards of more than 30 years ago meant precise information concerning Mr. Harder's exact levels of exposure likely were not available. *Westberry*, 178 F.3d at 264. And this is especially true considering that Dr. Chiodo testified there was no safe amount of these toxins that would not be likely to cause cancer (Aplt.Appx. 155) – as the district court put it, "that any level of exposure to toxins can cause cancer" (Aplt.Appx. 710-11; Add. A11-12).

3. That Dr. Chiodo could not definitively rule out Mr. Harder's age or "bad luck" as possible causes of his lymphoma did not render his conclusion inadmissible that the toxic exposure was a likely cause.

Dr. Chiodo testified that he could not definitively exclude Mr. Harder's age or "bad luck" as causes of his lymphoma (Aplt.Appx. 147). Dr. Chiodo essentially ruled-out Mr. Harder's smoking history as *de minimis* (Aplt.Appx. 157), which Mr. Harder reported in his only amounting to smoking "3 or 4 bowls of pipe tobacco per week for 3 years consistently and then quit permanently" in 1978 (Aplt.Appx. 527-28). But he testified he concluded that as he could not rule out Mr. Harder's occupational toxic exposures, they remained a likely cause of the lymphoma and there was no requirement that he apportion the risk from that versus age (Aplt.Appx. 149).

The district court held that this conclusion was not scientifically reliable because Dr. Chiodo could not "rule out" age or other causes (Aplt.Appx. 712; Add. A13). It held he therefore failed "to 'rule out' alternative causes as the sole cause" of Mr. Harder's injury, which was required (Aplt.Appx. 712; Add. A13). For this, the court cited two FELA decisions: a Seventh Circuit decision and a 22-year-old Pennsylvania district court decision (Aplt.Appx. 712; Add. A13) (citing *Brown v. Burlington N. Santa Fe Ry. Co.*, 765 F.3d 765, 773 (7th Cir. 2014); *In re Conrail Toxic Tort FELA Litig.*, No. CIV. A 94-11J, 1998 WL 465897 at *6 (W.D. Pa. Aug. 4, 1998)).

This was error. First, the decisions the district court cited *do not* hold that an inability to rule out other possible universal causes of cancer, such as age and bad luck, renders a differential etiology unscientific, especially under the FELA:

- In *Brown*, the problem was that the expert failed to "consider or investigate" numerous other specific possible causes for the plaintiff's joint issues at all, including "his motorcycle riding, volunteer firefighting, obesity, smoking, and family history of cumulative trauma disorders." 765 F.3d at 770. Here, Dr. Chiodo considered age, a brief period of smoking, and "bad luck," but concluded that the substantial toxic exposure during Mr. Harder's railroad work remained a likely cause of his lymphoma.
- In *Conrail*, the problem was not the failure to rule out other potential causes, but rather that the expert had not "relied on *any* scientific methods, data or literature to support his conclusion that chemical exposure caused decedent's cardiac problems." 1998 WL 465897 at *8 (emphasis in the original). Indeed, the court in *Conrail* held that under the FELA's relaxed featherweight causation standard – "whether there is evidence that the employer's negligence [i.e., the plaintiff's exposure to hazardous substances] played any role in bringing about the injury," as long as "a qualified expert at least considers the effect of other potential causes but concludes, through application of the

scientific method, that there is *some probability* that the toxic exposure caused the plaintiff's injuries, the expert's testimony must be admitted." *Id.* at *6 (emphasis added).

More importantly, as discussed above at p. 38, this Court definitively has held that "experts are not required to rule out all possible causes when performing the differential etiology analysis." *Johnson*, 754 F.3d at 563. This is especially true with cancer, of which no one knows the definitive cause, so having other risk factors that cannot be definitively ruled out does not render an opinion about a likely cause unscientific. *Prempro*, 586 F.3d at 565.

The same is true with Dr. Chiodo's opinion. While he could not definitively rule out age and simple bad luck as possible causes of Mr. Harder's lymphoma, he testified based on scientific knowledge and research that Mr. Harder's substantial exposure to diesel exhaust, solvents, welding fumes, and benzenes remained a likely cause (Aplt.Appx. 149). As in *Johnson* and *Prempro*, this was proper and did not render his testimony inadmissible.

4. Any concerns from Dr. Chiodo's lack of information about Mr. Harder's precise amount of exposure or inability to definitively rule out age or "bad luck" as possible causes of Mr. Harder's lymphoma go to the weight of his testimony and not its admissibility.

Dr. Chiodo's testimony satisfied the Rule 702/*Daubert* standards and met Mr. Harder's burden of proof under the FELA. He engaged in

a proper differential etiology analysis, which is a well-accepted, valid, and admissible scientific method. *Johnson*, 754 F.3d at 560 n.2. His testimony was that the toxic exposure likely played some part in producing Mr. Harder's injury – that it "played a part – no matter how small – in bringing about the injury." *McBride*, 564 U.S. at 705. And Mr. Harder is under no requirement to "apportion[n his] damages between railroad and nonrailroad causes." *Ayers*, 538 U.S. at 159-60.

Instead, as this Court noted in *Johnson*, the district court's few concerns here went to the weight of Dr. Chiodo's testimony, not its admissibility. 754 F.3d at 563-64. An expert's "less than full information" about the plaintiff's experiences and inability "to rule out all possible causes when performing the differential etiology analysis" are "considerations" that "go to the weight to be given the testimony by the factfinder, not its admissibility." *Id.*; *see also Prempro*, 586 F.3d at 547 (expert's "explanations as to conclusions not ruled out went to weight and not admissibility") (quoting *Lauzon*, 270 F.3d at 694).

The remedy for UP is the adversary process, not exclusion by the court at the outset. *Daubert*, 509 U.S. at 590, 596. It may test Dr. Chiodo's conclusions with "competing expert testimony and cross-examination." *Id.* "The methodology employed by [Dr. Chiodo] was scientifically valid, could properly be applied to the facts of this case, and, therefore, was reliable enough to assist the trier of fact." *Johnson*, 754 F.3d at 564. And with Dr. Chiodo's testimony, Mr. Harder "has

created an issue of fact for a jury on the issue of the specific cause of" his lymphoma. *Id.*

"Accordingly, [Mr. Harder] is entitled to attempt to prove his" FELA claim, and summary judgment for UP was error. *Id.* This is not that "extremely rare instanc[e] where there is a zero probability either of employer negligence or that any such negligence contributed to the injury of an employee." *Lynch*, 700 F.3d at 911 (citation omitted).

This Court should reverse the district court's orders excluding Dr. Chiodo's testimony and granting summary judgment to UP and should remand this case for further proceedings.

Conclusion

This Court should reverse the district court's orders excluding Dr. Chiodo's testimony and granting summary judgment to UP and should remand this case for further proceedings.

Respectfully submitted,

Jonathan Sternberg, Attorney, P.C.

by /s/Jonathan Sternberg

Jonathan Sternberg, Mo. #59533
2323 Grand Boulevard #1100
Kansas City, Missouri 64108
Telephone: (816) 292-7020
Facsimile: (816) 292-7050
jonathan@sternberg-law.com

BERN CAPPELLI, LLP

BY: /s/Shawn M. Sassaman

Shawn M. Sassaman
101 West Elm Street, Suite 215
Conshohocken, Pennsylvania 19428
(610) 941-4444
(610) 941-9880 fax
ssassaman@bernllp.com

COUNSEL FOR APPELLANT
THOMAS HARDER

Certificate of Compliance with Type-Volume Limitation, Typeface Requirements, and Typestyle Requirements

I certify that this brief complies with the type-volume limitation of Fed. R. App. P. 32(a)(7)(B), because this brief contains 11,890 words excluding the parts of the brief exempted by Rule 32(f).

I further certify that this brief complies with the typeface requirements of Rule 32(a)(5) and typestyle requirements of Rule 32(a)(6), because this brief has been prepared in a proportionally spaced typeface, Century Schoolbook size-14 font, using Microsoft Word for Office 365.

I further certify that the electronic copies of both this brief and its addendum filed via the Court's ECF system are exact, searchable PDF copies of the originals, that they were scanned for viruses using Microsoft Windows Defender, and that according to that program they are free of viruses.

/s/Jonathan Sternberg
Attorney

Certificate of Service

I certify that on May 29, 2020, I electronically submitted the foregoing to the Clerk of the Court for the United States Court of Appeals for the Eighth Circuit for review by using the CM/ECF system.

/s/Jonathan Sternberg
Attorney