UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TENNESSEE
AT CHATTANOOGA

STEPHEN EIMERS, *Plaintiff*, v. LINDSAY CORPORATION, *et al.*, *Defendants*.	)	Case No. 1:19-cv-44 Judge Travis R. McDonough Magistrate Judge Christopher H. Steger

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MEMORANDUM OPINION

The dispositive motions pending before the Court are: (1) Plaintiff Stephen Eimers's motions for partial summary judgment (Docs. 150, 151, 153); (2) Defendant Reynolds Fence & Guardrail, Inc.'s ("Reynolds") motion for summary judgment (Doc. 158); (3) Defendant Lindsay Corporation's motion for summary judgment (Doc. 219); and (4) Defendants Lindsay Corporation and Lindsay Transportation Solutions, LLC ("LTS") f/k/a (i) Lindsay Transportation Solutions Sales & Service, LLC ("LTSSS") and (ii) Lindsay Transportation Solutions, Inc. f/k/a Barrier Systems, Inc.'s ("BSI"), (collectively, "Lindsay"), motion for summary judgment (Doc. 221). The *Daubert* motions pending before the Court are Plaintiff's motion to exclude testimony of Dr. Kim Collins (Doc. 145) and Lindsay Defendants' motions to exclude the expert opinions of Dr. Kevin Schrum (Doc. 201), Dr. Dean Sicking (Doc. 203), Dr. Sri Kumar (Doc. 205), Michael McCort (Doc. 208), and Dr. Marthinus van Schoor (Doc. 210).

For the following reasons, the Court will **GRANT IN PART** and **DENY IN PART** the motions to exclude the testimony of Dr. Kim Collins (Doc. 145) and Dr. Kevin Schrum (Doc. 201) and will **DENY** the motions to exclude the expert opinions of Dr. Dean Sicking (Doc. 203),

Dr. Sri Kumar (Doc. 205), Michael McCort (Doc. 208), and Dr. Marthinus van Schoor (Doc. 210). Plaintiff's motions for partial summary judgment as to Lindsay's affirmative defenses (Docs. 150, 153) are **GRANTED**. Plaintiff's motion for partial summary judgment to establish Lindsay's strict liability (Doc. 151) is **DENIED**. Reynolds's motion for summary judgment (Doc. 158) is **DENIED AS MOOT**. Lindsay Corporation's motion for summary judgment (Doc. 219) is **DENIED**. Lindsay's motion for summary judgment (Doc. 221) is **GRANTED IN PART** and **DENIED IN PART.**

I. BACKGROUND

This case is a wrongful-death products-liability action arising from a car crash on Interstate 75 on November 1, 2016. Hannah Eimers was driving a 2000 Volvo S80 north on Interstate 75 near mile marker 55.90 in McMinn County, Tennessee. (Doc. 223-1, at 146.) The Volvo left the roadway, began a clockwise yaw, and collided with the guardrail end terminal at mile marker 56 ("subject guardrail"). (*Id.*) As a result of the collision, part of the subject guardrail penetrated the driver-side door, entered the occupant compartment, and severely injured Hannah Eimers, ultimately resulting in her death. (*Id*. at 147; Doc. 127, at 13.) Hannah Eimers's father, Plaintiff Stephen Eimers, now brings claims under the Tennessee Product Liability Act ("TPLA") against Lindsay, asserting that the subject guardrail was defectively designed.

Plaintiff alleges the subject guardrail is an X-LITE guardrail end terminal manufactured and sold by Lindsay, but Lindsay asserts that it did not manufacture the subject guardrail. (Doc. 136, at 4.) The concept of a telescoping guardrail end terminal was first designed and developed by New Zealand company Armorflex International, Ltd., a subsidiary of Valmont Industries, Inc. (Doc. 151, at 4.) This type of guardrail system uses a slider panel at the end of the guardrail, and

as the guardrail "is pushed rearward, the panels are fed into the slider panel." (Doc. 258-6, at 16.) "The panels stack into the slider panel and are pushed backwards as the shear bolts on subsequent panels release" so that the guardrails "telescope backwards." (*Id.*)

Armorflex and Valmont Industries were named as Defendants in this action but were dismissed without prejudice after entering into a tolling agreement with Plaintiff. (Docs. 37, 39.) In 2006, Armorflex entered an exclusive license agreement with Lindsay Transportation Solutions, Inc., f/k/a Barrier Systems, Inc.'s ("BSI"), allowing BSI to further develop products using Armorflex's patents on the telescoping guardrail end terminal. (Doc. 223-1, at 728–56.) In 2019, BSI merged with Lindsay Transportation Solutions Sales & Service, LLC ("LTSSS") to form Lindsay Transportation Solutions, LLC ("LTS") (collectively, "Lindsay"). (*Id.* at 143–44.)

Defendant Lindsay Corporation denies any involvement with the design or manufacture of the X-LITE but admits that Lindsay, an indirect, wholly-owned subsidiary of Lindsay Corporation, marketed, promoted, advertised, distributed, and sold the X-LITE end terminal. (*Id*.) Despite Lindsay Corporation's position, evidence in the record, including emails, deposition testimony, signatures on contracts, and marketing materials, implicate Lindsay Corporation in the design, marketing, and manufacturing the X-LITE. (Doc. 258-2.) Evidence in the record suggests Lindsay also redesigned, developed, and tested the X-LITE after licensing the original design from Armorflex. (Doc. 223-1, at 758–92; Doc. 223-3, at 864.)

Lindsay, however, also entered into a sub-license agreement with Formet, now known as Forjas Metalicas S.A. DE C.V., pursuant to which Formet could manufacture, market, and sell Lindsay's X-LITE guardrail design, albeit under the tradename label "TX."[1] (Doc. 223-3, at

[1] This Court will refer to a guardrail end terminal manufactured by Lindsay as an "X-LITE" and one manufactured by Formet as a "TX" for clarity but reiterates that the difference exists only in tradename and manufacturer/seller, not in design. (Doc. 223-3, at 864.)

864.) The sub-license agreement ended in April 2013, at which point Lindsay transitioned manufacture and sale of the guardrails from Formet (as TX) to Lindsay (as X-LITE). (*Id.*) When the sub-license agreement ended, any unsold TX systems and kits remained in Formet's possession; Lindsay did not purchase any of the TX guardrail stock. (*Id.*)

Shortly before the close of discovery in this case, Lindsay claimed it discovered that the subject guardrail was a TX—manufactured and sold by Formet—not an X-LITE and amended its answer to add an affirmative defense that Formet was liable under the doctrine of comparative fault. (Docs. 96, 136.) The assertion that Formet, rather than Lindsay, manufactured and sold the subject guardrail arises from evidence that Lindsay's engineering team implemented a design change to the X-LITE slider panel: a purely aesthetic triangle notch to indicate the proper orientation upon final assembly. (Doc. 223-3, at 864.) This engineering change was implemented in August 2013, and Lindsay asserts that it did not sell any X-LITE guardrails in Tennessee until after 2014, after the triangle-notch modification. (*Id.* at 865.) Inspection of the subject guardrail did not reveal any triangle notch in the slider panel. (Doc. 223-1, at 522.)[2] In light of Lindsay's eleventh-hour allegation that Formet manufactured the subject guardrail,

[2] Lindsay also asserts that the "w beams" of subject guardrail contained a unique code that indicates they were manufactured by Trinity Industries, Inc. ("Trinity") in 2012. (Doc. 216, at 7.) Evidence in the record includes a photograph of this "unique code" on the subject guardrail but does not include additional evidence or testimony connecting the code to Trinity. (Doc. 223-3, at 856.) Lindsay states, without citing to evidence, "Lindsay reasonably believes that Formet sourced its guardrail panels from Trinity." (Doc. 216, at 7 n.2.) In light of Lindsay's assertion, Plaintiff amended his complaint to name Trinity as a defendant, identifying Formet as a subsidiary of Trinity. (Doc. 127, at 10.) Trinity subsequently filed a motion to dismiss stating that the allegation that Formet was a subsidiary of Trinity was based on a mistaken belief, neither Formet nor Forjas Metallicas have ever been Trinity subsidiaries, and the only relationship between the companies is that a former Trinity subsidiary acquired assets from Formet in 2013. (Doc. 194, at 1–2.) Thereafter, the parties stipulated to dismiss Trinity from the action. (Doc. 236.)

Plaintiff amended his complaint to name Forjas Metalicas S.A. DE C.V. f/k/a Formet as an additional Defendant. (*See* Doc. 127, at 10.)

Both federal and state authorities approved the subject guardrail. The National Cooperative Highway Research Program ("NCHRP") published the NCHRP 350 Report, which outlines recommended procedures for the safety-performance evaluation of highway features. (*See* Doc. 204-4.) At the time of Hannah Eimers's crash, the Federal Highway Administration ("FHWA") evaluated guardrail-end-terminal performance according to the criteria in this report. (Doc. 222, at 3.) The NCHRP 350 requires end terminals to demonstrate crashworthiness in specific, idealized crash conditions. (*Id.*) For instance, it only tests crashworthiness up to 62.5 miles per hour. (*Id.*) Guardrail manufacturers submit test results and other information to the FHWA, which it evaluates, and issues an approval letter if the guardrail is found compliant with the NCHRP 350. (*See* Doc. 223-1, at 807.) An FHWA letter of approval under the NCHRP 350 criteria allows state departments of transportation to receive subsidies from the federal government for purchase and installation of such an end terminal. (*See* Doc. 258-7, at 56–60.) The X-LITE received an FHWA approval letter in 2011. (Doc. 223-2, at 606.)

The Tennessee Department of Transportation ("TDOT") approves guardrail products and then contracts with installers who may only install products from the approved TDOT Qualified Product List ("QPL"). (Doc. 223-1, at 2.) The TX and X-LITE were submitted to TDOT to evaluate the products for inclusion on the QPL in 2012 and 2013, respectively. (*Id.* at 69.) The submission packet included a "Product Evaluation Submittal Form, the letter from the FHWA stating that X-Lite met the guidelines contained in NCHRP Report 350 and FHWA deemed X-Lite acceptable for use on the National Highway System, Product Specification Sheet, Product Drawings, Product Warranty, Installation Manual, Product Literature, and FHWA test data,

photos, video, and reports." (*Id.*) TDOT accepted the X-LITE for inclusion on the QPL. (*See* Doc. 223-2, at 365.)

In addition to the guardrail manufacturers, Plaintiff also named Reynolds, the state contractor that installed the subject guardrail, as a Defendant. (*Id.* at 9.) In January 2014, TDOT contracted with Reynolds to replace the guardrail system at mile marker 56 on Interstate 75. (*Id.* at 3.) Under its contract with TDOT, Reynolds had no duty to test or evaluate products that are included on the QPL and no authority to approve or deny a product's inclusion on the QPL. (*Id.* at 3.) Reynolds installed the replacement guardrail on December 21, 2014, and TDOT inspected and accepted the work as satisfactory on the same day. (*Id.* at 2–3.) Pursuant to its contract with TDOT, Reynolds was to be paid only after TDOT performed an inspection and found the installation to be satisfactory. (*Id.*) The TX, as manufactured and sold by Formet, was also a TDOT-approved product on the QPL in December 2014. (*Id.* at 365.) While Reynolds has not affirmatively identified whether the subject guardrail was an X-LITE or a TX, it asserts that guardrail was more likely than not an X-LITE:

> Reynolds's inventory records show that they purchased 80 total TX units in February and March 2013 and 488 total X-Lite units between June and December of 2014. The installation of the Subject End Terminal occurred on December 21, 2014. These inventory records indicate that it is more likely than not that Reynolds had used all its TXs in inventory and had ample X-Lites in inventory as of the date of installation. This information, combined with the statement from Gerrit Dyke that it was possible that Lindsay sold X-Lites that did not have the arrow on the slider panel, makes it more likely that Reynolds purchased and installed an X-Lite that did not have an arrow on the slider panel, not that Reynolds "frankensteined" the Subject End Terminal [by combining parts of the TX and parts of the X-LITE].

(Doc. 228, at 10.)

II. *DAUBERT* MOTIONS

A. Standard of Law

Federal Rule of Evidence 702 governs the admissibility of testimony by expert witnesses and provides:

> A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:
>
> (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
>
> (b) the testimony is based on sufficient facts or data;
>
> (c) the testimony is the product of reliable principles and methods; and
>
> (d) the expert has reliably applied the principles and methods to the facts of the case.

Fed. R. Evid. 702; *see Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 588–95 (1993) (construing Rule 702). However, "the Rule 702 inquiry [is] 'a flexible one.'" *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 150 (1999) (internal citations omitted). "*Daubert* makes clear that the factors it mentions do not constitute a 'definitive checklist or test'" and "adds that the gatekeeping inquiry must be "tied to the facts' of a particular 'case.'" *Id.* (quoting *Daubert*, 509 U.S. at 591–93). The Sixth Circuit has identified three requirements for admissibility under Rule 702: (1) "the witness must be qualified by knowledge, skill, experience, training, or education"; (2) "the testimony must be relevant, meaning that it will assist the trier of fact to understand the evidence or to determine a fact in issue"; and (3) "the testimony must be reliable." *In re Scrap Metal Antitrust Litig.*, 527 F.3d 517, 528–29 (6th Cir. 2008).

With respect to the first requirement, courts consider whether the expert's qualifications "provide a foundation for a witness to answer a specific question," as opposed to considering his or her qualifications in the abstract. *Burgett v. Troy-Bilt, LLC*, 579 F. App'x 372, 376 (6th Cir.

2014) (citing *Berry v. City of Detroit*, 25 F.3d 1342, 1351 (6th Cir. 1994)). The party offering the expert testimony must prove the expert's qualifications by a preponderance of the evidence. *Id.* (citing *Sigler v. Am. Honda Motor Co.*, 532 F.3d 469, 478 (6th Cir. 2008)).

To determine whether expert testimony is relevant, a court must, as a preliminary matter, consider whether the proffered expert testimony is relevant under Rule 401. *Daubert*, 509 U.S. at 587 (citing Fed. R. Evid. 401). Rule 401 provides that "[e]vidence is relevant if: (a) it has any tendency to make a fact more or less probable than it would be without the evidence; and (b) the fact is of consequence in determining the action." Fed. R. Evid. 401. The testimony must "assist the trier of fact to understand the evidence or to determine a fact in issue." *Daubert*, 509 U.S. at 591 (quoting Fed. R. Evid. 702). "Expert testimony which does not relate to any issue in the case is not relevant and, ergo, non-helpful." *Id.* at 591 (citations omitted). In addition to relevance as defined in Rule 401, "Rule 702's 'helpfulness' standard requires a valid scientific connection to the pertinent inquiry as a precondition to admissibility." *Id.* at 591–92. This aspect of the relevance requirement—described in *Daubert* as "fit"—concerns whether the method on which the testimony is based is scientifically valid for the "pertinent inquiry" in the case. *Id.* !

Reliability, the third requirement, is assessed using the factors set out in Rule 702 itself—whether the testimony is based on sufficient facts or data, whether the testimony is the product of reliable principles and methods, and whether the principles and methods used were reliably applied. *In re Scrap Metal*, 527 F.3d at 529 (citing Fed. R. Evid. 702). To be reliable, an expert's testimony must be supported by "'good grounds,' based on what is known." *Id.* (quoting *Daubert*, 509 U.S. at 595). A reliable expert opinion also "rests upon a reliable foundation, as opposed to, say, unsupported speculation." *Id.* at 529–30. Courts "generally

permit testimony based on allegedly erroneous facts when there is some support for those facts in the record." *Id.* at 530. Thus, reliability—distinct from "credibility and accuracy"—focuses on the methodology employed rather than the conclusions drawn. *Superior Prod. P'ship v. Gordon Auto Body Parts Co., Ltd.*, 784 F.3d 311, 323 (6th Cir. 2015) (quoting *In re Scrap Metal*, 527 F.3d at 529); *see Daubert*, 509 U.S. at 595.

In determining whether expert testimony "is the product of reliable principles and methods," Fed. R. Evid. 702(c), courts may consider whether the methods and principles have been and are capable of being tested, whether they have been subjected to peer review and publication, their known or potential rate of error, and whether they are generally accepted within the relevant scientific community. *See Daubert*, 509 U.S. at 593–94; *see also United States v. Mallory*, 902 F.3d 584, 592–93 (6th Cir. 2018) (noting that all the factors do not necessarily apply in every case). The inquiry, however, is flexible, and the district court may also consider other factors that bear on the reliability of the expert's testimony. *See Kuhmo*, 526 U.S. at 149–50 ("[A] trial court should consider the specific factors identified in *Daubert* where they are reasonable measures of the reliability of expert testimony."); *see, e.g.*, *Johnson v. Manitowic Boom Trucks, Inc.*, 484 F.3d 426, 434–35 (6th Cir. 2007) (approving consideration of the extent to which an expert's opinion was prepared solely for litigation in determining its reliability).

"[R]ejection of expert testimony is the exception rather than the rule," *In re Scrap Metal*, 527 F.3d at 530, and "Rule 702 should be broadly interpreted on the basis of whether the use of expert testimony will assist the trier of fact," *Burgett*, 579 F. App'x at 376 (quoting *Morales v. Am. Honda Motor Co., Inc.*, 151 F.3d 500, 516 (6th Cir. 1998)). "A court should not use its gatekeeping function to impinge on the role of the jury or opposing counsel." *Id.* at 376–77; *see*

also Daubert, 509 U.S. at 596 ("Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.").

Additionally, as the United States Supreme Court explained in *Daubert*, "a judge assessing a proffer of expert scientific testimony under Rule 702 should also be mindful of other applicable rules." 509 U.S. at 595 (citing Rule 403, among other examples); *see also id.* ("Expert evidence can be both powerful and quite misleading because of the difficulty in evaluating it. Because of this risk, the judge in weighing possible prejudice against probative force under Rule 403 of the present rules exercises more control over experts than over lay witnesses." (internal citations and quotation marks omitted)). Pursuant to Rule 403,

> The court may exclude relevant evidence if its probative value is substantially outweighed by a danger of one or more of the following: unfair prejudice, confusing the issues, misleading the jury, undue delay, wasting time, or needlessly presenting cumulative evidence.

Fed. R. Evid. 403. Rule 403 provides an independent basis to exclude expert testimony that otherwise comports with the Federal Rules of Evidence. *See, e.g.*, *United States v. Semrau*, 693 F.3d 510, 516 (6th Cir. 2012).

A district court may, but need not, hold an evidentiary hearing to aid in the decision of whether to admit expert testimony. *See Kuhmo Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 152 (1999).

B. Analysis

i. Dr. Kim Collins

Plaintiff moved to exclude the testimony of Dr. Kim Collins, Lindsay's expert pathologist (Doc. 145). Lindsay retained Dr. Collins "to opine on what injuries, if any, Ms. Eimers would

have sustained had the end terminal not penetrated the vehicle." (Doc. 200, at 2.) The entirety of Dr. Collins's opinions in her expert report consists of the following three paragraphs:

> Hannah Eimers was the driver of a Volvo who was fatally injured in an accident when her vehicle left the roadway. When Eimers left the roadway, she was traveling between 70–76 mph. The car slid to the left and rotated in a clockwise direction. Upon impact, the speed of the car was 64 mph. Within the car, Eimers moved forward and to the left with the respect to the interior. Her head and body were carried to the interior surface of the driver's door. She would have had initial contact with the interior of the driver's door before the guard rail breached the door. The guard rail entered the driver's compartment.
>
> The head and neck are the most prevalent fatal injuries in a side impact collision. For belted occupants, the highest risk for brainstem injury is in a side impact versus rear or frontal impacts. The incidence of thoracic aorta injury is higher for occupants seated at the side closest to the impact. Side occupants (occupants at the side of the impact) experience three times incidence of serious or immediately fatal injuries compared to far side occupants.
>
> It is my opinion that even without intrusion of the guard rail, Hannah Eimers would have suffered serious if not fatal brainstem and possibly aortic injuries.

(Doc. 145-1, at 2–3.)

In reaching these conclusions, Dr. Collins reviewed Hannah Eimers's external autopsy report, over 120 photographs of the scene of the accident and the vehicle involved in the crash, several deposition transcripts, the EMS record, the Tennessee Crash Report, the Fire Department record, the Tennessee Electronic Traffic Collision Report, the expert reports of Dr. Sri Kumar, Michael J. McCort, Dr. Kevin Schrum, Dr. Dean Sicking, and Dr. Marthinus van Schoor, as well as materials from Lindsay's experts, Dr. David DeLonga, Mr. Joey Parker, and Mr. Lance Bullard. She also reviewed all the files relied upon by Dr. Kumar and Mr. McCort. (*Id.* at 2; Doc. 200, at 3–4.) Plaintiff does not dispute that Dr. Collins is qualified to testify regarding the cause of Hannah Eimers's death. (Doc. 145; Doc. 200, at 3); *see Burgett*, 579 F. App'x at 376. Plaintiff instead challenges the relevancy and reliability of Dr. Collins's opinion, arguing it "is speculative, is founded upon assumptions lacking a sufficient factual basis, relies upon dissimilar

articles and 'personal experience,' and contains too many disregarded variables." (Doc. 145, at 18); *see Burgett*, 579 F. App'x at 376.

Specifically, Plaintiff first argues that Dr. Collins's opinions are irrelevant because her conclusions are based on her general observations and experience doing autopsies on side-impact crash victims and are not based on any of the particular characteristics of this crash. (Doc. 145, at 6.) But Dr. Collins *did* consider the particular circumstances of Hannah Eimers's death by reviewing and relying on, among other things, her external autopsy report, over 120 photographs of the scene and vehicle, depositions, EMS records, and Plaintiff's expert reports. (Doc. 200, at 3.) The fact that Dr. Collins's opinions are about side-impact crashes generally does not make her opinions irrelevant; rather, Plaintiff's arguments go to the weight, not the admissibility, of her opinions. *See*, *e.g.*, *Smith v. BMW North America, Inc.*, 308 F.3d 913 (8th Cir. 2002) ("experts who can offer a global understanding of the possible causes of an injury are useful to a jury"); *Est. of Love v. Rassmussen*, No. 115CV01207, 2018 WL 10613262, at *5 (C.D. Ill. July 18, 2018) ("This testimony, which relates to the cause and manner of injury and death, is within the expertise of a forensic pathologist"); *Byrd v. Wal-Mart Transp., LLC*, No. 609CV014, 2009 WL 3429562, at *8 (S.D. Ga. Oct. 23, 2009) (noting it would be appropriate for the forensic pathologist to testify that "Mr. Holton could have survived for seconds to minutes after the collision" (quotation marks omitted)); *White v. Gerardot*, No. 1:05CV-382, 2008 WL 4372019, at *2, 11 (N.D. Ind. Sept. 23, 2008) (rejecting argument that pathologist's opinion was speculative where expert "relied on photographs, the autopsy report, and the description of the" injuries). Accordingly, as a pathologist, Dr. Collins's opinions regarding Hannah Eimers's cause of death, which she concedes is the penetration of the subject guardrail into the vehicle, as well as how injuries are generally sustained in similar vehicle crashes, are relevant.

Plaintiff relies on *Nelson v. Tennessee Gas Pipeline Co.*, 243 F.3d 244, 254 (6th Cir. 2001), to support its proposition that Dr. Collins's opinions are unreliable. (Doc. 145, at 15.) In *Nelson*, the court held that "[a] district court is not required to admit expert testimony 'that is connected to existing data only by the *ipse dixit* of the expert. A court may conclude that there is simply too great an analytical gap between the data and the opinion proffered.'" 243 F.3d at 254 (quoting *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997)). The second paragraph of Dr. Collins's opinions discusses how brainstem and aortic injuries can occur in vehicle crashes and what circumstances can increase the risk of these injuries, including the impact occurring on the side of the vehicle and the passenger being seated on the side closest to the impact. (Doc. 145-1, at 3.) These opinions are based on, in addition to her professional experience and review of the case, Dr. Collins's evaluation of two relevant publications: *Brainstem Injury in Motor Vehicle Crashes,* and *Aortic Injuries in Side Impacts: a Preliminary Analysis.* (Doc. 200, at 4–5.) The evidence and analysis in these publications offer reliable support to confirm Dr. Collins's second-paragraph opinions. (Docs. 200-7; 200-8.) There is little, if any, analytical leap between the evidence and conclusions supported by these publications and Dr. Collins's second-paragraph conclusions. Accordingly, these opinions are reliable and admissible.

In the third paragraph of her opinion, Dr. Collins states: "It is my opinion that even without intrusion of the guard rail, Hannah Eimers would have suffered serious if not fatal brainstem and possibly aortic injuries." (Doc. 145-1, at 3.) Unlike her second-paragraph opinions, this conclusion is unreliable. (*See id.*); *Nelson*, 243 F.3d at 254. Because Dr. Collins acknowledges that not all drivers in high-speed, drivers-side impacts into guardrails sustain these injuries, Dr. Collins takes an analytical leap to reach this conclusion. (Doc. 145-2, at 7; Docs. 200-7; 200-8.) Preceding her conclusions, she observes only (1) that the "head and neck are the

most prevalent fatal injuries in a side impact collision" (this says no more than that, among those who die, they would die from head and neck trauma); (2) that side impact is more likely to cause brainstem injuries than front or rear impact (again, this sheds no light on the likelihood of death or serious injury without guardrail penetration); and (3) that occupants on the side of impact are more likely to die or be seriously injured than those seated on the other side of the vehicle (still, this sheds no light on how likely injury was without guardrail penetration). (Doc. 145-1, at 2–3.) Dr. Collins makes no assessment of the change in velocity of the crash, the probability for these injuries for the specific change in velocity in this crash, how the guardrail would have performed had it not penetrated the vehicle, how the vehicle would have moved on impact if the guardrail had not penetrated the vehicle, the characteristics of Hannah Eimers's vehicle, her body's movement within the vehicle, and other specific metrics of this crash. (Doc. 145, at 9–10.) She simply proclaims that certain injuries are more likely in a side-impact crash. She offers no information on how likely they are, yet she concludes, somehow, that Hannah Eimers would have suffered exactly such injuries even without the guardrail penetration.

When asked in her deposition about the basis for her conclusion, Dr. Collins said she could offer no other bases besides "previous research that I've read and just education, knowledge, experience with the autopsies that I've performed." (Doc. 145-2, at 8.) And further, when asked if she has ever looked at the speed, principal direction of force, or any other metrics of the crash in any previous autopsies, she stated, "I would not have done that." (*Id.*); *see Madej v. Maiden*, 951 F.3d 364, 375 (6th Cir. 2020), *cert. denied,* 141 S. Ct. 612, (2020) ("Courts have repeatedly found opinions unreliable when they were based more on an expert's 'subjective belief' than on an objective method that can be tested." (collecting cases, citations omitted))

To conclude that Hannah Eimers *would have* suffered serious, if not fatal, brainstem and/or aortic injuries even if the subject guardrail had not penetrated the vehicle requires leaps beyond any reliable scientific basis Dr. Collins has considered. Moreover, to come to her conclusion with a reasonable degree of scientific certainty, Dr. Collins would need to understand accident reconstruction—the effect of sudden deceleration, the delta-V over time, the body's movement within the car, the point at which airbags would deploy, areas of impact, etc.—which are outside her area of expertise. *See Est. of Love v. Rassmussen*, No. 115CV01207SLDJEH, 2018 WL 10613262, at *6 (C.D. Ill. July 18, 2018) (quoting *State v. Locascio*, 42 A.3d 179 (N.J. App. Ct. 2012)) (finding accident reconstruction outside of the pathologist's expertise, "confin[ing] his opinions to the nature of the injuries and the objects that he believed had caused those injuries"). The fact that Dr. Collins walked back the conclusory nature of her opinion in deposition, stating more equivocally that "there is a strong possibility that she would have suffered an aortic vascular injury and/or injury to the brainstem" reflects Dr. Collins's lack of evidence for *affirmatively* stating Hannah Eimers "would have" suffered these injuries if the accident happened differently. Furthermore, allowing Dr. Collins to, effectively, speculate about alternative possible injuries runs a serious risk of unfairly prejudicing Plaintiff, confusing the issues, and misleading the jury, and these dangers substantially outweigh any probative value of allowing her testimony. *See* Fed. R. Civ. P. 403.

Accordingly, Dr. Collins's conclusion that Hannah Eimers *would have* suffered serious, if not fatal, brainstem and/or aortic injuries even if the subject guardrail had not penetrated the vehicle is inadmissible, so Plaintiff's *Daubert* motion (Doc. 145) is **GRANTED IN PART**. However, the rest of Dr. Collins's proffered testimony regarding the injuries Hannah Eimers sustained, the types of injuries victims sustain in side-impact crashes, and the severity and

frequency of those injuries, is admissible expert testimony under Rule 702. Therefore, Plaintiff's *Daubert* motion, is **DENIED IN PART**, with respect to Dr. Collins's remaining opinions.

ii. Dr. Kevin Schrum

Lindsay moved to exclude the expert opinions of Dr. Kevin Schrum, a research scientist in mechanical engineering (Doc. 201). Dr. Schrum states his conclusions as:

1) The guardrail terminal involved in the subject crash was a X-Lite manufactured by Lindsay Transportation Solutions.

2) The X-Lite fully stroked during the collision.

3) The impact between the vehicle and the guardrail occurred at a shallow angle.

4) The driver's side of the vehicle made initial contact with the guardrail terminal head.

5) The impact energy of the subject crash was within the range of expectation established by the crash test standard NCHRP Report 350.

6) The X-Lite was not capable of managing the energy of the subject vehicle.

7) The inability to absorb energy and prevent penetration was readily identifiable from computer simulations.

8) A guardrail with a continuous connection through the guardrails and a reliable method for absorbing energy would have significantly reduced the probability of the severe injuries in the subject crash. The SKT-350 and the ET-2000 meet this definition and is [sic] therefore a safer alternative design.

9) The subject crash illustrates the overarching design defect of the X-Lite and is one of many other similar incidents to do so.

(Doc. 202-1, at 2.) As the basis for his opinions, Dr. Schrum relied on photos of the crash scene, examination of the X-LITE model and vehicle model, other experts' reports, kinetic energy calculations, crash test reports, industry publications, and computer modeling. (*See id.* at 2–6, 25–27.)

Lindsay argues Dr. Schrum's opinion is inadmissible because: (1) "his opinion on design defects is not relevant to the extent that he opines on four generic 'defects' that did not occur in

this impact," and his methodology to determine defects is unreliable; (2) "his opinion regarding proximate cause is similarly inadmissible because he cannot connect the supposed defects to Ms. Eimers's injuries"; (3) "Schrum is not qualified on several of the topics in his report, including the FHWA approval process and/or state DOT evaluations of the X-Lite for inclusion on their qualified products list"; and (4) "Schrum's opinion rests on an assumption that the subject end terminal was manufactured by Lindsay, which it was not." (Doc. 202, at 6–7.)

a. Opinion on Design Defects

Lindsay argues Dr. Schrum's opinion on design defects should be excluded because it is irrelevant and not reliable. (*Id.* at 7.)

1. Relevance of X-LITE Defect Opinions

Dr. Schrum's proffered testimony on design defects includes his identification of specific defects, which all contribute to the overall alleged defective energy-absorption mechanism. (*Id.* at 8.) Dr. Schrum explains the defective energy-absorption mechanism as follows:

> The X-Lite has many underlying design flaws which can be thought of as failed attempts to bring the original concept to life. However, the main problem with the X-Lite is the original concept itself. The energy absorption mechanism unique to the X-Lite is in the friction of the guardrails as they slide past each other during the telescoping action. Friction is highly dependent on the normal force. The X-Lite has a bracket around the guardrail that allegedly provides this normal force by clamping the guardrail together. However, that contact is only established intermittently. It is quite possible for the rails to have no normal force, and therefore no friction force, for portions of the impact. This means the energy cannot be absorbed sufficiently. [T]he rate of energy absorption is not high enough to stop a vehicle traveling at normal speeds before it gets to the end of the system. The end of the system is where the terminal converts back into normal guardrail. That means there are no shear bolts. Regular guardrail splice bolts (eight in total) are stronger than the guardrail itself. Therefore, when a vehicle reaches this point, as it did in the Eimers crash, it will be met by a stiff, blunt end of guardrail, which can easily penetrate the vehicle. Vehicles do not often travel this far while telescoping all the rails because of the many underlying defects in the execution of the design. Therefore, it is the illustration of what could happen that is important. It is illustrated that the velocity of the vehicle will be relatively

> high in the crash, making it far more susceptible to catastrophic outcomes, compared to a terminal that adequately slows down the vehicle.

(Doc. 202-1, at 5.) Lindsay specifically contends that Dr. Schrum *admitted* at his deposition that none of the specific defects with the X-LITE he identifies in his expert report played a role in this crash. (Doc. 202, at 8.)

The contention that Dr. Schrum "admitted" none of the defects he identified played a role in this crash is a mischaracterization of Dr. Schrum's testimony. Dr. Schrum's actual deposition testimony reveals a more nuanced opinion, but he consistently testifies that each of these "specific" defects combined and contributed to the overall design defect, namely, its inability to dissipate energy properly and reliably on impact. (*See* Doc. 223-2, at 376–85.) For example, when asked at deposition, "Do you agree with me that none of the defects that you've outlined in this section about the width of the impact plate are the reason why the X-LITE penetrated into the vehicle occupant compartment?" Dr. Schrum did not *admit* so, instead answering, "Well, it contributes to it. So all of these—all of these defects are associated with the defect of energy management. And the width is just one of those things that contributes to that." (*Id.* at 376.) After further questioning on this issue, Dr. Schrum was asked, "Do you agree with me that the defects that you have here under width of impact head all come down to basically energy management of the X-LITE?" to which he responded, "Yes." (*Id.* at 377.) These answers, and the testimony Lindsay cites regarding the other specific defects, do not admit that there was no defect; instead, they maintain that there were several design flaws, all of which contributed to the overall design defect of improper energy management. (*See id.* at 377–85.) Contrary to Lindsay's argument, Dr. Schrum's testimony is relevant and specifically related to this case, not just about generalized, theoretical defects unconnected to this case.

2. Reliability of X-LITE Defect Opinions

Lindsay also argues Dr. Schrum's opinions on design defects and alternative designs are unreliable because they rely on speculation, ignore contrary evidence, and were not tested according to the conditions of Hannah Eimers's crash. (Doc. 202, at 10–13.) These criticisms deal with which data points Schrum used to make his calculations, and which he omitted. "The Court is not required to accept an [expert's] projections where they demonstrate cherry-picking an isolated and self-serving data point rather than responding to the reality of the case." *Sheffield v. Int'l Paper Co.*, No. 2018CV02701JPMCGC, 2020 WL 1882906, at *2 (W.D. Tenn. Feb. 26, 2020) (excluding the expert's opinions as unreliable where he ignored substantial available data without explanation) (citing *Bruno v. Bozzuto's, Inc.*, 311 F.R.D. 124, 142 (M.D. Pa. 2015) (excluding expert testimony where "the evidence suggests that Plaintiffs' experts actually chose certain of the highest data points that were available to them, regardless of their disjunction with reality.")). Lindsay supports its "cherry-picking-the-evidence" argument by the fact that four of the eight crash tests Dr. Schrum used to calculate the force-absorption rate were "developmental," meaning Lindsay made design changes to the X-LITE before it went to market but after those tests were done. (Doc. 202, at 11.) Lindsay only conducted fourteen crash tests which it made available to expert witnesses in this case. (*See* Doc. 223-1, at 103.) Some of the fourteen total crash tests, including the four Lindsay complains about Dr. Schrum using, were developmental. Dr. Schrum used only eight of the fourteen crash tests, but the remaining six were omitted because Lindsay did not make the accelerometer data, needed to calculate the energy absorption rate, available in those six. (*Id.* at 103–04.)

Dr. Schrum did not ignore substantial available data without explanation, like the expert in *Sheffield*. *See* 2020 WL 1882906, at *2–3. Rather, he used *all* of data points available to make

this calculation. (Doc. 223-1, at 103–04.) Dr. Schrum included every non-developmental test with accelerometer data available. (*Id.*) Yet, Lindsay asks the Court to find data from the *only available crash* tests to be unreliable *because* Lindsay itself made post-test design changes. (*See* Doc. 202, at 11.) Because Dr. Schrum did not "conveniently" omit available data, Lindsay has not established that he "cherry-picked" data sufficient to render his opinions unreliable.

To the extent Lindsay argues that the lack of available non-developmental crash-test data points skews Dr. Schrum's calculations and conclusions, the issue is not a *Daubert* problem, but goes to the credibility and accuracy of the testimony. *See In re Scrap Metal Antitrust Litig.*, 527 F.3d 517, 529–530 (6th Cir. 2008) ("Columbia contends that Leitzinger used erroneous data and necessarily produced an erroneous conclusion; in sum, "garbage in, garbage out." . . . Columbia's argument is unpersuasive because it fundamentally confuses the credibility and accuracy of Leitzinger's opinion with its reliability."). Lindsay is free to develop its theory that the conclusions are not credible at trial, but Dr. Schrum's opinions meet the reliability standard to be admissible under Rule 702 and *Daubert*.

3. Relevance and Reliability of Alternative Design Opinions

Lindsay also challenges Dr. Schrum's testimony on the alternative designs as irrelevant and unreliable because he has conducted no analysis as to how these devices would have performed in *this* crash. (Doc. 202, at 14.) The feasibility of a safer, alternative design is a relevant factor to be considered under the TPLA to determine whether "the product because of its dangerous condition would not be put on the market by a reasonably prudent manufacturer or seller." Tenn. Code Ann. § 29-28-102(8); *Ray ex rel. Holman*. *See* 925 S.W.2d at 533 n. 10 ("These factors [of the prudent manufacturer test] include: . . . (3) The availability of a substitute product which would meet the same need and not be as unsafe."). The alternative designs Dr.

Schrum analyzes are the SKT and ET-2000, two other guardrail systems that were on the market at the time the subject guardrail was installed. (Doc. 202-1, at 6.)

Lindsay contends that his opinion should be excluded as unreliable because Dr. Schrum performed no testing of the SKT or the ET-2000. (Doc. 202, at 14–15.) Other courts have excluded expert testimony on alternative designs as unreliable where the alternative designs had not been tested. *E.g.*, *Zaremba v. General Motors Corp.,* 360 F.3d 355, 358–59 (2nd Cir. 2004); *Watkins v. Telsmith, Inc.,* 121 F.3d 984, 990 (5th Cir. 1997) (quoting *Cummins v. Lyle Indus.*, 93 F.3d 362, 368 n.2 (7th Cir. 1996) ("Testing is not an 'absolute prerequisite' to the admission of expert testimony on alternative designs, but Rule 702 demands that experts 'adhere to the same standards of intellectual rigor that are demanded in their professional work.'"); *Milanowicz v. The Raymond Corp.*, 148 F. Supp. 2d 525, 535 (D.N.J. 2001) ("Testing applies scientific or technical principles to the subject at issue. Before a court can evaluate the reliability of an expert's methodology, the expert must employ one."); *see generally Brown v. Crown Equip. Corp.*, 181 S.W.3d 268, 278 (Tenn. 2005) ("We recognize that some courts have excluded expert testimony of a safer alternative design where the expert did not create detailed drawings of the design or perform tests."). The courts' reasoning in those cases, however, turns on the fact that the proposed alternative designs have been *completely* untested. *See, e.g.*, *Zaremba,* 360 F.3d at 358–59; *Watkins,* 121 F.3d at 990; *Milanowicz*, 148 F. Supp. 2d at 535.

Unlike the alternative designs in those cases, the SKT and the ET-2000 have been subjected to rigorous crash testing; the issue is merely that Dr. Schrum did not personally perform that testing. (*See* Doc. 241-1, at 8–10.) Lindsay cites no case supporting the proposition that opinions regarding a well-tested alternative design should be excluded when the testifying

expert did not perform the testing. (Doc. 202, at 14–15.) There is no basis to hold that Dr. Schrum's opinions concerning alternative designs are unreliable.

Lindsay also argues that Dr. Schrum's opinions are irrelevant because the testing was not specifically tailored to Hannah Eimers's case. (*Id*.) Lindsay similarly cites no case supporting the proposition that, to be admissible under Rule 702, testing must be done on alternative designs using the precise characteristics of the scenario present at trial. (*Id.*) Furthermore, Dr. Schrum's analysis of the alternative designs does consider the specific characteristics of Hannah Eimers's crash. (Doc. 202-1, at 9–10.) He used the tested energy-absorption rates of the alternative designs and the kinetic energy of Hannah Eimers's crash to determine at what point the alternative guardrails would have stopped the vehicle. (*Id.*) His conclusions that the alternatives would have performed better is based on these inputs, and his opinions are, indeed, relevant to this case. (*Id.*) Lindsay presents no convincing argument that Dr. Schrum's opinions on design defects are irrelevant or unreliable, so the Court will not exclude his testimony on this matter.

b. Opinion on Proximate Cause

Lindsay next contends Dr. Schrum's opinions on proximate cause must be excluded because, "Dr. Schrum fails to link the alleged defects to Ms. Eimers' injuries, [so] his opinion does not bear relevance to this matter." (Doc. 202, at 19.) This argument is also based on the contention that Dr. Schrum "admitted" none of the specific defects he identified in his report played a role in Hannah Eimers's accident. (*Id.* at 18.) Again, this is a mischaracterization of Dr. Schrum's testimony. *See supra* Section II.B.ii.a.1. Dr. Schrum, instead, opines that all the specific defects he identified combined and all played a role in Hannah Eimers's accident. (Doc. 223-2, at 376.)

Lindsay goes on to argue that Dr. Schrum's testimony is irrelevant because he did not perform crash tests, computer modeling, finite element analysis, or real-world analysis of how the X-LITE or the alternative designs would have performed in this particular impact. (Doc. 202, at 18–19.) Again, Lindsay mischaracterizes Schrum's opinions as devoid of any relevance or empirical basis simply because it disagrees with the accuracy and credibility of the empirical bases that Dr. Schrum *did*, in fact, use. *See In re Scrap Metal*, 527 F.3d at 529–30. Dr. Schrum used a reliable empirical basis for his opinions, and he properly considered the characteristics of this particular crash. (*See* Doc. 202-1.) He used all of the available crash test data from the tests Lindsay performed to demonstrate crashworthiness under the NCHRP 350. (*Id*. at 8.) He used that data to calculate the average energy-dispersion rate by the following process:

> By integrating the acceleration data twice, I calculated displacement. Then, multiplying the acceleration data by the weight of the vehicle resulted in the attending force. Plotting this force against the displacement provided a measure of energy (the area under the force-displacement curve). Then, using high-speed video footage, I was able to determine at what point the telescoping action stopped for each of these tests. Then, looking at the area under the force-displacement curve up to the appropriate displacement provided the total energy absorbed by the intended energy absorbing mechanism. Dividing this energy by the telescoping displacement provided an average force exerted on the vehicle while the X-Lite was performing as it was supposed to perform.

(*Id.*)

The calculation process resulted in an average energy-dispersion rate of 5.49 kip-ft/ft. (*Id.*) He then considered the specific conditions of this crash. With the impact speed between 65 and 75 mph, and Hannah Eimers's vehicle weight of 3,985 pounds, Dr. Schrum used a standardized equation to calculate the kinetic energy of the impact to be between 563 and 653 kip-ft. (*Id.* at 9.)

Lindsay seems to take issue with the fact that Dr. Schrum based one calculation on the average test vehicle weight and speed for the standard NCHRP 350 crash test, rather than the

specific conditions in Hannah Eimers's crash. The relevant portion of Dr. Schrum's report states:

> For a standard crash test (Test 3-31 in NCHRP 350), the energy is 569 kip-ft. Therefore, at the end of the [37.5 feet of] telescoping action, the vehicle would still have 363.1 kip-ft. Given the nominal test vehicle weight, this energy correlates with a velocity of 49.6 mph. This is way more than enough velocity and energy to impale a vehicle.

(*Id*. at 8.) Lindsay misunderstands the purpose of this opinion. (*See* Doc. 202 at 18–19.) The impact energy in the average crash test is 569 kip-ft, less than the maximum projected energy in Hannah Eimers's crash, 653 kip-ft. (Doc. 202-1, at 8–9.) Thus, Dr. Schrum uses this calculation to opine that even in the *idealized* conditions of a standard crash test, the X-LITE's energy-dispersion mechanism is defective and can cause the guardrail to spear the vehicle. (*Id*.) Lindsay asks the Court to exclude this testimony on the basis that it is not specific to the *imperfect* conditions of Hannah Eimers's crash, when the fact is, that the guardrail's failure to perform under *perfect* conditions makes Dr. Schrum's opinions even more probative of the cause of Hannah Eimers's injuries. (*See* Doc. 202, at 18–19.) This calculation is, therefore, relevant to the causation of Hannah Eimers's crash.

Furthermore, Dr. Schrum did not stop his analysis at his consideration of these perfect conditions. Instead, he went on to analyze the specific conditions of the Eimers crash. (*See* Doc. 202-1, at 9.) With the 5.49 kip-ft/ft average energy-dispersion as determined from all of the available crash test data, Dr. Schrum calculated that there would need to be 119 feet of proprietary X-LITE guardrail to properly dissipate the energy generated in Hannah Eimers's impact. (*Id*.) The subject guardrail provided only 37.5 feet before the telescoping action, and energy dispersion, ended and was therefore insufficient to disperse the energy in Hannah

Eimers's crash. (*Id.*) Dr. Schrum's opinion that the energy-dispersion defect caused the guardrail to spear the vehicle and injure Hannah Eimers is relevant.

c. Qualifications to Opine on Regulatory Process

Dr. Schrum opined that Lindsay "withheld vital information from the FHWA that would have potentially altered the evaluation process conducted by the FHWA." (Doc. 202-6, at 1.) Lindsay argues that Dr. Schrum is not qualified to opine about what the FHWA "would have done" or about the FHWA and state department of transportation QPL approval processes for the X-LITE because he has never worked for the FHWA nor "spoken to anyone at the FHWA about his opinion." (Doc. 202, at 20.) The only experience Plaintiff cited to rebut the contention that Dr. Schrum was unqualified to testify as to the regulatory process was his deposition testimony that he "worked for a long time at the [M]idwest roadside safety facility." (Doc. 241, at 15 (citing Doc. 241-1, at 17).) Dr. Schrum's CV reflects that he was a "Graduate Research Assistant" at "Midwest Roadside Safety Facility" in Lincoln, Nebraska, and lists his experience as, "[c]onducted research on roadside safety topics," "[w]rote reports and papers to summarize research and to present conclusions," and "[i]nvestigated the material science of steel to improve the state-of-the-art in roadside safety." (Doc. 223-2, at 360.) No other experience on his CV appears to pertain to the regulatory-approval process. (*Id.*)

The record is insufficient for the Court to determine whether Dr. Schrum is qualified to opine on the regulatory process. (*Id.*) However, the Court will nonetheless exclude Dr. Schrum's testimony on how the information Lindsay withheld from the FHWA would have altered its evaluation process on the basis that it is unhelpful to the jury under Rule 702. *See* Fed. R. Evid. 702 ("A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if: (a) the expert's

scientific, technical, or other specialized knowledge *will help the trier of fact* to understand the evidence or to determine a fact in issue . . . ." (emphasis added)). The Court finds the analysis in *In re Rezulin Products Liability Litigation*, 309 F. Supp. 2d 531 (S.D.N.Y. 2004) instructive. In *In re Rezulin*, the plaintiff's pharmacoepidemiology expert who opined that the FDA would not have approved the drug treatment at issue in the case "had it been aware of certain liver injury data from the clinical trials" that the defendant had "buried" in an appendix to its new drug application to the FDA. *Id.* at 548–50. The Court held that such expert testimony would not assist the factfinder because it "constitutes lay matter that the fact-finder can understand without the assistance of experts, regardless of [how] much experience these witnesses have with clinical trials." *Id.* at 549. The opinion did not implicate the expert's experience and expertise but was rather an inference drawn from his review of the application documents—a review that the jury could do itself. *Id.* at 550.

Similarly, in this case, what the FHWA would have done had Lindsay included more information and crash test results in its submission packet can be determined by a lay jury without expert testimony. Dr. Schrum's opinion does not implicate his expertise in mechanical engineering, but rather is a simple inference based on his review of the X-LITE's failed crash tests results, his review of FHWA memoranda regarding the X-LITE, and only a basic understanding of the FHWA approval process. (Doc. 202-6, at 5.) A jury could consider this same evidence and assess whether the failed crash test data would have changed the FHWA's evaluation. Accordingly, Lindsay's motion (Doc. 201) is **GRANTED IN PART**, and Dr. Schrum's opinion on what the FHWA would have done with additional information from Lindsay will be excluded as unhelpful to the jury under Rule 702.

d. Manufacturer of Subject End Terminal

Lindsay's final argument for excluding Dr. Schrum's testimony is that it assumes that the subject guardrail was a Lindsay-manufactured X-LITE, not a Formet-manufactured TX. (Doc. 202 at 21.) Lindsay contends that the subject guardrail was, in fact, a TX, so Dr. Schrum's opinions are unreliable. (Doc. 202, at 21.) However, there is a question of fact for the jury to decide as to whether the subject guardrail was an X-LITE or a TX.[3] Further, even assuming the subject guardrail is a TX, there is an additional question of fact as to whether Lindsay was the *designer* of the TX,[4] and because Dr. Schrum's opinions are related to design defects, rather than manufacturing defects, the opinions would still be relevant. Accordingly, Lindsay's motion to exclude the expert opinions of Dr. Kevin Schrum (Doc. 201) is **DENIED IN PART.**

iii. Dr. Dean Sicking

Lindsay has also moved to exclude the expert opinions of Dr. Dean Sicking (Doc. 203). Dr. Sicking is an engineer in the guardrail-safety industry whom Plaintiff retained to testify regarding Lindsay's failure to use reasonable care to design and test the X-LITE. (Doc. 239, at 4–7.) Dr. Sicking's opinion identifies seven areas of shortcomings in Lindsay's development and testing of the X-LITE:

1. Failure to follow many of the recommendations in NCHRP Report 350.
2. The X-Lite's energy dissipation system is inadequate for use in tangent or in straight-flared applications.

[3] The facts are in dispute on this matter because Reynolds, the installer of the subject guardrail, identified it as more likely than not to be an X-LITE. (Doc. 228, at 10.) Lindsay's contention that the subject guardrail is a TX is based on the absence of a triangle notch on the slider panel (Doc. 223-3, at 864–65), but one of Lindsay's corporate designees, Gerrit Dyke, also testified that it is possible Lindsay sold X-LITEs that did not have the triangle notch. (Doc. 223-1, at 259–60.)

[4] The Court discusses this fact question further in Section III.B.ii. of this Memorandum Opinion on Plaintiff's motion for partial summary judgment as to Lindsay's strict liability.

3. Failure to adequately document the testing program.

4. Failure to utilize most critical terminal configuration during full-scale crash testing.

5. Failure to communicate with the Federal Highway [Safety] Administration, state DOTs, or guardrail installers.

6. Failure to evaluate the performance of the system relative to any of the other tangent-energy-absorbing terminals on the market.

7. Failure to recognize unreliable performance.

(Doc. 204-6, at 2 (cleaned up).) He based this evaluation of the X-LITE's development on his experience in the industry, other experts' reports, industry publications, photographs of the crash scene, and more. (*See id.*)

Lindsay argues Dr. Sicking's opinion is inadmissible because: (1) "Dr. Sicking's opinion simply restates the testimony of Plaintiff's other design-defect expert, Dr. Kevin Schrum"; (2) "Dr. Sicking did not follow his own methodology in rendering his litigation-driven opinion in this case"; (3) "Dr. Sicking failed to consider other, obvious causes of Ms. Eimers's injuries"; and (4) "Dr. Sicking's opinion that the SKT or ET-2000 may have performed better than the X-Lite is speculative." (Doc. 204.)

a. Parroting Dr. Schrum

Lindsay argues Dr. Sicking's opinions should be excluded because the "sole basis" for his defect opinion is based on Dr. Schrum's calculation of the X-LITE's energy-dissipation rate. (*Id.*at 8.) "Under *Daubert*," Lindsay contends, "a trial court 'performing its gatekeeping function necessarily must ensure that [the expert] is not merely parroting the opinions of others.'" (*Id.* (quoting *In re Whirlpool Corp. Front-Loading Washer Prod. Liab. Litig.,* 45 F. Supp. 3d 724, 747 (N.D. Ohio 2014)).) But courts that have excluded experts for "merely parroting" the conclusions of others have done so on the basis that such testimony is unreliable under Rule 702

and the *Daubert* standard. *In re Whirlpool*, 45 F. Supp. 3d at 747 (N.D. Ohio 2014); *see, e.g.*, *Navarro v. Procter & Gamble Co.*, No. 1:17-CV-406, 2021 WL 868586, at *10 (S.D. Ohio Mar. 8, 2021) ("Because this portion of Sedlik's opinion lacks methodology demonstrating an expertised [sic] valuation of Navarro's photographs, it is not reliable as that term is used in *Daubert*."); *Johnson v. Williams,* No. CV 15-13856, 2017 WL 11318160, at *9 n.10 (E.D. Mich. Aug. 7, 2017). The courts' reasoning is, if an expert has no basis on which to form his own opinion but for another's conclusion, and no basis to evaluate the reliability or accuracy of the other's conclusion, he has used no reliable basis or methodology to form his opinion; instead, he is merely parroting the other's conclusion. *E.g.*, *Dura Auto. Sys. of Ind., Inc. v. CTS Corp.*, 285 F.3d 609, 614 (7th Cir. 2002) ("A scientist, however well credentialed he may be, is not permitted to be the mouthpiece of a scientist in a different specialty."); *In re Whirlpool*, 45 F. Supp. 3d at 741 ("Still, while Ostojic may not parrot or vouch for Taylor's analysis and opinions [because he is not an expert in Taylor's field], he is permitted to state that Taylor's conclusions dovetail with and support his own."); *St. Paul Fire & Marine Ins. Co. v. Nolen Grp., Inc.*, No. CIV.A.02-8601, 2005 WL 1168380, *9 (E.D. Pa. May 13, 2005) ("Cases have recognized that an expert may rely on the work of others, but the expert must be able to testify to the veracity of that work"); C. Wright & V. Gold, 29. *Federal Practice & Procedure: Evidence* § 6274 (1st ed.) ("A court also may reject expert testimony under Rule 703 where the witness relies on the findings of an expert in a different field and, because the witness is not an expert in that field, can only parrot and not critically evaluate those findings.").

Here, Dr. Sicking is not merely parroting. Unlike Dr. Schrum's opinions on design defects and causation, Dr. Sicking opines regarding the failure of Lindsay to use reasonable care in the design and testing process by failing to follow recommendations made in the NCHRP

Report 350, which Dr. Sicking co-authored, and other best practices. (Doc. 239, at 6; Doc. 223-1, at 60–94.) Dr. Sicking is not parroting Dr. Schrum, but merely incorporating one of Dr. Schrum's calculations into his own analysis on separate matters: "it is common in technical fields for an expert to base an opinion in part on what a different expert believes on the basis of expert knowledge not possessed by the first expert." *Dura Auto. Sys.*, 285 F.3d at 613.

Additionally, even if the inclusion of one of Dr. Schrum's calculations could be construed as parroting, Dr. Sicking has the expertise to evaluate the reliability and accuracy of Dr. Schrum's conclusions. Dr. Sicking, like Dr. Schrum, is an engineer who specializes in guardrail safety. Courts have previously excluded expert opinions that "parrot" other experts' conclusions only where the parroting expert has no expertise to evaluate the reliability of the other experts' conclusions—that is, where the parroting expert is in a completely different field than the other. *See, e.g.*, *Navarro,* 2021 WL 868586, at *10; *Johnson,* 2017 WL 11318160, at *9 n.10; *In re Whirlpool*, 45 F. Supp. 3d at 741; *St. Paul Fire*, 2005 WL 1168380, *9. In this case, because Dr. Sicking is an expert in the same field as Dr. Schrum, Dr. Sicking can evaluate the reliability of Dr. Schrum's conclusions on which he relies, so the reliability problem in other "parroting" cases in not a concern here, and the Court will not exclude Dr. Sicking's testimony on this basis.

b. Failing to Follow His Own Methodology

Lindsay next contends Dr. Sicking's testimony should be excluded as unreliable because, in forming his opinion, he did not follow his own methodology for testing the performance of a guardrail. (Doc. 204, at 9.) The argument confuses the purpose and content of Dr. Sicking's testimony. Dr. Sicking's report does not include opinions about the existence of structural design defects of the X-LITE, how the X-LITE performed in this crash, or whether any defect of

the X-LITE caused Hannah Eimers's injuries. (*See* Doc. 204-6.) Plaintiff offers Dr. Sicking's testimony to establish that Lindsay did not take reasonable care in its design and testing processes. (*Id.*) His conclusions pertain to what a reasonable guardrail designer and manufacturer would have done during design and testing to ensure its product's safety. (*Id.*) For example, he opines that Lindsay failed to adequately document its testing program and failed to adequately communicate with the FHWA, state DOTs, and installers. (*Id.* at 2.) Dr. Sicking's testimony is about Lindsay's *behavior*, not about the X-LITE's *performance* in the crash. (*Id.*)

Yet Lindsay argues that this testimony should be excluded because Dr. Sicking does not use his own methodology for testing guardrail *performance.* (Doc. 204, at 9.) Lindsay characterizes Dr. Sicking's methodology as: (1) analyzing the rigidity of the side structure of the vehicle to determine its ability to withstand a side impact, (2) identifying whether the subject vehicle has certain safety features like side airbags, and (3) considering additional factors such as type of surface, loose dirt, and compacted soil. (*Id.* at 9–11.) The methodology Lindsay describes is how Dr. Sicking would determine the performance of a particular guardrail in a particular accident, not how he would determine whether a designer or manufacturer used reasonable care. (*See* Doc. 239, at 8–9.) Because Dr. Sicking directs his testimony to Lindsay's behavior, not the X-LITE's performance, Lindsay's argument concerning methodology is no basis to exclude Dr. Sicking's testimony.

c. Failing to Rule Out Other Causes

Lindsay also argues that Dr. Sicking failed to rule out other causes of Hannah Eimers's injuries, such as weaknesses in the design of her vehicle, rendering his opinions unreliable. (Doc. 204, at 11–12.) "In order to be admissible on the issue of causation, an expert's testimony need not eliminate all other possible causes of the injury." *Jahn v. Equine Servs., PSC*, 233 F.3d

382, 390 (6th Cir. 2000) (citing *Ambrosini v. Labarraque,* 101 F.3d 129, 140 (D.C.Cir.1996) ("The fact that several possible causes might remain 'uneliminated' . . . only goes to the accuracy of the conclusion, not to the soundness of the methodology.")). Dr. Sicking does not need to eliminate all other possible causes of the injury for his testimony to be admissible. *See id.*

Even if he were required to eliminate other causes, Dr. Sicking's testimony *does*, in fact, address Lindsay's other proffered cause—known weaknesses in vehicle doors—by establishing how other, alternative designs of guardrails reduce (although do not eliminate) the risk of the guardrail penetrating the vehicle's doors. (Doc. 204-6, at 15–16.) Further, this argument does not even pertain to Dr. Sicking's testimony, because Plaintiff uses his opinions to show that Lindsay, in designing and testing the X-LITE, failed to use reasonable care to consider the circumstances of foreseeable highway crashes—including the inherent weaknesses in vehicles. (Doc. 239, at 9 ("Lindsay's own argument demonstrates that the inherent weakness[] of vehicles is a foreseeable problem that Lindsay should design its guardrails against, like Dr. Sicking testified. Thus, it is not a failure in Dr. Sicking's reasoning that he did not seek to place blame on any weakness in the Eimers vehicle.") Accordingly, this argument is not grounds to exclude Dr. Sicking's opinions.

d. Alternative-Design Theory

Finally, Lindsay argues that Dr. Sicking's opinion that Hannah Eimers may not have sustained injuries were she to have collided with an alternatively-designed guardrail is speculative, "*ipse dixit*," that takes too many analytical leaps. (Doc. 204, at 13–14.)

This argument fails because it goes to the credibility and accuracy of his opinion, not its reliability or relevance. Lindsay argues that Dr. Sicking has not supported his claim that the alternative designs, namely the SKT and ET-2000 guardrails, would have performed better in

this crash by empirical testing. (Doc. 204, at 14.) While Lindsay may have preferred Dr. Sicking to use a different method of empirical testing, and one that accounted for more specifics of Hannah Eimers's crash, Dr. Sicking nonetheless used reliable, scientific bases to form this opinion. He used a report from the FHWA-American Association of State Highway Transportation Officials ("AASHTO") Joint Task Force on Guardrail Terminal Crash Analysis, which revealed that both the SKT and ET-2000 could prevent fatalities during side impacts. (Doc. 204-6, at 5–6.) He analyzed the differences in designs between the X-LITE and the alternatives—especially that the alternatives have mechanisms to extrude the steel rails away from the vehicle, rather than direct them into the vehicle. (*Id.* at 6–7.) Dr. Sicking did not take analytical leaps to reach his conclusion. He merely summarized the data from other similar incidents, crash tests, and the FHWA-AASHTO report that the alternative designs did, in fact, perform better than the X-LITE in side impacts. (Docs. 204-6, 202-4.) Lindsay's argument, therefore, does not go to the reliability of the methodology but, instead, merely disagrees with the input data and conclusions drawn—both aspects of which are left to credibility determination. *See Ask Chemicals, LP v. Computer Packages, Inc.*, 593 F. App'x 506, 509 (6th Cir. 2014) (quoting *Daubert*, 509 U.S. at 595) ("As the *Daubert* Court articulated, the district court must concentrate 'solely on principles and methodology, not on the conclusions that they generate.'"); *In re Scrap Metal*, 527 F.3d at 529–30.

Dr. Sicking has sufficient bases for his opinions. Lindsay's exploration of the weaknesses of those bases may be a preview of an effective cross-examination, but it is not a reason to exclude the opinion. Lindsay's motion to exclude the expert opinions of Dr. Sicking (Doc. 203) is **DENIED.**

iv. Dr. Sri Kumar

Lindsay moved to exclude Dr. Sri Kumar's expert opinions for failing to meet the reliability standards of expert testimony. (Doc. 205.) Dr. Kumar is a biomechanical engineer who opined that, had "the guardrail not penetrated, travelled and encroached into the occupant compartment of Ms. Eimers, she would not have sustained . . . traumatic fatal injuries, and instead, would have survived [the accident], like the right front passenger" did. (Doc. 206-1, at 5, 32.)

Lindsay first argues that Dr. Kumar's opinion lacks scientific analysis and evidentiary support because it is based "solely" on the opinions of Dr. Schrum and Dr. Sicking. As discussed in the Court's analysis of the motion to exclude Dr. Sicking's testimony, it is permissible for an expert to rely on the findings of other experts as long as he does not simply parrot other experts' opinions. *See In re Whirlpool*, 45 F. Supp. 3d at 747. Furthermore, Dr. Kumar did not "solely" rely on the other experts' opinions, contrary to Lindsay's characterizations. Rather, he inspected Hannah Eimers's vehicle, incorporated the delta-V and kinetic-energy calculations, analyzed alterative designs, conducted an exemplar model/human surrogate study to understand the case-specific occupant-survival space, assessed the seatbelt-locking threshold, used peer-reviewed scientific literature and accepted methodology to determine occupant kinematics in Hannah Eimers's crash, calculated case-specific injury-probability values, applied the crashworthiness performance of 2000 Volvo 80 seat-belt system and side-airbag system in side crashes, and used these assessments to opine on the probable cause of fatalities and injuries in the scenario that the guardrail did not penetrate the vehicle. (Doc. 206-1.)

Therefore, Lindsay's arguments that Dr. Kumar's opinions are merely parroting the other experts or are "devoid of scientific analysis and evidentiary support" are unavailing. (Doc. 206, at 4–5.) To the extent Lindsay argues Dr. Kumar's opinions are based on data points not specifically tailored to the circumstances in Hannah Eimers's crash (*Id.* at 10–20), again, such an argument goes to the credibility and accuracy of the expert's opinion, not its reliability and relevance. *See In re Scrap Metal*, 527 F.3d at 529–530). Lindsay may, of course, challenge the credibility of experts' testimony at the trial, but the Court finds no basis upon which to exclude his testimony from the jury's consideration.

Lindsay next contends that Dr. Kumar's opinions are unreliable because he has only general experience in traffic safety, not any specialized knowledge in the design and performance of guardrail end terminals. (Doc. 206, at 5.) As with Lindsay's arguments against Dr. Sicking's testimony, Lindsay fails to address the actual purpose and scope of Dr. Kumar's testimony. He offers no opinions on the design or performance of the guardrails. Rather, he opines that, had the beam not penetrated the vehicle, Hannah Eimers would not have sustained the fatal injuries that she did—a matter squarely within his expertise as a biomechanical engineer. (Doc. 242, at 6–7.) Dr. Kumar is transparent that he is not an expert in alternative guardrail design or guardrail performance, and he does not opine on those matters. Rather, he notes that his testimony, when combined with the other experts' testimony properly confined to their expertise, contributes to the Plaintiff's overall theory of the case that: 1) the X-LITE was defective because several design features combined to make it unable to reliably dissipate energy upon impact and this failure caused the beam to penetrate the vehicle (Dr. Schrum's expertise), 2) had Lindsay used reasonable care in its design and testing processes, it could have used different designs to minimize the risk of penetration (Dr. Sicking's expertise), and 3) had the

beam not penetrated the vehicle, Hannah Eimers would not have sustained the fatal injuries she did (Dr. Kumar's expertise). (*See* Doc. 242, at 6–8.)

Despite Lindsay's consistent attempts to characterize the scope of each expert's opinions to include opinions of the other experts, each expert properly opines on his own area of expertise. The fact that an expert's opinions build on or rely on the opinions of another expert is no reason to exclude them at this point in litigation. Of course, if, at trial, an expert attempts to opine on matters outside his expertise, the Court will entertain objections pursuant to Rule 702. Accordingly, Lindsay's motion to exclude the expert opinions of Dr. Sri Kumar (Doc. 205) is **DENIED.**

v. Michael McCort

Lindsay moved to exclude the expert opinions of Michael McCort. (Doc. 208.) Plaintiff retained McCort as an expert in accident reconstruction to testify as to the crash characteristics in this case. (Doc. 244, at 6.) McCort concluded:

- The Volvo was traveling north on Interstate 75 prior to the crash.
- The Volvo departed the left side of northbound Interstate 75, toward the center median, approximately 159 feet upstream of the guardrail.
- Ms. Eimers steered right, and the Volvo transitioned to a driver-side-leading yaw, which progressed until the driver's door impacted the guardrail impact plate.
- Impact occurred rearward of the driver's door centerline. The impact force was to the left and aft of the center of gravity which induced a counterclockwise post-impact rotation.
- The Volvo was traveling approximately 70 MPH at impact with a vehicle heading of 45 degrees clockwise and a velocity vector of 3–4 degrees clockwise, with respect to the guardrail.
- The impact plate and rail #1 penetrated the occupant compartment, fatally striking Ms. Eimers and ultimately pinning her against the right rear passenger seatback. As the vehicle continued along the guardrail, rails #2–#3 also entered the occupant compartment, stacking behind rail #1.

- The Volvo came to rest approximately 57 feet downstream of its collision with the impact plate, facing north.

(Doc. 209-1, at 11–12.) McCort based these opinions on the Tennessee Electronic Traffic Crash Report, State of Tennessee Department of Transportation Memorandum, Subject: Lindsay XLite End Terminal (10/26/2016), crash scene and crash site images, images of the subject guardrail, FARO scan data of the crash site taken by Tyler Kress of Best Engineering Inc., industry publications, inspection of the crash site, vehicle, and guardrail, and analysis of several other similar incidents ("OSIs"). (*Id.* at 3.) Lindsay asserts that his testimony should be excluded "regarding his calculation of Delta-V [change in velocity], and his usage of OSIs ["other similar incidents"] in calculating the speed of the Eimers vehicle." (Doc. 209, at 6.)

Lindsay's first criticism of McCort's opinion is that his Delta-V calculation relies on Dr. Schrum's calculation of the average energy-dissipation rate of the guardrail, which Lindsay challenged as contrary to actual test results. (*Id.* at 7.) As the Court has already found, Dr. Schrum's opinion is reliable and, therefore, admissible. (*See supra* Section II.B.ii.a.) As discussed above, Lindsay's criticisms of Dr. Schrum's testimony deal with its credibility and accuracy, not reliability and relevance, because it takes issue with the kinds of data points selected rather than the methodology or empirical basis. Similarly, Lindsay's problem with McCort's opinion also concerns its credibility.[5]

[5] Lindsay states in a footnote, "Dr. Schrum's calculation deviates from the X-Lite's performance in crash tests, which are a *more reliable* predicator of real-world outcomes than Dr. Schrum's hypothetical calculations." (Doc. 209, at 7 n.15.) This statement underscores the Court's point that Lindsay's criticisms go to credibility and accuracy—Lindsay is not concerned that Dr. Schrum's or McCort's calculations are entirely and inherently unreliable, but that Lindsay would have chosen "more" accurate predictors. At the *Daubert* stage, the Court's role is to gatekeep unqualified experts, unreliable methods, and/or irrelevant opinions, not to resolve disputes over which expert's data is most *compelling*—that is the role of the factfinder. *See Superior Prod. P'ship v. Gordon Auto Body Parts Co., Ltd.*, 784 F.3d 311, 323 (6th Cir. 2015) (quoting *In re Scrap Metal*, 527 F.3d at 529) (reliability—distinct from "credibility and accuracy"—focuses on the methodology employed rather than the conclusions drawn); *Daubert*, 509 U.S. at 595.

The second basis on which Lindsay seeks to exclude McCort's opinion is his reliance on other similar incidents that "he previously testified were, not only not substantially similar to the Eimers crash, they were too different from the Eimers crash because of the differentiation between frontal and side impacts." (Doc. 209, at 8–9.) McCort's deposition testimony from other litigation that Lindsay cites does not contain any admission from McCort that Eimers's crash was too different to be included with frontal OSIs. Instead, his testimony reads:

> Q. Is there some reason why the Eimers vehicle—the Eimers incident is not listed as other similar incidents?
>
> A. **Well, it probably could be.** This is another incident where the velocity vector is straight down the guardrail, highway speed penetrates the vehicle. But it's a little more subtle for a jury to understand the difference between a velocity vector and heading angle of the vehicle. So the OSIs are meant to be kind of the ten best easiest to understand, easiest to prevent—present and the ones that we have information that we can —that we can use.

(Doc. 209-4, at 4 (emphasis added).) As the testimony shows, McCort did not testify that the Eimers incident was too different from the frontal impact at issue in that litigation to be included in the OSI calculation; to the contrary, he testified it likely could have been included. (*Id.*) McCort simply used his judgment to find that it would not be as easy to explain to the jury.

To be sure, Lindsay's briefings have made the Court intimately aware that frontal impacts are different than side impacts due to inherent weakness in vehicle doors. Lindsay attempts to use that fact, and the other experts' testimony, as a basis for excluding McCort's opinion. (*See* Doc. 209, at 9.) However, the relevance of the weakness in the door depends on the context of the opinion. Side-door weakness was relevant to Dr. Schrum's testimony because he opined on the design defects leading to poor energy dissipation which, he concluded, caused the guardrail to puncture the vehicle door. (Doc. 202-2, at 2.) It was also relevant to Dr. Sicking's opinions on Lindsay's level of care in designing the X-LITE, given the fact that side impacts into

guardrails are foreseeable. Door weakness is not relevant to McCort's opinion, however. His expert report reconstructs the pre-impact velocity of the vehicle, the velocity vector relative to the guardrail, the vehicle heading relative to guardrail, the number of posts involved and downed posts, the length of the damaged guardrail, the total distance the vehicle traveled after impact, and the distanced engaged with the guardrail. (Doc. 209-1, at 6.) Door weakness does not affect any of these metrics. For example, the total kinetic energy of the impact is calculated using the total mass and velocity of the vehicle, and it remains the same no matter where, on the vehicle, the impact occurs. (Doc. 244-6, at 7–8.)

McCort explained this in his deposition and noted that Lindsay's accident-reconstruction expert, Dr. Parker, uses the same approach, without regard to the vehicle's location of impact:

> Now, what Dr. Parker did was interesting in that he—he used the actual test data, and he got that through Mr. Bullard. So he is using the test as if this was a straighton impact, which would support, you know, what I'm saying here. It doesn't matter to the guardrail how you're doing it.
>
> . . .
>
> [W]e could come up with any number of reasons to try and exclude these all as OSI's. I think that for me in recon in the physics of it, it's all the same. It's all a mass hitting a system that's supposed to manage the energy as it moves along the rail.

(*Id*. at 3, 8.)

If Lindsay believes that the location of impact—the driver-side door—should have factored into McCort's analysis, it may challenge his credibility at trial on that basis, but it is not within the Court's gatekeeping role to exclude his opinion now. *See In re Scrap Metal*, 527 F.3d at 529–30. Accordingly, Lindsay's motion to exclude the expert opinions of Michael McCort (Doc. 208) is **DENIED**.

vi. Dr. Marthinus van Schoor

Lindsay moved to exclude the expert opinions of Dr. Marthinus van Schoor. (Doc. 210.) Plaintiff retained Dr. van Schoor, a mechanical engineer, to opine on design defects in the X-LITE. (Doc. 243, at 8.) Dr. van Schoor opines:

1. The subject X-Lite was developed, manufactured, and sold by Lindsay Corporation, Barrier Systems, and Lindsay Transportation Solutions.

2. The subject crash circumstances (vehicle kinetic energy/weight/speed/angle at impact) were foreseeable and predicted/tested for under NCHRP Report 350 standards.

3. The X-Lite end terminal's energy absorption method (friction) is inadequate, unreliable, and not- repeatable to stop vehicles in a controlled manner during foreseeable collisions.

4. The X-Lite end terminal's impact head is defectively designed as it lacks sufficient strength, weight, connection to the w-beam panels, size, and vehicle engagement.

5. The subject X-Lite is defective in design because, at the time it left the control of Lindsay, the foreseeable risks associated with its design exceeded the benefits associated with that design.

6. Lindsay was aware of the defects in the design of the X-Lite prior to the Eimers crash, based on developmental crash testing, in-service failures, basic engineering analysis, and computer modeling.

7. Design defects of the subject X-Lite, individually and jointly caused the product to fail in the Eimers crash.

8. At the time the subject X-Lite left the control of Lindsay, practical and technically feasible alternative designs were available that would have prevented the fatal injuries sustained by Ms. Hannah Eimers, that would not impair the usefulness or intended purpose of the product.

9. It is not merely my opinion that the X-Lite fails; rather, this highway safety product fails in an unreasonably dangerous manner by promoting the very intrusion/penetration/occupant interaction it is intended to prevent when design fixes would have mitigated/avoided altogether.

10. There are no reasons, other than financial gain, for the modifications of the successful and well performing X-Tension to the X-Lite.

(Doc. 213-1, at 61.) Dr. van Schoor based his opinion on inspection of the X-LITE, other experts' reports, the Tennessee Electronic Traffic Crash Report, crash scene photographs, accident reconstruction techniques, industry publications, and more. (*Id.*)

Lindsay seeks to exclude Dr. van Schoor's opinion first on the basis that he is unqualified because he does not have specialized experience or research regarding the design of guardrail end terminals or roadside safety outside of litigation. (Doc. 211, at 4–10.) Lindsay is correct, and Dr. van Schoor readily admits, that all of his experience and studies in guardrail design and roadside safety have been in anticipation of litigation. (*See id.* at 7–9.) However, his experience was not all gained in anticipation of *this* litigation, and he also has specialized expertise in energy-absorbing hardware. *See Johnson v. Manitowoc Boom Trucks, Inc.*, 484 F.3d 426, 434 (6th Cir. 2007) ("[A]n expert who testifies based on research he has conducted independent of the litigation provides important, objective proof that the research comports with the dictates of good science."). Dr. van Schoor has designed and tested energy-absorbing hardware for NASA and the U.S. Army and Navy. (Doc. 243, at 5 (citing Doc. 213-1, at 3).) While he has not developed guardrail-specific energy-absorbing hardware, the mechanical-engineering expertise in energy-absorbing safety products is highly relevant to this case because the Plaintiff's key design-defect contention is that the X-LITE's energy-absorption mechanism is defective. Accordingly, Lindsay's argument that Dr. van Schoor is unqualified and that his research has been developed solely for litigation is unavailing given his independent expertise in mechanical engineering of energy absorption.

Lindsay next argues Dr. van Schoor's theory of the impact head's defect is not reliable or relevant, because it is based on a finite element analysis ("FEA") and no physical testing of the impact head. (Doc. 211, at 10.) The plaintiff-appellant in *Coffey v. Dowley Manufacturing, Inc.*

was injured while using an automotive-repair tool when the "studs" securing the "cross piece" to the "arms" of the tool failed, causing the "jaws" of the tool to strike him. 89 F. App'x 927, 928 (6th Cir. 2003). The plaintiff-appellant's expert used a finite element analysis "to determine the torque that would be required to fracture the studs." *Id.* The Sixth Circuit affirmed the exclusion of the expert opinions as unreliable because the expert performed the FEA without physical testing, admitted the results of his FEA were incorrect and abandoned them, used "guesstimations" to come up with input data, could have easily performed actual experiments himself, and stated he was not an expert in FEA. *Id.* at 930–32. Lindsay analogizes the expert's opinion in *Coffey* to Dr. van Schoor's opinion in this case in that he performed an FEA without physical testing. (*See* Doc. 211, at 10–13 (citing *id.*).) However, Plaintiff appropriately distinguishes *Coffey*, in that physical testing was not a readily-available option in this case, and Dr. van Schoor stands by his results, unlike the *Coffey* expert. (Doc. 243, at 11–12.)

The Court, however, does note the limitations of an FEA as a methodology, but Lindsay does not cite to any portion of Dr. van Schoor's report in which he affirmatively opines that the FEA proves that the defect in the impact head *caused* Hannah Eimers's injuries or the failure of the guardrail in the crash. (Doc. 211, at 10–14); *see Coffey*, 89 F. App'x at 931. Rather he recognizes the FEA's limitations and opines that the FEA is merely evidence of the X-LITE's defective design:

> Thus, my opinion that simple linear analyses provide[] evidence that the strengths of Impact Plate/W-beam structures are grossly inadequate stands[,] and it is supported by the results of the nonlinear FEA model. This model includes two nonlinearities[:] a nonlinear plasticity material model and nonlinear large deformations.

(Doc. 225-2, at 55.) This limitation on the scope of the opinion does not render it irrelevant, because, in combination with the other, admissible expert opinions and evidence to be presented,

the FEA evidence on the inadequacy of the impact head has a tendency to make the existence of a defect more probable. Therefore, Dr. van Schoor's opinion on the impact head, though based on an unconfirmed FEA, is admissible when confined to the scope he presented in his report.

Lastly, Lindsay argues Dr. van Schoor's testimony that alternative designs may have performed better than the X-LITE is speculative, and therefore unreliable, because it is not based on "objective testing," does not use similar-enough crash comparisons, and "cherry-picks" his data points. (*See* Doc. 211, at 14–21.) The content of this argument is substantially the same as the ones it advanced against Dr. Schrum, Dr. Sicking, and Dr. Kumar's opinions, and it fails for the same reason—the criticisms pertain to credibility and accuracy, not reliability and relevance, because they take issue with the kinds of data points selected rather than the methodology or empirical basis. *See In re Scrap Metal*, 527 F.3d at 529–30. Accordingly, Lindsay's motion to exclude the expert opinions of Dr. Marthinus van Schoor (Doc. 210) is **DENIED**.

III. MOTIONS FOR SUMMARY JUDGMENT

A. Standard of Law

Summary judgment is proper when "the movant shows 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). The Court views the evidence in the light most favorable to the nonmoving party and makes all reasonable inferences in favor of the nonmoving party. *Matsushita Elec. Indus. Co., Ltd. v. Zenith Radio Corp*., 475 U.S. 574, 587 (1986); *Nat'l Satellite Sports, Inc. v. Eliadis Inc*., 253 F.3d 900, 907 (6th Cir. 2001).

The moving party bears the burden of demonstrating that there is no genuine dispute as to any material fact. *Celotex Corp. v. Catrett*, 477 U.S. 317, 323 (1986); *Leary v. Daeschner*, 349 F.3d 888, 897 (6th Cir. 2003). The moving party may meet this burden either by affirmatively

producing evidence establishing that there is no genuine issue of material fact or by pointing out the absence of support in the record for the nonmoving party's case. *Celotex*, 477 U.S. at 325. Once the movant has discharged this burden, the nonmoving party can no longer rest upon the allegations in the pleadings; rather, it must point to specific facts supported by evidence in the record demonstrating that there is a genuine issue for trial. *Chao v. Hall Holding Co., Inc*., 285 F.3d 415, 424 (6th Cir. 2002).

At summary judgment, the Court may not weigh the evidence; its role is limited to determining whether the record contains sufficient evidence from which a jury could reasonably find for the non-movant. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248–49 (1986). A mere scintilla of evidence is not enough; the Court must determine whether a fair-minded jury could return a verdict in favor of the non-movant based on the record. *Id.* at 251–52; *Lansing Dairy, Inc. v. Espy*, 39 F.3d 1339, 1347 (6th Cir. 1994). If not, the Court must grant summary judgment. *Celotex*, 477 U.S. at 323.

B. Analysis

i. Plaintiff's Motion for Partial Summary Judgment as to Lindsay Defendants' Affirmative Defenses Regarding Formet

Plaintiff argues that the Court should grant partial summary judgment as to Lindsay's affirmative defenses "seeking to place liability onto Formet for Plaintiffs' injuries because Lindsay has failed to identify any negligent acts committed by Formet in this case."[6] (Doc. 150,

[6] Plaintiff seeks summary judgment on "any and all" affirmative defenses seeking to shift liability to Formet. Plaintiff states in a footnote:

> Many of the Lindsay Defendants' Affirmative Defenses appear duplicative and ambiguous. For the purposes of this Motion, the Plaintiff simply seeks Summary Judgment as to any and all Affirmative Defenses, and/or just their subparts, submitted by the Lindsay Defendants that purport to shift any liability to Formet. It appears that ¶¶ 118, 119, 122, 123, 124, and 126 fall into that category.

at 3.) Lindsay has, indeed, failed to maintain a comparative-fault affirmative defense because it has not alleged that Formet was negligent in any way.

Tennessee Rule of Civil Procedure 8.03 governs the comparative-fault affirmative defense. "Because comparative fault is an affirmative defense, a defendant who raises the defense is required to prove a prima facie case of negligence against the nonparty he contends was negligent." *Free v. Carnesale*, 110 F.3d 1227, 1231 (6th Cir. 1997). Thus, "a jury can apportion fault to a nonparty only after it is convinced that the defendant's burden of establishing that a nonparty caused or contributed to the plaintiff's injury has been met." *Carroll v. Whitney*, 29 S.W.3d 14, 21 (Tenn. 2000). "Rule 8.03 permits this blame shifting, but it requires the party who desires to assert comparative fault to first make known the facts constituting such a defense as well as the identity of other persons alleged to be tortfeasors." *Parsons v. Wilson Cnty.*, No. M201400521COAR3CV, 2015 WL 5178601, at *4 (Tenn. Ct. App. Sept. 3, 2015).

Where a defendant asserting a comparative-fault defense does not identify or provide evidence to support a finding that the nonparty committed a negligent act that caused the plaintiff's injury, courts have held such a defendant cannot maintain the defense. *See Carlen v. Jackson*, No. M2000-02564-COA-R3CV, 2001 WL 1090513, at *3 (Tenn. Ct. App. Sept. 19, 2001) (granting partial summary judgment to the plaintiff as to the defendant's comparative fault defense) ("The record reveals that the defendant had no basis for asserting fault against General Motors and Carlen Motors, Inc., and therefore had no basis for the affirmative defense."); *Free*,

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(Doc. 150, at 2 n.3.) However, the parties focus their briefings exclusively on the defense of comparative fault. Accordingly, the Court construes this motion as a motion for partial summary judgment as to the affirmative defense of comparative fault imputing liability to Formet. For the reasons set forth in this section, Lindsay will not be permitted to present a comparative-fault defense at trial but may present evidence that Formet manufactured the subject guardrail.

110 F.3d at 1231 (holding the district court erred by instructing the jury on comparative fault where there was insufficient evidence) ("The pleading does not even state affirmatively that a nonparty was at fault. It offers merely the following conditional statement: '*If* there was a failure to monitor and evaluate circulation to the foot, this was not a failure on the part of Dr. Carnesale.' . . . More important, the answer fails to set forth any facts that could constitute negligence on the part of any nonparty.").

In this case, Lindsay cannot support a comparative-fault defense, because it has not provided any evidence suggesting that Formet was negligent in manufacturing the TX, or that Formet's negligence caused Hannah Eimers's injuries in any way. The argument Lindsay makes to support its comparative-fault defense is only that Formet manufactured the subject guardrail, not Lindsay. (*E.g.*, Doc. 215, at 2.) Therefore, Lindsay argues, *if* there was any negligence in the manufacturing, it was Formet's, not Lindsay's. (Doc. 215, at 4–5.) Such an argument does not support a comparative-fault defense; it merely states Lindsay's belief that Plaintiff has mistaken the identity of the manufacturer. *See* Tenn. R. Civ. P. 8.03; *see, e.g.*, *Carroll*, 29 S.W.3d at 21; *Carlen*, 2001 WL 1090513, at *3; *Free*, 110 F.3d at 1231. Lindsay may argue and present evidence at trial that Formet, not Lindsay, was the manufacturer of the subject guardrail, and the jury may agree. But without identifying any negligent act by Formet, Lindsay cannot sustain a comparative-fault affirmative defense. Accordingly, Plaintiff's motion for partial summary judgment as to Lindsay Defendants' affirmative defenses regarding Formet (Doc. 150) is **GRANTED**.

ii. Plaintiff's Motion for Summary Judgment as to Lindsay's Strict Liability

Plaintiff argues that the Court should grant partial summary judgment to establish that Lindsay is strictly liable for any defects in the subject guardrail because of its role in designing the X-LITE guardrail system. (Doc. 151, at 1–3.)

Under the Tennessee Products Liability Act ("TPLA"), Tenn. Code Ann. § 29-28-101, *et seq.*, the designer of a product is considered a "manufacturer" of the product, § 29-28-102(4), and may be liable for personal injury or property damage caused by the product if it was "'in a defective condition or unreasonably dangerous at the time it left the control of the manufacturer.'" *Fox v. Amazon.com, Inc.*, 930 F.3d 415, 422, 2019 WL 2896326 (6th Cir. 2019) (quoting Tenn. Code § 29-28-105(a)). When multiple entities in the line of product distribution (*e.g.*, designer, manufacturer, distributor) are alleged to be strictly liable for damages caused by a defective product, the entities are jointly and severally liable and are not entitled to have their fault apportioned amongst them. *See Owens v. Truckstops of Am.*, 915 S.W.2d 420, 430–33 (Tenn. 1996); *cf. Davis v. Komatsu Am. Indus. Corp.*, 42 S.W.3d 34, 42 (Tenn.), opinion after certified question answered, 19 F. App'x 253 (6th Cir. 2001) ("[W]e conclude that Tennessee law does support imposition of liability when a component manufacturer substantially participates in the integration of the non-defective component into the design of the final product, if the integration of the component causes the final product to be defective and if the resulting defect causes the harm.").

The record includes deposition testimony from multiple corporate representatives for Lindsay, emails between Lindsay employees, and expert disclosures for Lindsay's expert witnesses referencing Lindsay's design and development activities for the X-LITE, as well as engineering change notices detailing the design changes Lindsay made to the X-LITE. (Doc.

223-1, at 776–78, 783–86, 791–92, 809, 827; Doc. 223-2, at 5–7; Doc. 223-3, at 867–79.) Lindsay cites to no evidence that it did not design the X-LITE, only evidence that it did not design the Formet-manufactured TX. (*See* Doc. 216.) Thus, there is no genuine dispute of material fact that Lindsay designed and developed the X-LITE. Accordingly, if the subject guardrail is an X-LITE and it is defectively designed, Lindsay is strictly liable as a designer and developer under the TPLA. *See* § 29-28-102(4). If the subject guardrail is a TX, Lindsay could still be liable if it designed and developed the guardrail system even though it was manufactured and sold by Formet as the TX pursuant to Lindsay and Formet's sub-license agreement.[7] *See id.*

Nonetheless, genuine issues of material fact remain that preclude summary judgment. There is evidence in the record—including emails, deposition testimony, signatures on contracts, and marketing materials—which suggests that Lindsay was closely involved in designing or re-designing the X-LITE from the original concept design licensed to Lindsay by Armorflex. (Doc. 223-1, at 776–92, 832.) Lindsay does not dispute that it designed the X-LITE, but rather contends that the subject guardrail is a TX, and disputes that it was involved in the design of the TX. (Doc. 216, at 8–9.) Lindsay argues that the evidence Plaintiff cites to, establishing that Lindsay designed the X-LITE, only pertains to design activities taken *after* the April 2013 when the sub-license with Formet terminated. Therefore, Lindsay argues, it was only a designer or developer of the X-LITE, not the TX. (*Id.* at 9.) But the record evidence creates a genuine issue of fact as to whether Lindsay did, in fact, design and develop the TX guardrail system because, for example, Lindsay used the terms TX and X-LITE interchangeably in its marketing (Doc. 151, at 8), and there is an email exchange between Lindsay employees with the subject line "X-LITE

[7] The Court decides this motion assuming that the subject guardrail was a TX, viewing the facts most favorably to the non-moving party, Lindsay. There is, however, a dispute of material fact as to whether the subject guardrail was a TX or an X-LITE. *See infra.*

Product Development Team," dated November 16, 2010—years before its manufacturing sub-license with Formet ended. (Doc. 223-2, at 5.)

Viewing the evidence most favorably to Lindsay, there is a genuine dispute of material fact as to when it began to design and develop the X-LITE or whether Formet used those designs in manufacturing the TX. Accordingly, the Court must **DENY** Plaintiff's motion for summary judgment to establish Lindsay's strict liability as a designer or developer (Doc. 151).

iii. Plaintiff's Motion for Partial Summary Judgment as to Lindsay Defendants' Affirmative Defenses Regarding Reynolds and TDOT

Plaintiff argues the Court should grant partial summary judgment as to all of Lindsay's affirmative defenses that purport to shift liability onto Reynolds and/or TDOT. (Doc. 153, at 2.)

Plaintiff reiterates the same arguments in his motion as he made in his motion for partial summary judgment as to Lindsay's comparative fault affirmative defense regarding Formet (Doc. 150), which the Court granted above. *See supra* Section II.B.i. The crux of the issue in these motions, again, is whether Lindsay can maintain a comparative-fault affirmative defense against a third party without alleging that third party engaged in any negligent act. (*See* Doc. 153, at 7; Doc. 217, at 9; *see also* Doc. 150, at 8; Doc. 215, at 6–7.) The Court has already held that Lindsay cannot maintain such a defense with respect to Formet, and that analysis applies with equal force to TDOT and Reynolds, because Lindsay has similarly failed to identify any evidence suggesting that these parties engaged in any negligent act.

To avoid that conclusion, Lindsay argues that *it is possible that* "Reynolds installed a 'frankensteined' system, meaning they installed a system that utilized some components from a TX and some from an X-Lite, which would be in violation of the installation manuals provide [sic] Reynolds by Formet and Lindsay." (Doc. 218, at 2.) Lindsay, however, presents no evidence that Reynolds actually did, in fact, install a "frankensteined" system, or engage in any

other potentially negligent act. (*See id.*) Instead, Lindsay persists in its inconsistent position of asserting comparative-fault defenses without arguing or presenting evidence that any other party was at *fault*: "While it is Lindsay's clear and unambiguous position that the X-Lite is not defective or unreasonably dangerous, *if* a jury were to disagree, and *if* it were to find that Reynolds installed an X-Lite system or a 'frankensteined' system, it could also apportion fault to Reynolds." (*Id.* at 3 (emphasis in original).) Governing precedent does not allow Lindsay's approach, *see Free*, 110 F.3dat 1231, and Lindsay has failed to present any evidence that Reynolds or TDOT was at fault. (*See* Doc. 217.) Therefore, Plaintiff's motion for partial summary judgment on Lindsay's affirmative defenses regarding Reynolds and TDOT (Doc. 153) is **GRANTED.**

iv. Reynolds's Motion for Summary Judgment

Reynolds moved for summary judgment on the basis that "there is undisputed substantive evidence that Reynolds properly installed the guardrail," and that, "[a]ccordingly, there is no evidence upon which Reynolds can be held liable for the death of Hannah Eimers." (Doc. 159 at 2.) Lindsay opposed this motion on the same ground that it opposed Plaintiff's motion for summary judgment as to Lindsay's affirmative defenses regarding TDOT and Reynolds—that Reynolds either installed a TX, or that it could have "frankensteined" a system. (Doc. 218); *see supra* Section III.B.iii. However, Plaintiff conceded that Reynolds's motion should be granted. (Doc. 207.) Because Plaintiff agrees that there is no evidence to support a finding that Reynolds was negligent, there is no genuine dispute of material fact as to any claim against Reynolds, so the motion (Doc. 158) is **GRANTED**, and the claims against Reynolds are hereby **DISMISSED**. To the extent Reynolds's motion seeks partial summary judgment as to Lindsay's affirmative defense of comparative fault regarding Reynolds, the motion is **DENIED AS MOOT** in light the

Court's holding on Plaintiff's motion for partial summary judgment (Doc. 153) on the same matter. *See supra* Section II.B.iii.

v. Lindsay Corporation's Motion for Summary Judgment

Lindsay Corporation has moved for summary judgment, arguing that it was not sufficiently involved in the development, design, testing, manufacture, marketing, promotion, advertisement, distribution, or sale of the X-LITE to be liable under the TPLA. (*See* Doc. 220, at 3); Tenn. Code § 29-28-102(4), (6)–(8). Rather, it argues, one of Lindsay Corporation's subsidiaries, and the subsidiary alone, was involved with those activities for the X-LITE and there is no basis to pierce the corporate veil to impute liability on the parent, Lindsay Corporation. (Doc. 220.) However, there is significant evidence in the record suggesting Lindsay Corporation was, in fact, involved in the development, design, testing, manufacture, marketing, promotion, advertisement, distribution, or sale of the X-LITE. (Doc. 256.)

Lindsay Corporation attempts to construe this evidence as minimal—a single signature on a single contract. (Doc. 262, at 2.) It argues, "Plaintiff would have this Court believe that an individual signature of Gerrit Dyke, LTS's former Vice President of Engineering, "on behalf of 'Lindsay Corporation d/b/a Lindsay Transportation Solutions'" in the execution of a discrete consultant contract, is sufficiently indicative of involvement in the testing of the X-Lite." (*Id.*) But Plaintiff identified over a dozen documents in the record implicating Lindsay Corporation's involvement in the design, development, testing, and marketing of the X-LITE. (Doc. 256, at 7–9.) For example, the record contains an email setting a meeting with the subject line, "X-Lite and other systems offered by Lindsay Corp" (Doc. 258-4, at 24), an exchange about an Engineering Change Number for the X-Lite involving Lindsay Corporation (Doc. 258-2, at 49–50), an email from Lindsay Corporation Strategic Sourcing Manager (Bill Peterson) addressing

an "XLite Label" with the Lindsay Corporation President and others (*id.* at 22), and more. In addition to these documents, Scott Marion, President of Lindsay Corporation, testified regarding how he was personally and intimately involved in the marketing of the X-LITE. (Doc. 256, at 6–7 (citing Doc. 258-1, at 25–26).) Based on this evidence, a reasonable jury could find that Lindsay Corporation, rather than its subsidiary alone, was directly involved in the development, design, testing, manufacture, marketing, promotion, advertisement, distribution, or sale of the X-LITE. (*See id.*) Accordingly, the Court will **DENY** Lindsay Corporation's motion for summary judgment (Doc. 219).

vi. Lindsay's Motion for Summary Judgment

Lindsay offers five arguments as to why Plaintiff's claims against it should be dismissed:

> *First*, Plaintiff cannot prove a design defect claim because he cannot proffer admissible expert testimony on the prudent manufacturer test. *Second*, Plaintiff cannot prove causation for his claims because the record is devoid of evidence that an alleged defect with X-Lite caused Ms. Eimers's death. *Third*, Plaintiff has not developed any evidence of a manufacturing defect. *Fourth*, there is no evidence to support a failure to warn theory. *Fifth*, Plaintiff's punitive damages claim is unsupported by law.

(Doc. 222, at 9 (emphasis in original).)

a. Admissible Expert Testimony on the Prudent Manufacturer Test

Lindsay argues that Plaintiff's claims should be dismissed because he has failed to "present expert evidence that a reasonably prudent manufacturer, knowing of such a danger, would find that the X-LITE's risks exceed its benefits." (Doc. 222, at 10.) The TPLA defines "unreasonably dangerous" to mean that:

> a product is dangerous to an extent beyond that which would be contemplated by the ordinary consumer who purchases it, with the ordinary knowledge common to the community as to its characteristics, or that the product because of its dangerous condition would not be put on the market by a reasonably prudent manufacturer or seller, assuming that the manufacturer or seller knew of its dangerous condition.

Tenn. Code Ann. § 29-28-102(8). The Supreme Court of Tennessee has held that this statute establishes two tests for determining whether a product is unreasonably dangerous: 1) the consumer expectation test, and 2) the prudent manufacturer test. *Ray by Holman v. BIC Corp.*, 925 S.W.2d 527, 531 (Tenn. 1996). Under the consumer expectation test, "a product is not unreasonably dangerous if the ordinary consumer would appreciate the condition of the product and the risk of injury." *Id.* at 530. "Obviously, this test can only be applied to products about which an ordinary consumer would have knowledge. By definition, it could be applied only to those products in which '*everyday experience* of the product's users permits a conclusion . . . .'" *Id.* at 531 (quoting *Soule v. Gen. Motors Corp.,* 882 P.2d 298, 308 (1994) (emphasis in original)). "For example, ordinary consumers would have a basis for expectations about the safety of a can opener or coffee pot, but, perhaps, not about the safety of a fuel-injection engine or an air bag." *Id.*

The prudent-manufacturer test, on the other hand, requires expert testimony and "imputes knowledge of the condition of the product to the manufacturer. The test is whether, given that knowledge, a prudent manufacturer would market the product." *Id.* at 530. The Tennessee Supreme Court held that, when applying the prudent-manufacturer test, a risk-utility analysis is required:

> The determination of whether a product is unreasonably dangerous turns on whether, balancing all the relevant factors, a prudent manufacturer would market the product despite its dangerous condition. Naturally, a prudent manufacturer would consider usefulness, costs, seriousness and likelihood of potential harm, and the myriad of other factors often lumped into what plaintiff called a risk-utility test . . . .

Id. at 532 (citations omitted).

In this case, the Court finds that the prudent-manufacturer test applies because guardrails are more akin to airbags. *See Ray by Holman*, 925 S.W.2d at 531; *Sigler v. Am. Honda Motor Co.*, 532 F.3d 469, 485 (6th Cir. 2008) (addressing which test to apply as a question of law for the court to decide); *Brown v. Raymond Corp.*, 432 F.3d 640, 643 (6th Cir. 2005) (same).

Additionally, the record contains sufficient evidence to create a genuine issue of material fact as to whether Lindsay is liable under the prudent-manufacturer test. Lindsay's primary issue with the expert evidence is that the experts did not consider the X-LITE's benefits in their risk-utility analysis, but Dr. van Schoor's expert report explicitly acknowledges the benefits, and the fact that he applied a risk-utility analysis to come to his conclusion: "The subject X-Lite is defective in design because, at the time it left the control of Lindsay, *the foreseeable risks associated with its design exceeded the benefits* associated with that design." (Doc. 213-1, at 61 (emphasis added).) Because the jury will hear expert testimony on both sides of the risks and benefits of the guardrail there is a triable issue of fact on the prudent-manufacturer test. [8]

b. Causation

Lindsay next moves for summary judgment on the basis that Plaintiff has insufficient proof of proximate causation. (Doc. 15–20.) This argument tracks the same arguments Lindsay made on its *Daubert* motions, that the expert testimony on causation was unreliable, untested, or speculative, and so should be excluded. The Court has rejected those arguments, finding that Lindsay's issues with the methods and tests go to credibility and accuracy, rather than reliability and relevance. Because the determination of whether Plaintiff's evidence of causation is

[8] Lindsay also contends that Dr. Schrum and Dr. Sicking's opinions on the X-LITE's defects are untested speculation, and accordingly fails to create a triable issue. (Doc. 222, at 12–15.) The Court has already held that these expert opinions sufficiently and reliably raise a theory of defect. *See supra* Section II.B.ii–iii. Because it is not the Court's role to weigh the credibility of the evidence on summary judgment, the Court must deny Lindsay's motion on these bases.

sufficient would require a credibility determination, it is not appropriate for the Court to decide at summary judgment. *See Adams v. Metiva*, 31 F.3d 375, 384 (6th Cir. 1994) ("Upon a motion for summary judgment, the district court is not to make credibility determinations or weigh the evidence . . . ."). Accordingly, the motion is **DENIED** as to this basis.

c. Evidence of a Manufacturing Defect

Lindsay contends that Plaintiff's manufacturing-defect claim fails as a matter of law because Plaintiff has not presented any evidence of a manufacturing issue or defect. (Doc. 222.) Plaintiff concedes this point and "withdraws his claim for manufacturing defect . . . ." (Doc. 257, at 12.) Accordingly, Lindsay's motion for summary judgment (Doc. 221) as to the manufacturing-defect claim is **GRANTED**, and Plaintiff's manufacturing defect claim is hereby **DISMISSED** from the action.

d. Failure to Warn

Lindsay contends that it is entitled to summary judgment on Plaintiff's failure-to-warn theory because, Lindsay argues, it "expressly warned TDOT and its contractors of the X-Lite's performance limitations, of which both TDOT and its contractors were independently aware in their capacity as sophisticated users." (Doc. 222, at 21–22.) Plaintiff opposes the motion on the grounds that there is sufficient evidence in the record for a reasonable jury to determine that Lindsay's warning was not *adequate*. (Doc. 257, at 13.)

The TPLA provides that "[a] product is not unreasonably dangerous because of a failure to adequately warn of a danger or hazard that is apparent to the ordinary user." Tenn. Code Ann. § 29-28-105(d). "A warning is adequate as a matter of law if it is 'one calculated to bring home to a reasonably prudent user of the product the nature and extent of the danger involved in using the product.'" *Curtis v. Universal Match Corp*., 778 F. Supp. 1421, 1426 (E.D. Tenn.

1991), *aff'd sub nom. Curtis v. Pope & Talbot, Inc.*, 966 F.2d 1451 (6th Cir. 1992). "The adequacy or need for a warning should be evaluated in light of the expertise of the users of the product." *Pittman v. Upjohn Co.*, 890 S.W.2d 425, 430 (Tenn. 1994). "Where a product is marketed solely to professionals experienced in using the product, the manufacturer may rely on the knowledge that a reasonable professional would apply in using the product." *Id.* Because the X-LITE is marketed to state contractors and departments of transportation, rather than the general public, the adequacy of this warning is evaluated in light of the expertise of these professionals. *See Pittman*, 890 S.W.2d at 430. However, the warning may still be inadequate, even when the users are sophisticated professionals, if the warning is not calculated to communicate to those professionals the nature and extent of danger involved in using the product. *See Curtis*, 778 F. Supp. at 1426.

The only warning Lindsay points out to establish that it satisfied its duty to warn is the following provision on the first page of the X-LITE's installation manual:

> [In] [v]ehicle impact[] [conditions] that vary from [the] NCHRP Report 350 impact conditions for gating, re-directive end terminals may result significantly different [sic] than those experiences in testing.
>
> Vehicle impact characteristics different than or in excess of [sic] those encountered in NCHRP Report 350 testing (speed and angle) may result in system performance that may not meet NCHRP Report 350 evaluation criteria.

(Doc. 223-2, at 526.) Lindsay argues that TDOT and its contractors were also "independently aware [of the X-LITE's limitations] in their capacity as sophisticated users." (*Id.* at 21–22.) To support this contention, Lindsay cites to deposition testimony from TDOT official Paul Degges, in which he discusses that the FHWA testing parameters only evaluate crashes at 62.5 mph, which was a calculated risk taken by the industry in developing the parameters, given that crashes do occur at higher speeds. (*Id.* (citing Doc. 223-1, at 28–31).)

Here, there is a fact issue as to whether the provision in the installation manual adequately warned state contractors and departments of transportation of the dangers of using the X-LITE. The facts in the record include that the X-LITE failed a significant number of crash tests even under the parameters, Lindsay was aware of high installation-error rate, and other state departments of transportation had raised performance concerns—a reasonable jury could find that the warning was not reasonably calculated to bring home the extent of these dangers known to Lindsay. (*See* Doc. 257, at 13.) Accordingly, summary judgment will be denied as to this basis.

e. Punitive Damages

Lindsay also seeks summary judgment on Plaintiff's claim for punitive damages. (Doc. 222, at 23–25.) In Tennessee, a plaintiff may recover punitive damages if a defendant acted "(1) intentionally, (2) fraudulently, (3) maliciously, or (4) recklessly." *Hodges v. S.C. Toof & Co.*, 833 S.W.2d 896, 901 (Tenn. 1992). Punitive damages must be proven by clear and convincing evidence. *Id.*; Tenn. Code Ann. §§ 29-39-104(a)(1), (g)(1). Additionally, under the TPLA, "Punitive damages shall not be awarded in any civil action when a defendant demonstrates by a preponderance of the evidence that it was in substantial compliance with applicable federal and state regulations setting forth specific standards applicable to the activity in question and intended to protect a class of persons or entities that includes the plaintiff, if those regulations were in effect at the time the activity occurred." Tenn. Code Ann. § 29-39-104. This presumption applies where a manufacturer complied with a "baseline of quality deemed acceptable by some authoritative body." *Grant v. Kia Motors Corp.*, 185 F. Supp. 3d 1033, 1051 (E.D. Tenn. 2016).

The evidence in the record establishes that the X-LITE was approved under the NCHRP 350 and FHWA criteria. (*See, e.g.*, Doc. 223-1, at 32.) Plaintiff responded to Lindsay's motion for summary judgment on punitive damages by arguing that it put forth evidence that Lindsay did not, in fact, meet the compliance criteria. (Doc. 257, at 15–16.) Indeed, Plaintiff has presented evidence that the X-LITE failed testing before it passed, that Lindsay did not notify regulatory authorities about testing failures and made design changes simultaneously with the testing process, and other possibly unreasonable decisions which are detailed in Dr. Sicking's expert report. (*See id.*; Doc. 204-6.) But Plaintiff acknowledges, as he must, that the X-LITE did pass its crash tests and was approved by the FHWA, even if it was only "technically passing a bare minimum crash test (with disturbing interpretations and submissions of those test results)." (Doc. 257, at 16–17.) Accordingly, the Court finds that the statutory presumption applies, and Lindsay cannot be held liable for punitive damages. Therefore, Lindsay's motion for summary judgment as to punitive damages is **GRANTED.**

f. "Additional, Independent Reasons"

At the end of its motion, Lindsay makes several additional arguments for summary judgment under the catchall, "Plaintiff's Claims Fail for Additional, Independent Reasons." (Doc. 222, at 25.) The first of these is the argument that the X-LITE, or any guardrail in general, is not a "product" subject to strict products liability law. (*Id.*) The TPLA defines product as any "tangible personal object or good produced." Tenn. Code Ann. § 29-28-102(5). "Strict liability extends 'to any product sold in the condition, or substantially the same condition, in which it is expected to reach the ultimate consumer or user.'" *Adkins v. GAF Corp.*, 923 F.2d 1225, 1229 (6th Cir. 1991) (quoting Restatement (Second) of Torts § 402A comment d.) (emphasis added); *see also* Tenn. Code Ann. § 29-28-102(6) ("'Product liability action' for purposes of this chapter

includes all actions brought for or on account of personal injury, death or property damage caused by or resulting from the manufacture, construction, design, formula, preparation, assembly, testing, service, warning, instruction, marketing, packaging or labeling of *any product*.") (emphasis added). Both parties acknowledge that this issue is one of first impression, and the Court finds that the plain language of the TPLA, which allows for recovery with respect to "any product" or "good produced," does, indeed, cover guardrail end terminals—a moveable, manufactured good. Accordingly, the Court will not grant summary judgment on this basis.

Next, Lindsay argues that "Plaintiff's attempt to displace the NCHRP 350 standard with Tennessee state tort law is prohibited by the federal preemption doctrine." (Doc. 222, at 26–28.) The Court finds this argument plainly unavailing because Lindsay has not overcome the long-standing "presum[ption] that Congress does not cavalierly preempt state-law causes of action." *Medtronic v. Lohr*, 518 U.S. 470, 485 (1996). As Plaintiff points out, the NCHRP Report 350 is not a mandatory federal standard and the federal government has never intended it to be preemptory—the FHWA makes clear its standards are guidance and an FHWA letter does not state that hardware is "acceptable for use." (*See* Doc. 257, at 24–27.)

The last arguments Lindsay makes for summary judgment are that it is immune under Tennessee's "completed and accepted" doctrine and that it is immune as a federal contractor and agent of TDOT. (Doc. 222, at 29–30.) The "completed and accepted" doctrine only applies to state contractors, and Lindsay is not a state contractor that performed work to the specifications of the government; rather the state contracted with Reynolds, the installer. *See Wood v. Foster & Creighton Co.*, 191 Tenn. 478, 483, 235 S.W.2d 1, 3 (1950) ("It is a well settled rule in [Tennessee] that a contractor constructing a public improvement for a public authority is not liable to a private property owner for the resulting damage where the contractor acts in

accordance with the public authority's orders and is not itself guilty of negligence in the manner in which it does the work.") Additionally, the federal contractor immunity recognized by the Supreme Court in *Boyle v. United Technologies Corp.*, 487 U.S. 500, 511–12 (1988), does not apply, because Lindsay is not, and has never alleged that it is, a federal contractor. *Id.* (applying the doctrine only to contractors doing work for the federal government). Accordingly, the Court will not grant summary judgment to Lindsay on any of its "additional, independent reasons."

IV. CONCLUSION

For the above reasons, Plaintiff's *Daubert* motion as to Dr. Kim Collins (Doc. 145) and Lindsay's *Daubert* motion as to Dr. Kevin Schrum (Doc. 201) are **GRANTED IN PART** and **DENIED IN PART**. Lindsay's remaining *Daubert* motions (Docs. 203, 205, 208, 210) are **DENIED**. Plaintiff's motions for partial summary judgment as to Lindsay's affirmative defenses (Docs. 150, 153) are **GRANTED**. Plaintiff's motion for partial summary judgment to establish Lindsay's strict liability (Doc. 151) is **DENIED**. Reynolds's motion for summary judgment (Doc. 158) is **DENIED AS MOOT**. Lindsay Corporation's motion for summary judgment (Doc. 219) is **DENIED**. Lindsay's motion for summary judgment (Doc. 221) is **GRANTED IN PART** and **DENIED IN PART.**

SO ORDERED.

/s/ Travis R. McDonough
TRAVIS R. MCDONOUGH
UNITED STATES DISTRICT JUDGE