IN THE INTERMEDIATE COURT OF APPEALS OF WEST VIRGINIA

No. 22-ICA-208

Angel Ellen Tyler,
As Administrator of the Estate of Breanna Kristen Bumgarner,

Plaintiff-Respondent,

v.

Ford Motor Company,

Defendant-Petitioner.

On Appeal from Judgment
Circuit Court of Kanawha County, West Virginia (No. 18-C-182)
(The Honorable Joanna I. Tabit)

BRIEF OF FORD MOTOR COMPANY

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STATEMENT OF JURISDICTION

On June 2, 2022, the Circuit Court entered judgment against Ford Motor Company for $6,930,000 based on a jury verdict in favor of Plaintiff. III JA 644-645.[1] On September 28, 2022, the Circuit Court denied Ford's post-trial motion for judgment as a matter of law or in the alternative for a new trial. VIII JA 4156-4166. Ford timely filed a notice of appeal. VIII JA 4167-4197. This Court has jurisdiction under W. Va. Stat. Ann. § 51-11-4(b)(1).

ASSIGNMENT OF ERROR

1. Whether Ford is entitled to judgment as a matter of law or a new trial based on the Circuit Court's error in holding that West Virginia law does not require plaintiffs in negligent design cases to prove the existence of a feasible alternative design that would have eliminated the asserted risk of injury.

2. Whether Ford is entitled to a new trial based on the Circuit Court's error in allowing Plaintiff's expert to testify about and rely upon computer simulations that he agreed did not reflect substantially similar conditions to Ms. Bumgarner's crash, in conflict with *Ilosky v. Michelin Tire Corp.*, 172 W. Va. 435, 307 S.E.2d 603 (1983).

3. Whether Ford is entitled to judgment as a matter of law for additional reasons beyond the lack of feasible alternative design evidence because Plaintiff also offered no evidence at trial that would sustain a jury finding that Ford failed to exercise reasonable care when designing the 2014 Mustang's brake fluid reservoir or that Ford's design of the brake fluid reservoir was a proximate cause of Ms. Bumgarner's death.

[1] The citations to the joint appendix refer to the appendix volume and page number where each reference can be found.

INTRODUCTION

In 2016, Anna Errickson was 16 years old and driving 62 miles per hour down a winding, two-lane West Virginia road. When rounding a curve, Errickson drove off the side of the road, overcorrected, crossed over the center line and crashed into Breanna Bumgarner's 2014 Mustang which was traveling in the opposite direction. The closing speed of the crash was more than 100 mph and the resulting damage to the Mustang was severe. *See* VIII JA 3977 (photograph of post-collision vehicle). The crash led to a fire in the front of the Mustang that eventually progressed into the occupant compartment. Ms. Bumgarner was unable to exit the vehicle or be removed by bystanders and died.

Plaintiff, the administrator for Ms. Bumgarner's estate, filed strict liability and negligence claims against Ford and others in Kanawha County Circuit Court. Her claims against Ford alleged there were two design defects in the 2014 Mustang. Plaintiff first alleged that the design of the vehicle's occupant compartment was defective because it allowed too much crush, which prevented Ms. Bumgarner from exiting the vehicle after the crash. Plaintiff also claimed that the design of the brake fluid reservoir was defective because it was inadequately protected, which allowed the release of brake fluid that caused the fire.

At trial, Plaintiff chose not to call one of her previously designated brake fluid reservoir design experts, and instead Plaintiff focused nearly all of her evidence on the occupant compartment claim. After all evidence was in and the court agreed with Ford that Plaintiff was required to offer proof of a feasible alternative design for her claims, Plaintiff withdrew her strict liability claim just before closing arguments. She then convinced the Circuit Court to rule that her remaining negligent design claim did *not* require proof of a feasible alternative design, that Ford

was precluded from arguing otherwise in its closing argument, and that all references to a feasible alternative design would be removed from the jury instructions.

The jury returned a split verdict. It found that Plaintiff did not prove her negligent design claim as to the occupant compartment, but that Plaintiff did prove her negligent design claim as to the brake fluid reservoir. The jury allocated 99% of the fault for causing Ms. Bumgarner's death to Ford for its negligent design of the brake fluid reservoir, while finding Errickson's negligence in causing the crash only constituted 1% of the fault. This allocation resulted in an award of damages against Ford of $6,930,000.

The judgment should be reversed based on two legal errors that make West Virginia an outlier and distort longstanding precedent of the Supreme Court of Appeals. As the record reflects, the Circuit Court got these issues right before changing its mind. In addition, the Circuit Court erred in not recognizing that even setting aside these errors, the evidence at trial was insufficient to sustain the jury's verdict. These errors are explained in more detail below.

The Circuit Court's first legal error was holding that a negligent design claim under West Virginia law does not require proof of a feasible alternative design that would have avoided the harm. A negligent design claim, like a strict liability claim, asks whether a product is defective in that it is not safe for its intended use. To show a defect, a plaintiff must offer evidence of a feasible alternative design that a manufacturer could have used to avoid the risk of injury at issue. The fact that Plaintiff could not point to a feasible alternative design that Ford could have used and that would have protected the brake fluid reservoir in a crash of this severity is not surprising. It should have been dispositive. Put simply, Plaintiff's case was built on the notion Ford was negligent for not designing the brake fluid reservoir to do something that even *Plaintiff's expert* considered impossible: avoid all fires in all accidents, regardless of the severity of the accident.

The Circuit Court wrongly concluded that West Virginia law does not require proof of a feasible alternative design in a negligent design claim. The consequences of this error were twofold: The Circuit Court denied Ford judgment as a matter of law despite the lack of evidence of a feasible alternate design that would have avoided the injury here, and it pulled all references to a feasible alternative design requirement from the instructions resulting in jury instructions that did not correctly state West Virginia law. Plaintiff's failure to present any evidence of a feasible alternative design Ford could have used and that would have avoided a fire in an accident of this severity should have resulted in judgment in its favor. But at minimum, the court's instructional error entitles Ford to a new liability trial.

The second legal error came when the Circuit Court shifted course to allow Plaintiffs to present testimony about simulation evidence the court correctly held, pretrial, was inadmissible. In its pretrial ruling, the Circuit Court excluded certain simulations done by Plaintiff's design expert as irrelevant, inadmissible, and likely to mislead the jury because those simulations did not involve sufficiently similar circumstances to this crash. But at trial, the Circuit Court re-interpreted the meaning of *Ilosky* after Plaintiff again sought to present evidence about those excluded simulations. Even as the court continued to recognize that the simulations were not substantially similar to the crash and therefore presented a risk of unfair prejudice, it allowed Plaintiff's design expert to describe, testify about, and rely upon the very simulations that the court properly deemed inadmissible. The admission of such prejudicial and misleading testimony warrants a new trial.

The judgment should be reversed for a third reason as well. Separate and apart from whether West Virginia law imposes a feasible alternative design requirement as part of proving a defect, the trial record lacks any evidence that Ford failed to exercise reasonable care when designing the 2014 Mustang's brake fluid reservoir. If the 2014 Mustang was defective because

it sustained damaged in this crash, then every vehicle on the road in West Virginia is likewise defective. As the jury heard, the design for the 2014 Mustang complied with the state of the art and all regulatory safety standards. Because all evidence contradicted Plaintiff's claim that Ford failed to exercise reasonable care when designing the 2014 Mustang's brake fluid reservoir, a reasonable jury could not find otherwise. Nor could a reasonable jury conclude that Plaintiff proved proximate cause, because she did not identify a single design that would have eliminated the risk of a post-collision fire in this wreck.

Ford is entitled to judgment in its favor because Plaintiff failed to carry her burden to prove multiple essential elements of a negligent design claim, including the existence of a feasible alternative design. At a minimum, the Circuit Court's instructional and evidentiary errors were prejudicial and entitle Ford to a new trial.

STATEMENT OF THE CASE

A. Factual background.

1. *The accident.* In 2016, Anna Errickson was driving her parents' truck down a winding road in West Virginia. IV JA 2226:6-2227:9, 2228:19-2229:7. Errickson veered off the side of the road while trying to negotiate a downhill curve at approximately 62 mph. III JA 1059:64 -21; IV JA 1521: 4-20, 2228:19-2229:7, 2532:14-2533:14, 2350:23-2351:18. She overcorrected, crossed the center lane, and struck at a 40-degree angle a 2014 Mustang that was driving 57 mph in the opposite direction. III JA 1059:6-21; IV JA 2217:17-19, 2363:6-2364:17, 3144:21-23; VIII JA 3984; *see also* II JA 325 (depicting Kennett's reconstruction diagram); VII JA 3944 (photograph of accident scene); VII JA 3946 (similar). The closing speed of the two vehicles exceeded 100 mph, causing nearly four feet of crush in the front of the Mustang. III JA 1109:13-1111:6; IV JA 2216:6-2217:13, 2221:17-2223:5; VIII JA 3980. And the Mustang's change in

velocity ("Delta V") —a tool used to evaluate accidents—was 51 mph, which exceeded the 98th percentile for accidents that resulted in death or serious injuries. IV JA 2219:21-23, 3170:15-3171:2, 3171:10-3174:18.

Experts for Plaintiff and Ford recognized the need for vehicles to deform as a means to manage crash forces. IV JA 1818:4-1819:15, 2361:13-2362:2. In a frontal crash, these forces are "easier to manage" because the accident engages the "majority of the frame structure." IV JA 3146:5-9. In this accident, however, the 100 mph closing speed and 40-degree angle of impact created "very excessive forces," allowing Errickson's truck to override the Mustang's structure. IV JA 3146:10-16, 3148:20-3149:4. As a result of the impact geometry, the Mustang was required to manage and absorb far more of the energy in the accident. IV JA 2359:15-2363:16. Unsurprisingly, the 2014 Mustang suffered severe damage. *See, e.g.*, VIII JA 3977, 3978 (photographs of post-collision vehicle); VII JA 3956 (overhead photograph of post-collision vehicle). One of those photographs is reproduced here.

VIII JA 3977.

The brake fluid reservoir in the Mustang is attached to the master cylinder, which is bolted to the brake booster at the rear of the engine compartment on the driver's side—largely the same configuration and location used in all vehicles. IV JA 2841:9-2844:14, 2846:21-2849:4. According to Plaintiff's fire expert, the deformation in the front of the Mustang compromised the

reservoir, and brake fluid leaked, vaporized, and ignited, resulting in a post-collision fire that eventually reached the occupant compartment, where Ms. Bumgarner was trapped and died as a result of damage from the crash. III JA 903:20-904:3, 926:2-18, 1225:19, 1608:9-21.

2. *Plaintiff's suit.* Ms. Bumgarner's mother, Angel Tyler, as the administrator of her daughter's estate, filed suit against Errickson, her parents, and Ford. I JA 21-25. Relevant here, Plaintiff alleged that Errickson was negligent, her parents were vicariously liable as owners of the truck, and Ford was both strictly liable for and negligent in its defective design of the 2014 Mustang. I JA 19-22, 24.

3. *The 2014 Mustang*. At trial, it was undisputed that Ford complied with every applicable regulatory and industry standard when it designed the 2014 Mustang. IV JA 1911, 1918-1924, 2002. Plaintiff's expert conceded that no vehicle on the market can prevent a fire in all collisions, especially one at 100 mph closing speed, and that no manufacturer can prevent the release of brake and other engine compartment fluids in all crashes. III JA 1474, 1579-1580.

The 2014 Mustang was part of Ford's S197 program which included Mustangs manufactured and sold between model years 2005 and 2014. IV JA 1925:15-1926:3, 2783:18-2784:1, 2790:9-21, 2833:3-8. As required of all vehicles sold in the United States, the 2014 Mustang complied with all applicable Federal Motor Vehicle Safety Standards (FMVSS). This includes the federal brake system safety standard as well as safety standards for occupant crash protection and fuel system integrity standards, which require performance in frontal (30 mph into a rigid barrier) and side (30 mph impact by a moving barrier) crash tests. IV JA 1918-1922, 2002, 2838.

The 2014 Mustang similarly complied with industry crash test requirements. Plaintiff's design expert, Dr. Chandra Thorbole agreed that the Mustang did "great" in a crash test by the

National Highway Traffic Safety Administration's New Car Assessment Program (NCAP) where vehicles are crashed into a rigid barrier at 35 mph. IV JA 1911:17-20, 2002:18-24. The forces experienced in the crash in this case resulted in more than twice the energy than in the NCAP test. IV JA 2380.

Further, at the time the Mustang was designed and developed, the Insurance Institute for Highway Safety (IIHS) used a 40 percent offset/ 40 mph ("40/40") front crash test to evaluate vehicle performance. III JA 1162. During this time, Thorbole agreed the 40/40 crash test was "widely accepted as a good test of occupant compartment strength" and "front end crumple zone performance"—the very area where the brake fluid reservoir is located. IV JA 1930-1931. Thorbole and Plaintiff's accident reconstruction expert, Kelly Kennett, acknowledged that the Mustang passed with a "big compliance margin," and received the best rating offered by the IIHS on this test. III JA 1136-1137, 1162:14-1163:16, 1212; IV JA 1924:7-12.

It was undisputed that vehicle braking systems require a brake fluid reservoir and must comply with FMVSS 135. *See* IV JA 2838:2-2840:1, 2843:2-2847:19. Ford then presented unrefuted testimony that Ford followed standard practice and met federal safety standards by using an impact-grade polymer for its brake fluid reservoir—a material created to "resist fracturing or breaking apart," while allowing the fluid level to be checked without removing the reservoir cap. IV JA 2845:11-2846:5, 2846:11-20. And Ford placed the reservoir in the same location as "just about every application" across the industry. IV JA 2848:19-20. This area was well protected by several surrounding structures, resulting in excellent performance in the FMVSS, NCAP and 40/40 crash tests. IV JA 2850:1-2860:17. Indeed, no one identified a single one of these crash tests in which the Mustang's brake fluid reservoir was compromised.

Plaintiff did not identify any federal, public domain or industry crash or design standard for the brake fluid reservoir that Ford failed to meet. To the contrary, her expert Thorbole agreed that nothing in the FMVSS testing "indicated that [Ford] made the wrong decision in the materials that it identified." IV JA 1923:23-1924:6. He did not see any issues from the IIHS tests or NCAP testing, either. IV JA 1923-1924. And from a design perspective, no test could even produce the "kind of loading" necessary "to say one way or another whether it's defective or not" under these circumstances. IV JA 1923:16-18. Ford's engineering expert, Jon Olson, confirmed this view and added that "the fluid systems . . . were tested to the highest standards that existed at the time the S197 was in that strategic confirmation phase and ultimately up through its production." IV JA 2867:16-20.

B. The trial testimony.

The case proceeded to trial in May 2022. *See* I JA 10. Plaintiff presented evidence from an accident reconstruction expert (Kelly Kennett, III JA 1057:2-5); a fire and explosion analyst (Mike Schulz, III JA 1223:2-16); a forensic pathologist (Dr. Jonathan Arden, III JA 1595:14-23); an occupant-protection, biomechanics, and crashworthiness expert (Dr. Chandra K. Thorbole, IV JA 1819:16-1820:13; and several fact witnesses.

1. *Plaintiff's occupant compartment claim*. Plaintiff focused extensively on her claim that the occupant-compartment design in the 2014 Mustang was defective. She relied on Thorbole to prove this asserted defect. He testified that in his opinion, any vehicle that allows more than 2 to 3 inches of crush in its safety cage in *any* frontal crash scenario is defective. IV JA 1893:8-1894:23. Thorbole insisted that the only circumstances in which a vehicle could acceptably sustain more than 3 inches of crush would be if it was driven over a cliff or crashed into a barrier at 100 mph. IV JA 2145:2-2148:2. The jury rejected this claim. III JA 576-578.

2. *Plaintiff's brake fluid reservoir claim*. Plaintiff spent much less time at trial trying to prove her brake fluid reservoir claim. Indeed, Plaintiff declined to even call one of the experts on the design of Ford's brake fluid reservoir that she vehemently defended prior to trial, instead relying on Thorbole to testify about the brake fluid reservoir too. Thorbole testified that in the accident, the shock tower protecting the brake fluid reservoir in the 2014 Mustang went "backwards at a very high rate and it actually produced the failure of the brake reservoir and the brake cylinder." IV JA 1881:19-21. He did not offer an opinion that this design was defective. He did not criticize Ford's placement of the brake fluid reservoir. And he did not testify that other car manufacturers placed the reservoir in a different, safer location. IV JA 1819, 1891. Rather, Thorbole testified that Ford could have somehow better protected the vehicle's brake fluid reservoir. IV JA 1815:3-7.

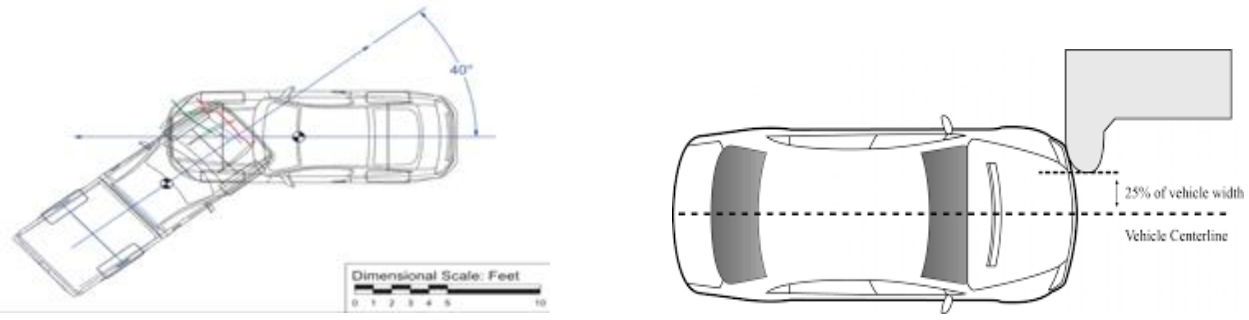
3. *Thorbole proposes adding a boron bar to the 2014 Ford*. Thorbole first suggested that Ford could have used a "high strength strut" made of boron steel that a particular Mercedes model placed between its shock tower and cowl panel. IV JA 1882:6-24. But, as Thorbole himself recognized, the high strength strut in the Mercedes vehicle *failed to protect the brake fluid reservoir in Mercedes' own crash test*. IV JA 2085:11-2086:4. It was thus not a feasible alternative design that Ford could have used to prevent the damage that occurred in the accident here. IV JA 2093:8-12 (Thorbole testifying that the "boron bar itself is not an alternative design"). Just the opposite: after Ford played the video of the Mercedes crash test at trial, Thorbole admitted that the steel strut "actually came loose," and that the brake fluid reservoir "toppled over" and "went tumbling around." IV JA 2084:11-13, 2085:17-18, 2086:1-9; VIII JA 3970-3972. Thorbole further conceded that he didn't know of a single Mercedes crash test where the steel strut actually

worked in the way that he suggested it might. IV JA 2086:15-2087:14. Eventually, Thorbole expressly agreed that the "boron bar itself is not an alternative design." IV JA 2093: 8-12.

Thorbole nevertheless attempted to show that the boron bar would have been effective in eliminating the risk of fire in this crash based on a computer simulation he conducted in which he "fully constrained" both ends of a boron steel strut to a Mustang's shock tower and cowl panel. IV JA 2097:1-9, 2098:6-7.

4. *Ford's attempts to properly limit Thorbole's testimony.* Before trial, Ford moved to exclude Thorbole's computer simulation and related testimony. II JA 323-335. Ford argued that the conditions Thorbole set for his simulations differed substantially from the conditions of Ms. Bumgarner's accident and were therefore inadmissible.

As Ford explained, Thorbole's simulations were rooted in his "hypothesis" that the crash configuration that occurred here, matched a small overlap, rigid barrier (SORB) crash test. In a SORB test, the vehicle is aligned with a rigid barrier that is offset to the left of the vehicle centerline by 25% and then the vehicle impacts a rigid barrier at 40 mph. II JA 326-327 (citing IIHS protocol). But that hypothesis conflicted with the testimony of Plaintiff's accident reconstruction expert that Errickson did not crash head-on into Ms. Bumgarner's vehicle, but rather crashed at a 40-degree angle.



II JA 327-328 (depicting Kennett's reconstruction diagram on the left and a diagram of the SORB configuration on the right).

In addition, Thorbole tested his hypothesis by altering a computer model that Ford had created for a 2013 Mustang simulating a 40/40 crash test: Ford's computer model consisted of a *40%* moderate overlap, *deformable* barrier crash configuration at 40 mph. But Thorbole changed it to a *25%* overlap, *rigid* barrier crash. IV JA 1745:15-19. He also shortened the leading edge of the barrier to reduce the radius at the impact point from 150 mm to 50 mm, II JA 328, and increased the speed of impact from 40 mph to 45 mph, IV JA 1745:20-1746:6. And finally, Thorbole created alternative designs that changed the materials and material properties for existing components and added components, including the strut from the shock tower to the cowl. IV JA 1747:12-21.

Ford cited unambiguous West Virginia law that evidence of an expert's tests or experiments are only relevant and admissible to prove what happened in a particular crash if "the essential conditions at the time of the experiment . . . [are] substantially similar to those existing under the occurrence" at issue. Syl. Pt. 16, *Ilosky*, 172 W. Va. 435, 307 S.E.2d 603. Ford argued that Thorbole's modifications rendered his simulations irrelevant and inadmissible to prove what happened in the crash at issue—and by extension, how an alternative design would have performed in that crash. II JA 332-334.

In a pretrial ruling, the Circuit Court agreed with Ford and excluded Plaintiff's simulation evidence. The court found that Thorbole "conducted computer simulations for the stated purpose of demonstrating that an alternative design would have prevented the injuries in this case" and that "Thorbole acknowledged that his computer simulations did not reflect conditions that were substantially similar to this crash." II JA 537-538. The simulation evidence thus violated the "well-settled" principle that evidence of tests and experiments are inadmissible unless "the essential conditions at the time of the experiment" are "substantially similar to those existing under the occurrence at issue." *Id.* (citing Syl. Pt. 16, *Ilosky*, 172 W. Va. 435, 307 S.E.2d 603). The

court additionally excluded Thorbole's simulations under West Virginia Rule of Evidence 403, concluding that "the use of these computer simulations could mislead and confuse the jury." II JA 538.

5. *The court revisits its pretrial ruling*. To Ford's surprise, Plaintiff's counsel announced at trial his intent to have Thorbole testify about his excluded computer simulations. IV JA 1738. Ford objected to this testimony as contravening the pretrial ruling. IV JA 1738:21-1739:16. Recasting its pretrial ruling, the Circuit Court agreed with Plaintiff. It ruled that Thorbole was free to discuss and offer opinions predicated on the excluded simulations so long as the actual simulations themselves were not admitted as trial exhibits. IV JA 1737:17-1739:18, 1740. In light of Ford's objection, the court allowed a proffer outside the presence of the jury wherein Thorbole again described all of the changes he made with respect to his modeling for purposes of the simulation. IV JA 1745-1748. He also acknowledged that he was using the simulations as evidence that his alternative designs "fixed" the problem with Ford's design of the brake fluid reservoir. IV JA 1889.

After hearing argument outside the presence of the jury on how to apply the West Virginia Supreme Court's decision in *Ilosky* here, the court took a recess to "go back and reread *Ilosky*." IV JA 1774:7-8, 21-22. The court then confirmed it was changing its reading of *Ilosky* and finding that *Ilosky* permits courts to admit expert testimony describing inadmissible simulations and just exclude the simulations themselves from being trial exhibits. IV JA 1774:23-1776:5. The court's about-face read a gaping loophole into *Ilosky* by differentiating inadmissible simulations from *testimony* about inadmissible simulations and then finding the latter relevant and admissible even if the former were irrelevant and inadmissible. The court's explanation was that even though Thorbole's simulations were inadmissible, IV JA 1740:10-22, 1768:12-16, he could still rely on

and testify about them because his testimony was less likely to "inherently . . . mislead [the jury]" than the simulations themselves. IV JA 1770:17-1772:4. Ford preserved a continuing objection. IV JA 1778:12-14.

6. *Thorbole's simulation testimony.* Thorbole then relied upon his simulations to propose an alternative design for the 2014 Mustang's brake fluid reservoir: a high-strength strut that is "fully constrained" to the vehicle's cowl and shock tower. IV JA 2096:21-2097:9. When Plaintiff's counsel asked Thorbole how the design would fare better than it did in the Mercedes crash test, Thorbole's answer was that you just "have to bolt it down" and "mak[e] sure that that load path is not going to pop out." IV JA 2097:1-4. Thorbole did not offer any materials or construction that could create this "permanent constrain[t]." IV JA 2098:7-14. He simply stated, "[i]n my simulations it worked. If you don't let the load path pop out, it's going to work." IV JA 2098:21-23.

The computer simulation was disconnected from reality. Thorbole's simulations resulted in a "permanent" connection between the boron bar and the vehicle only because Thorbole *programmed* the connection to be permanent. IV JA 2959:3-14. As Ford's expert explained, "[h]e's just telling the model that [the strut, the cowl, and the shock tower] go together and they cannot come apart . . . [r]egardless of the load." *Id.* To make such a permanent constraint would require an "infinitely strong" attachment—which is something that no existing material could provide. IV JA 2959:17-23. And even then, the Mustang's shock tower still made contact with the brake fluid reservoir in Thorbole's simulations. IV JA 2962:20-23.

C. Ford's motion for judgment as a matter of law.

At the close of Plaintiff's case, and again at the close of all the evidence, Ford moved for judgment in its favor on all claims. IV JA 2157:7-2193:4; 3359:8-3414:9; V JA 3578. Ford argued that both Plaintiff's strict liability and negligence claims required her to prove a design defect in the occupant compartment or the brake fluid reservoir. IV JA 2158:13-2159:11, 3360, 3398:18-3414:9. And to prove a design defect, Plaintiff had to prove that the 2014 Mustang was not reasonably safe for its intended use. IV JA 2158:13-17; *see Morningstar v. Black & Decker Mfg. Co.*, 162 W. Va. 857, 888-890, 253 S.E.2d 666, 683 (1979) (defining "defective" in strict liability case).

Ford explained that Plaintiff did not make this showing. She failed to present evidence that Ford's designs deviated from scientific and technical knowledge, customary design methods, or the design choices of other manufacturers. IV JA 2162:5-10. To the contrary, one of Plaintiff's experts testified that *no* manufacturer can do what Plaintiff wanted Ford to do here: design a leak-proof brake fluid reservoir or a vehicle that prevents fires at closing speeds of 100 mph. IV JA 2163:12-20.

With regard to the brake fluid reservoir claim, Ford additionally argued that Plaintiff failed to prove that there was a feasible alternative design that Ford could have used to eliminate the risk that caused Ms. Bumgarner's death. IV JA 2162:10-2163:3. Plaintiff's only proposed alternative—Thorbole's computer-generated steel strut that operates as a permanent constraint between the vehicle's cowl and shock tower—did not exist in the real world. IV JA 2164:8-2166:23, 3367:13-3368:6. Ford's mechanical and materials engineering expert (Mark Fleming) testified that Thorbole's computer simulation ignored the real-world properties of available materials in programming a "rigidly affixe[d]" boron bar. IV JA 2958-2959. Even then, the boron

bar in Thorbole's simulation was "greatly bent and distorted"; it experienced strains that far exceed boron's physical material properties in the non-computer-simulated real world. IV JA 2960-2962. As Ford argued, this failure to identify a design defect in the 2014 Mustang was fatal to plaintiff's strict liability and negligence claims. IV JA 2158:17-19, 3360:2-7, 3371:17-3372:4.

Ford also argued that it was entitled to judgment on Plaintiff's negligent design claim even if Plaintiff identified a design defect. IV JA 2172:19-23. For negligent design claims, the existence of a design defect is just one factor in a broader assessment of whether Ford exercised reasonable care when designing its 2014 Mustang. *See Morningstar*, 162 W. Va. at 883, 253 S.E.2d at 680 (negligent design claims impose higher evidentiary burden than strict liability in tort); IV JA 2159:5-11, 3361:18-21. One of Plaintiff's experts agreed that the 2014 Mustang complied with the state of the art and all relevant safety standards. IV JA 2162:2-9. Another of Plaintiff's experts agreed that if reasonable care meant car manufacturers had to design fire-proof vehicles, no manufacturer would meet that standard. III JA 1474, 1579-1580. Plaintiff also failed to offer proof of any negligence by Ford that proximately caused Ms. Bumgarner's death. IV JA 2159:5-2160:2, 2172:2-5, 3360:8-19, 3371:17-3372:5; V JA 3578. There was no evidence at trial that a fire could have been avoided after a crash of this severity if Ford designed the 2014 Mustang's brake fluid reservoir differently.

Ford's defense highlighted the shortcomings in Plaintiff's case. Its expert (Olson) agreed with Plaintiff's expert (Schulz) on a key point: It is impossible to design a fire-proof vehicle or a leak-proof brake fluid reservoir. Olson explained that some accidents are "so severe that a leak of either gasoline or some other liquid is going to happen and there's a potential for fire." IV JA 2828:24-2829:5. When asked whether there was "any way" for a manufacturer "to reasonably predict when and how that's going to occur," Olson testified:

> There is no way. I mean, there are infinite numbers of the way vehicles collide with whether it's another vehicle or a fixed object. They're infinitely variable. So what manufacturers do is develop, and along with the federal safety regulators, develop tests that help assess reasonably severe collisions and test to those so that they're repeatable in a way that you can assess and make design improvements if you need to.

IV JA 2829:6-17.

The court nevertheless concluded that there was evidence to submit both theories of defect to the jury and denied Ford's motion for judgment as a matter of law. IV JA 3382:7-11, 3415:1-3416:4.[2]

D. The charge conference and Plaintiff's change in strategy.

After the close of evidence, Ford and Plaintiff discussed their joint proposed jury instructions. On the strict liability claim, Plaintiff did not object to a proposed instruction that strict liability requires proof of a design defect element, III JA 622; IV JA 3463:19, and that proof of a feasible alternative design is a threshold requirement for establishing a design defect, III JA 623; IV JA 3463:20-21. The parties also agreed on an instruction about how to prove a feasible alternative design. III JA 624; IV JA 3465:10-24. On the negligent design instructions, Plaintiff maintained that she was not required to identify a design defect to prove that Ford failed to exercise reasonable care when designing the 2014 Mustang. IV JA 3400:6-3402:24, 3470:6-12. The Circuit Court rejected Plaintiff's argument and held that a finding of negligence could not occur absent proof of a design defect. IV JA 3415:2-3416:4. At the end of the conference, the Circuit Court concluded that the substance of the jury instructions was "all there"; the formatting just needed "to be tweaked and renumbered." IV JA 3505:16-17.

[2] The Circuit Court granted a directed verdict in Ford's favor on punitive damages. IV JA 3429:3-7.

After court adjourned for the day, presumably based on the jury instruction rulings, Plaintiff decided to drop her strict liability theory entirely and took the position that her remaining negligent design claims did not require proof of a feasible alternative design at all. V JA 3572:3-13. Plaintiff requested that the Circuit Court strike all instructions regarding strict liability and all references to a reasonable alternative design. V JA 3594:5-3597:12. She also sought to prevent Ford from making any reference to Plaintiff's lack of evidence showing a reasonable alternative design in closing argument. V JA 3583:21-17.

At oral argument the next morning, the Circuit Court acknowledged that a feasible alternative design is required in the "overwhelming majority of jurisdictions" for a negligent design claim. V JA 3573:3-7. It also noted (correctly) that a contrary approach "seems inconsistent with *Morningstar* [, 162 W. Va. 857, 253 S.E.2d 684,] and its progeny." V JA 3576:7-10. The court nonetheless deviated from that rule based on a 2017 federal court case, *Mullins v. Johnson & Johnson*, 236 F. Supp. 3d 940 (S.D. W. Va. 2017) (*Mullins II*), and agreed to remove from the jury instructions any requirement that Plaintiff prove a feasible alternative design in showing a defect for her negligent design claims. V JA 3583:9-13. Ford objected. V JA 3575:1-3576:3, 3579:12-3583:8, 2665:19-3584:7.

E. The jury's verdict.

The jury returned a split verdict. It found in Ford's favor on Plaintiff's occupant compartment defect claim, and it found in Plaintiff's favor on the brake fluid reservoir defect claim. III JA 644-645. It awarded Plaintiff $7 million in compensatory damages, and it allocated 1% of the fault to Anna Erickson for causing the accident and 99% of the fault to Ford. *Id.*

F. Ford's post-judgment motion for judgment as a matter of law or, alternatively, a new trial.

In its renewed motion for judgment as a matter of law or a new trial on the brake fluid reservoir claim, Ford again argued that negligent design claims require proof of a feasible alternative design and that the trial record contained no such evidence. VIII JA 4041-4047. Ford also argued that Plaintiff's failure of proof on Ford's exercise of reasonable care and proximate cause foreclosed her negligent design claim even if West Virginia law does not impose a feasible alternative design requirement. VIII JA 4024-4041. In the alternative, Ford argued that it was entitled to a new trial in which the jury would be properly instructed on Plaintiff's burden to prove the existence of a feasible alternative design as part of her negligent design claim. VIII JA 4058-4059. A new trial was also warranted to cure the improper admission of expert testimony from Thorbole about computer simulations which everyone—including the expert himself and the court—agreed were not reflective of the conditions in this crash. VIII JA 4050-4053.

The Circuit Court denied Ford's motion. VIII JA 4156-4166. Ford timely appealed. VIII JA 4167-4197.

SUMMARY OF ARGUMENT

Ford is entitled to judgment as a matter of law or, in the alternative, a new trial. The Circuit Court erred in holding otherwise.

First, the Circuit Court erred in holding that West Virginia law does not require plaintiffs in negligent design cases to prove the existence of a feasible alternative design that would have eliminated the asserted risk of injury. Both strict liability and negligence theories require a plaintiff to identify a design defect in the product at issue. For a product to be defective, it cannot be reasonably safe for its intended use. The feasible alternative design requirement provides courts and juries a sensible and administrable benchmark for determining when that standard is met. The

Circuit Court's approach, by contrast, departs from common law tort principles and *Morningstar*'s admonition that negligence imposes a *higher* evidentiary burden than strict liability in tort. The court's ruling makes West Virginia an outlier and allows a manufacturer to be liable for negligently designing a product when there was no feasible alternative design that could have eliminated the risk that resulted in injury.

The Circuit Court's legal error distorts longstanding precedent of the West Virginia Supreme Court. As the record reflects, the Circuit Court got this issue right before changing her mind. If this Court agrees on the law, the judgment must be reversed, and the only question is the appropriate remedy. The answer is that Ford is entitled to judgment in its favor on the brake fluid reservoir claim. Plaintiff had every reason and opportunity to present evidence of the existence of a feasible alternative design in the proceedings below, and she in fact tried to do so. Both sides agreed that she had to prove a feasible alternative design as part of proving a defect on her strict liability theory, and the Circuit Court correctly held at the charge conference that a defect is likewise part of the required proof in a negligent design claim. It was only *after* that holding that Plaintiff asked the Circuit Court to excuse her from proving a feasible alternative design to show a defect in her negligent design claim. Plaintiff failure of proof on a feasible alternative design means that no reasonable juror could have found in her favor under a correct reading of West Virginia law. On this basis alone, this Court should therefore vacate the judgment below and remand for entry of judgment in Ford's favor.

At minimum, Ford is entitled to a new liability trial on the brake fluid reservoir claim because the Circuit Court's error resulted in jury instructions that did not accurately state West Virginia law. As a result, the jury was allowed to render a verdict against Ford absent evidence on an indispensable element of proof.

Second, the Circuit Court erred in allowing Thorbole to testify about simulations that the court correctly determined were irrelevant, inadmissible, and could mislead and confuse the jury. As the court recognized in its pretrial ruling excluding the simulations, the stated purpose for them was to show what would have happened *in the accident at issue* if Thorbole's alternative design was in place. But if the conditions underlying those simulations were not substantially similar to the crash here, the simulation could not meet its purpose; nor could testimony about those dissimilar simulations. *Ilosky* is directly on point and proscribed Thorbole's simulation testimony. The Circuit Court erred when it reversed course at trial and misread *Ilosky* to permit Thorbole to rely on and testify about his inadmissible simulations. This error was not harmless, and it requires that this Court, at minimum, grant Ford a new trial on liability for Plaintiff's brake fluid reservoir claim.

Third, Ford is entitled to judgment as a matter of law for evidentiary failings separate and apart from the lack of feasible-alternative-design evidence. The trial record lacks evidence from which a jury could have found that Ford failed to exercise reasonable care when designing the 2014 Mustang or that Ford's design of the vehicle's brake fluid reservoir was the proximate cause of Ms. Bumgarner's death. For negligent design claims, the existence of a design defect is just the starting point for a plaintiff to meet their burden of proof. Once a defect is proven, there must be a broader assessment of whether Ford exercised reasonable care when designing its 2014 Mustang. On this issue, undisputed evidence showed that Ford complied with every applicable regulatory and industry safety standard—and then some. Plaintiff's own experts said as much. Further, they agreed that no manufacturer can prevent a fire in a crash of this severity. Plaintiff's evidence of proximate cause similarly faltered, as the trial record lacked any evidence that a fire could have been avoided after this accident if Ford designed the 2014 Mustang's brake fluid reservoir

differently. The failure of proof on either of these two elements entitled Ford to judgment as a matter of law.

STATEMENT REGARDING ORAL ARGUMENT

Ford respectfully requests oral argument. Cases "involving issues of first impression" are suitable for oral argument. W. Va. R. App. P. 20(a). This case qualifies. As the Circuit Court recognized, the question of whether a negligent design claim requires evidence of a feasible alternative design is a " 'novel' point in West Virginia law and that there needs to be a 'new point of law' in West Virginia" to resolve it. VIII JA 4161. Oral argument is also appropriate here because this appeal challenges "assignments of error in the application of settled law" and "insufficient evidence or a result against the weight of the evidence." W. Va. R. App. P. 19(a). The Circuit Court misread *Ilosky* to permit expert testimony about inadmissible simulation evidence, and it upheld a $7 million verdict on Plaintiff's negligent design claim even though Plaintiff offered insufficient evidence of a feasible alternative and other elements of a negligent design claim.

STANDARDS OF REVIEW

This Court reviews *de novo* all issues of law, *Gallant v. Cnty. Comm'n of Jefferson Cnty.*, 212 W. Va. 612, 617-618, 575 S.E.2d 222, 227-228 (2002), as well as "the grant or denial of a pre-verdict or post-verdict motion for judgment as a matter of law," *Gillingham v. Stephenson*, 209 W. Va. 741,745, 551 S.E.2d 663, 667 (2001) (citing Syl. Pt. 3, *Brannon v. Riffle*, 197 W. Va. 97, 475 S.E.2d 97 (1996)). Although a jury's findings of fact "will not ordinarily be disturbed," Syl. Pt. 5, *Ilosky*, 172 W. Va. 435, 307 S.E.2d 603, this Court cannot uphold a jury verdict absent evidence of a key element of a plaintiff's claim. *See Beneficial Fin. Co. of Charleston v. Collins*, 150 W. Va. 655, 149 S.E.2d 221, 229 (1966). In determining whether there is sufficient evidence to support a jury verdict this Court (1) considers the evidence most favorable to the prevailing party;

(2) assumes that all conflicts in the evidence were resolved by the jury in favor of the prevailing party; (3) assumes as proved all facts which the prevailing party's evidence tends to prove; and (4) gives to the prevailing party the benefit of all favorable inferences which reasonably may be drawn from the facts proved. Syl. Pt. 5, *Orr v. Crowder*, 173 W. Va. 335, 315 S.E.2d 593 (1983).

With respect to whether a circuit court's jury instructions warrant a new trial, this Court reviews *de novo* whether the instructions accurately state the law. *State v. Drakes*, 243 W. Va. 339, 844 S.E.2d 110, 114 (2020) (citing *State v. Guthrie*, 194 W. Va. 657, 671, 461 S.E.2d 163, 177 (1995)). And although this Court ordinarily reviews evidentiary rulings for an abuse of discretion, Syl. Pt. 3, *State v. McCracken*, 218 W. Va. 190, 624 S.E.2d 537 (2005), that discretion "does not apply where 'the trial court . . . applies the wrong legal standard.' " *McDougal v. McCammon*, 193 W. Va. 229, 238, 455 S.E.2d 788, 797 (1995) (citation omitted).

ARGUMENT

I. The District Court's Error In Holding That Negligent Design Claims Do Not Require Proof Of A Feasible Alternative Design Entitles Ford To Judgment As A Matter Of Law Or, At A Minimum, A New Trial.

This Court should confirm that West Virginia law requires proof of a feasible alternate design that would avoid the harm alleged in order to prove a product is defective. Proof of a feasible alternative design is necessary to show that a product's design is defective, and—as the Circuit Court held—proof of a design defect is indispensable for a negligent design claim. The Circuit Court erred in holding otherwise. West Virginia law on this point should be consistent for both strict liability and negligent design claims since both theories, at their core, involve proof of a defect.

Once the law is correctly stated by this Court, the Court must determine the proper remedy for the consequences of the Circuit Court's legal error below. Because the fully developed trial record shows that Plaintiff lacked proof there was a feasible alternative design that could have

eliminated a fire risk after a crash as severe as the one here, this failure of proof entitles Ford to judgment as a matter of law. At a minimum, a new trial is warranted. By deleting all references to a feasible alternate design, the jury instructions given by the Circuit Court misstated the law; this error is "presumed to be prejudicial" and requires a new trial. Syl. Pt. 6, *Ratlief v. Yokum*, 167 W. Va. 779, 280 S.E.2d 584 (1981).

A. West Virginia law requires plaintiffs in negligent design cases to prove the existence of a feasible alternative design that eliminates the risk of the injury complained of.

The Circuit Court erred when it held that negligent design claims do not require evidence of a feasible alternative design that could have eliminated the risk of the injury at issue. That ruling ignored West Virginia's approach to the common law and departed from the law in the majority of states. Like strict liability claims, negligent design claims require evidence of a feasible alternative design because both theories of liability require proof that a product's design is defective. Restatement (Third) Torts: Prod. Liab. § 2 cmt. n (1998) ("Negligence rests on a showing of fault leading to product defect. Strict liability rests merely on a showing of product defect."); *see also* Syl. Pt. 3, *Morningstar*, 162 W. Va. 857, 253 S.E.2d 666 ("proof of the defective condition of the product" is "principal basis of liability" in strict liability claim); Philip Combs & Andrew Cooke, *Modern Products Liability Law in West Virginia*, 113 W. Va. Law Rev. 417 (2011) (evidence of a defective product is a necessary element of a negligent design claim). A product's design is only defective if it prevents the product from being reasonably safe for its intended use. *Stone v. United Eng'g, a Div. of Wean, Inc.*, 197 W. Va. 347, 363, 475 S.E.2d 439, 455 (W. Va. 1996); *Morningstar*, 162 W. Va. at 888, 253 S.E.2d at 683.

The feasible alternative design requirement provides a clear benchmark for deciding whether a product is reasonably safe: A product is not reasonably safe if it risks harm to users that a feasible alternative design would have eliminated. *See Church v. Wesson*, 182 W. Va. 37, 40,

385 S.E.2d 393, 396 (1989). In addition to being administrable, the standard makes sense. A product cannot be defective in any meaningful sense if, after accounting for "the state of the art in the industry, including the cost of production, at the time of manufacture," no other design could have eliminated the risk of a particular injury. Syl. Pt. 5, *Morningstar*, 162 W. Va. 857, 858, 253 S.E.2d 666, 667 (1979) (defining unsafe).

The elements of strict liability and negligent design claims are necessarily similar under West Virginia law because West Virginia largely embraces the common law of torts. *Roberts v. Consol. Coal Co.*, 208 W. Va. 218, 233, 539 S.E.2d 478, 493 (2000). The common law disclaims rigid distinctions between "traditional doctrinal categories," Restatement (Third) of Torts: Prod. Liab. § 2 cmt. n., and focuses instead on what elements are functionally necessary to prove reasonableness in a particular setting, *id.* "Regardless of the doctrinal label," all design claims "rest on a risk-utility assessment," *id.*, that requires a comparison "between an alternative design and the product design that caused the injury," *id.* cmt. d; *see also Morningstar*, 162 W. Va. at 887, 253 S.E.2d at 682 (noting a risk/utility framework sets the "general contours" of testimony "concerning the defectiveness of the product"). The overlapping elements between strict liability and negligent design theories reflect the need to engage in that comparison.

Indeed, there is only one difference between strict liability and negligent design claims: proving strict liability is easier than proving negligence because the plaintiff does not need to prove specific acts of negligence in a strict liability claim. *Morningstar*, 162 W. Va. at 877, 253 S.E.2d at 677 ("[T]he most beneficial aspect of [strict liability] is it relieves [plaintiffs] of proving specific acts of negligence."); Restatement (Third) of Torts: Prod. Liab. § 1 (1998) ("[A] commercial seller of any product having a manufacturing defect should be liable . . . regardless of the plaintiff's

ability to maintain a traditional negligence or warranty action.").[3] As *Morningstar* explained, "[t]he cause of action covered by the term 'strict liability in tort' is designed to relieve the plaintiff from proving that the manufacturer was negligent in some particular fashion during the manufacturing process and to permit proof of the defective condition of the product as the principal basis of liability." Syl. Pt. 3, *Morningstar*, 162 W. Va. 857, 253 S.E.2d 666. In both claims, however, a plaintiff must prove that the product was sold in a defective condition—which means there was a feasible alternative design that would have prevented the harm that occurred and the manufacturer chose not to use it.

In carving a feasible alternate design out of negligent design claims, the Circuit Court inverted *Morningstar*. It made negligent design claims *easier* to prove than strict liability. That ruling, if not corrected, means that plaintiffs can hold manufacturers liable for negligently designing a product *when there is no evidence that a reasonable manufacturer could have made a safer choice*. It is no wonder, then, that the vast majority of states require negligent design plaintiffs to prove a feasible alternative design as part of proving a defect. *See, e.g.*, *Tersigni v. Wyeth*, 817 F.3d 364, 368 (1st Cir. 2016) (negligent design claim fails under Massachusetts law absent proof of a reasonable alternative design); *Gomez v. St. Jude Med. Diag Div. Inc.*, 442 F.3d 919 (5th Cir. 2006) (strict liability and negligent design claims fail under Louisiana law absent proof of a feasible alternative design); *Evans v. Nacco Materials Handling Grp., Inc.*, 295 Va. 235, 249, 810 S.E.2d 462, 471 (2018) (holding, in the negligent design context, that "a design is not objectively unreasonable unless the plaintiff can show that an alternative design is safer overall

[3] "Strict liability in tort" differs from the traditional common law rule of strict liability which "fixes absolute liability for perilous activities or conditions conducted on one's property which escape control and damage another's property or person." *Morningstar*, 162 W. Va. at 877, 253 S.E.2d at 677 (citing *Rylands v. Fletcher*, L.R. 3 H.L. 330 (1868), Aff'g L.R. 1 Ex. 265 (1866)); *see also* 57A Am. Jur. 2d *Negligence* § 359 (explaining *Rylands v. Fletcher* doctrine).

than the design used by the manufacturer"); *Branham v. Ford Motor Co.*, 390 S.C. 203, 223, 701 S.E.2d 5, 15 (2010) (holding that a reasonable alternative design is required in design defect case based upon strict liability and negligence); N.C. Gen. Stat. Ann. § 99B-6(a) (requiring proof of a reasonable alternative design); *In re Risperdal Litig.*, No. 1161 EDA 2017, 2017 WL 11656908, at *4 (Pa. C.P. Phila. Cnty. July 26, 2017) (in a negligent design case, "North Carolina law requires a plaintiff to prove, inter alia, the existence of a safer alternative design").

Instead of adhering to the clear weight of authority, the Circuit Court relied upon a single wrongly decided case from the Southern District of Western Virginia, *Mullins v. Johnson & Johnson*. VIII JA 4189 (citing Syl. Pt. 4, *Mullins v. Johnson & Johnson*, 236 F. Supp. 3d 940 (S.D. W. Va. 2017) (*Mullins II*)). *Mullins II* offered two rationales for its unprecedented ruling that negligent design claims under West Virginia law do not require proof of a feasible alternative design. Neither rationale has merit.

First, *Mullins II* contended that negligence and strict liability must have different elements because they are different theories of liability. *Mullins II*, 236 F. Supp. 3d at 942 (quoting Syl. Pt. 6, *Ilosky*, 172 W. Va. 435, 307 S.E.2d 603, 605). That is true, but not relevant to how a defect is proven on both theories. *Morningstar* made clear what the difference is: A strict liability claim relieves the plaintiff of having to prove specific acts of negligence by the defendant, on top of proving a defect. The remaining elements are entirely overlapping. That makes sense, given West Virginia's common law roots, *supra* at 25.

Second, *Mullins II* distinguished negligent design claims from strict liability claims because the former focuses on the "conduct" of the manufacturer and the latter focuses on the "condition" of the product. 236 F. Supp. at 944. That is also true in a sense, but not a basis to eliminate the feasible alternative design element from negligent design claims. Negligence

product liability claims are *additive*: "in a negligence claim, a defendant's fault is at issue *in addition to* the condition of the product." Am. L. of Prods. Liab. 3d § 28:14. In other words, a plaintiff must prove strict liability *plus* specific acts of negligent conduct by the manufacturer. That means proving negligence imposes an additional "*burden*" on a plaintiff; it is not an easier alternative path to liability. *See Morningstar*, 162 W. Va. at 883, 253 S.E.2d at 680 (emphasis added). Even the *Mullins* court once recognized this. In a prior ruling in the same case, the court took the view that "evidence on breach of duty [for negligent design claims] . . . would mirror, or at least overlap with, the evidence on defective design [for strict liability claims]." *Mullins v. Ethicon, Inc.*, 117 F. Supp. 3d 810, 813 (S.D. W. Va. 2015) (*Mullins I*).

* * *

The Circuit Court's ruling ignores that negligent design claims and strict liability claims both ask whether a defendant designed a product that was reasonably safe for its intended use, such that the identical concept of "defect" is at the core of both claims. To the extent doctrinal differences matter, they show that negligence is *harder* to prove than strict liability, not easier, and the Circuit Court erred in ruling just the opposite.

B. The Circuit Court erred in denying Ford's motion for judgment as a matter of law absent sufficient proof of a feasible alternative design for the brake fluid reservoir.

This Court should remand for entry of judgment for Ford. The trial record is fully developed on the feasible alternative design issues, yet lacks evidence that there was a feasible alternative design for the brake fluid reservoir that would have eliminated the risk of fire in a crash like this one—where the closing speed was more than 100 mph and the change in velocity for the Mustang exceeded the 98th percentile for accidents that resulted in death or serious injuries. Indeed, all of the experts agreed at trial that *no design* can result in a fire-proof vehicle. This evidentiary gap is particularly glaring given that Plaintiff had good reason to present feasible

alternative design evidence below: All parties agree that, at minimum, the strict liability theory Plaintiff asserted at trial also required her to make this showing, and it was only after the close of evidence that Plaintiff asked to be excused from having to prove a feasible alternate design for her negligent design claim. The simple fact is that no reasonable juror could conclude from the trial record that there was a feasible alternative design for the brake fluid reservoir that Ford could have used to prevent the injuries here. *See* Syl. Pt. 3, *Brannon*, 197 W. Va. 97, 475 S.E.2d 97.

When assessing feasibility, courts must ask what a reasonable manufacturer would have done under the circumstances. *Morningstar*, 162 W. Va. at 887, 253 S.E.2d at 666, 681-682. An alternative design must therefore be technologically and economically feasible and eliminate the risk of the injury claimed. *Nease v. Ford Motor Co.*, 848 F.3d 219, 233–34 (4th Cir. 2017); *In re Tobacco Litig.*, No. 13-1204, 2014 WL 5545853, at *2-3 & n.5 (W. Va. 2014) (citing *Church*, 182 W. Va. at 40, 385 S.E.2d at 396). It is not enough that another design was *possible* at the time of manufacture. To be feasible, an alternative must reflect the state of the art in the industry at the time. *Church*, 182 W. Va. at 40, 385 S.E.2d at 396. Moreover, the purportedly safer alternatives must work for the specific product at issue. *See Nease*, 848 F.3d at 234. Evidence that a safer alternative design was feasible for a different product—or a different model of the same product—does not bear on whether an alternative design was available for the challenged product at the time it was manufactured or whether that alternative would have eliminated the risk of injury here. *Id.*

Ford placed the brake fluid reservoir in its 2014 Mustang behind a shock tower—one component of a broader system designed to shield the reservoir in case of collision. IV JA 1881-1882. Thorbole suggested the reservoir should have instead been secured by a boron steel strut between the cowl and shock tower that would divert energy in a crash and shield the reservoir from impact. IV JA 1882. But Thorbole was required to substantiate this suggestion with *evidence* that

a strut would have eliminated the risk of a fire in *this model* vehicle under *the conditions of this crash*, i.e., in a collision involving a closing speed of more than 100 mph.[4] He did not.

Initially, Thorbole pointed to the design of a Mercedes, but when shown the video in which the boron bar broke and was tumbling around, he agreed that was not a feasible design. IV JA 2085:17-18, 2086:1-4. So he turned to his computer simulation, in an attempt to present evidence of materials that could possibly permanently constrain a strut so that it would not have come "loose" and led to the brake fluid reservoir "tumbling around," exactly as happened in the Mercedes crash test. *Id.*

Even assuming Thorbole's computer simulations were properly admitted (they were not, *infra* at 31-34), they are insufficient to meet Plaintiff's burden of proof on this element. Unrefuted testimony demonstrated that the "infinitely strong" attachment in Thorbole's proposal does not exist for manufacturers using real-world materials. IV JA 2959:13-23. Fleming also explained that in Thorbole's simulation, the boron bar was "greatly bent and distorted" and experienced strains far exceeding boron's real-life physical material properties. IV JA 2960-2962. Had it experienced that much strain and deformity in the real-world, it "would have snapped." IV JA 2960-2961. Even in Thorbole's simulated world, the shock tower still contacted the brake fluid reservoir. IV JA 2962.

On this record, then, Plaintiff failed to prove the existence of an alternative design for the 2014 Mustang's brake fluid reservoir that was feasible and would have been safer in a crash of this

[4] The same standard applies to Plaintiff's belated invocation of the 1965 model Mustang which included a brace in between the vehicle's shock tower and cowl for torsional stiffness. IV JA 3256:24-3259:23. Thorbole never even discussed this design, IV JA 3316-3318, let alone tested whether the 1965 Ford would have eliminated the risk of a post-collision fire in this accident.

magnitude. No reasonable juror could have found otherwise. The Circuit Court should have therefore granted Ford's motion for judgment as a matter of law.

C. The Circuit Court erred by removing all feasible alternative design language from the jury instructions.

At the very least, Ford is entitled to a new trial under the correct legal standard. A trial court's instructions must contain "a correct statement of the law." Syl. Pt. 1, *Drakes*, 243 W. Va. 339, 844 S.E.2d 110. The instructions here did not. Over Ford's objection, the court removed all feasible alternative design language from the jury instructions. V JA 3582-3583. As a result, the jury received instructions that inaccurately portrayed West Virginia law. *See supra* at 24-28.

This legal error was not harmless. Inaccurate instructions are presumed to be prejudicial. Syl. Pt. 6, *Ratlief*, 167 W. Va. 779, 280 S.E.2d 584. For that reason, inaccurate jury instructions warrant a new trial "unless it appears that the complaining party was not prejudiced by such an instruction." *Id.* Here, the court's improper instructions were not merely prejudicial, they were dispositive: Plaintiff lacked evidence of a feasible alternative design that could have prevented a fire in the context of a crash like the one here, and she could not have prevailed had the jurors been properly instructed. *See supra* at 29-31. As a result, at a minimum, a new trial is warranted. *Tracy v. Cottrell ex rel. Cottrell*, 206 W. Va. 363, 376, 524 S.E.2d 879, 892 (1999).

II. The Circuit Court's Admission of Expert Testimony About Inadmissible Simulations Involving Dissimilar Accident Conditions Warrants a New Trial.

The Circuit Court committed a second legal error in doing an about-face from its pretrial ruling excluding inadmissible simulation evidence under *Ilosky*. In direct contravention of *Ilosky*, the Circuit Court allowed Thorbole to tell the jury about highly misleading simulations involving dissimilar accident conditions and to purport to demonstrate an "alternative" design with a design that was a manufacturing impossibility in the real world. That error was not harmless. The Circuit

Court's improper admission of Thorbole's computer-simulation testimony infected the trial and prejudiced Ford. For this reason as well, a new trial is warranted.

A trial court commits legal error when it admits irrelevant evidence. *State ex rel. Harvey v. Yoder*, 239 W. Va. 781, 806 S.E.2d 437, 443 (2017) ("Evidence that is not relevant, by definition, cannot be offered for a proper purpose"). In West Virginia, like elsewhere, evidence of tests and experiments are irrelevant to prove what happened in a particular crash unless the essential conditions at the time of the experiment are substantially similar to those existing under the occurrence at issue. Syl. Pt. 16, *Ilosky*, 172 W. Va. 435, 307 S.E.2d 603. As both parties and the Circuit Court recognized, *Ilosky* is controlling on this issue in West Virginia.

Ilosky was a products liability action against a tire manufacturer related to warnings about the dangers of mixing conventional snow tires with radial tires. The defendant sought to admit three videotapes it made of certain tests conducted with a vehicle that was "as similar as possible to that driven by the appellee at the time of the accident." *Id.* at 449, 307 S.E.2d at 617. The trial court excluded one of the three videotapes (but allowed an expert to testify about it) because opposing counsel did not have the opportunity to be present when the video was made. *Id.* The court excluded the other two videotapes because the defendant failed to prove that the tests were "performed under all the 'essential conditions' " that would render the tests similar to the accident in question. *Id.* at 449, 307 S.E.2d at 618.

The Supreme Court of Appeals affirmed. As to the test conducted without the party's presence, the court found it was error to have excluded the test, but that error was ultimately harmless because the expert testified about the test at trial. That part of *Ilosky* is not relevant to this case. The relevant part of *Ilosky* addresses the two tests that were excluded based on the lack

of substantial similarity to the accident at issue there. On those tests, *Ilosky* confirmed that they were properly excluded. *Id.* at 449, 307 S.E.2d at 618-619.

A straightforward application of *Ilosky* should have barred the admission of Thorbole's simulation testimony. It is undisputed that the stated purpose for Thorbole's simulations was to show what would have happened in the accident at issue here if his alternative design was in place. And it is indisputable that the conditions underlying his simulations were not substantially similar to the conditions surrounding Ms. Bumgarner's crash. Thorbole admitted as much. II JA 363; IV JA 2072:14-17, 2076:1-2. The Circuit Court found as much, II JA 537-539, and Plaintiff cannot now argue otherwise. At trial, like in his deposition, Thorbole acknowledged that his simulations involved a frontal collision, not one at a 40-degree angle, and reflected several other changes to the conditions of the collision and the vehicle simulated. IV JA 1745-1747. And he "rigidly affixe[d]" a steel strut to the 2014 Mustang under conditions that have no real-world analog. IV JA 2958-2960.

The Circuit Court's decision to permit Thorbole's simulation testimony, and just exclude the simulations themselves, reflected a fundamental misreading of *Ilosky*. Specifically, the Circuit Court understood *Ilosky*'s harmless error analysis to permit testimony about stimulations even if the simulations themselves are inadmissible. IV JA 1775:13-1776:5. But that portion of *Ilosky* had nothing to do with the propriety of the trial court's decision to exclude two videos because of their substantial dissimilarity from the accident in question. *Ilosky*, 172 W. Va. at 449, 307 S.E.2d at 617. It solely pertained to the video that was *excluded* due to a flawed understanding of a separate procedural rule. *Id.*

The Circuit Court's misreading of *Ilosky* would undermine the case's holding. It would permit an expert to testify about highly misleading and inadmissible computer-simulations so long

as the court does not admit the simulations themselves. Courts have long recognized that '[s]cientific and technical evidence has great potential for misleading the jury." Charles A. Wright & Kenneth W. Graham, Jr., 22 Federal Practice and Procedure § 5217 (1978). "The low probative worth can often be concealed in the jargon of some expert or masked by the use of technical paraphernalia." *Id.*; Paul C. Giannelli, *The Admissibility of Novel Scientific Evidence: Frye v. United States, A Half-Century Later*, 80 Colum. L. Rev. 1197, 1237 (1980) (recognizing "an aura of scientific infallibility may shroud the evidence"). Simulations are no exception—an expert's presentation of the results of a simulation risks obscuring technical but significant differences between the simulation's inputs and the actual accident. Excluding the simulation itself does not mitigate this risk if an expert can nonetheless testify about the simulation's results. Either way, the jury is presented with information that is irrelevant, distracting and misleading because it is unrelated to the circumstances in front of it. That is precisely why the Supreme Court imposed a "substantial similarity" test in *Ilosky* for this type of evidence.

The improper admission of Thorbole's simulation testimony was not harmless. An error is only harmless if it has no effect on "the substantial rights of the parties." W. Va. R. Civ. P. 61. By contrast, Thorbole's testimony about the computer simulation that permanently affixed a steel strut to the 2014 Mustang was Plaintiff's only "evidence" regarding the existence of a feasible alternative design for the brake fluid reservoir or, more broadly, Ford's purported failure to exercise reasonable care. Both elements of proof are indispensable to Plaintiff's negligent design claim. Because this evidence should not have been admitted, a new trial on liability is warranted.

III. Plaintiff's Failure Of Proof On Other Elements Of Her Negligent Design Claim Entitled Ford To Judgment As A Matter of Law.

Plaintiff failed to show that Ford did not exercise reasonable care when designing the 2014 Mustang for additional reasons beyond the lack of proof of a feasible alternative design. No

reasonable juror could have found otherwise. The evidence showed that the 2014 Mustang complied with all applicable safety standards—and then some. No evidence suggested that Ford broke step with the design choices of a reasonably prudent manufacturer. Nor did Plaintiff present any evidence that Ford's design choices—instead of the magnitude of the accident—were the proximate cause of Ms. Bumgarner's death. Plaintiff did not show that the 2014 Mustang's design could have been modified in any feasible way that would have prevented Ms. Bumgarner's death here. Absent evidence on these two elements, the Circuit Court erred in denying Ford's post-judgment motion for judgment as a matter of law. *See Beneficial Fin. Co. of Charleston*, 150 W. Va. at 667-669, 149 S.E.2d at 229. This Court should vacate the Circuit Court's judgment and direct that judgment be entered for Ford.

A. Plaintiff failed to show that Ford breached a duty of reasonable care with respect to the design of the brake fluid reservoir in its 2014 Mustang.

It is hornbook law: "No action for negligence will lie without a duty broken." Syl. Pt. 3, *Aikens v. Debow*, 208 W. Va. 486, 541 S.E.2d 576 (2000). Here, there is no dispute that Ford owed to Ms. Bumgarner—as it owes to all Ford customers—a "duty to exercise 'due care'" when designing its products. *Honaker v. Mahon*, 210 W. Va. 53, 58, 552 S.E.2d 788, 793 (2001). Car manufacturers have a duty to design vehicles that are reasonably safe. *Supra* at 24-25; *Morningstar*, 162 W. Va. at 888, 253 S.E.2d at 683. This duty does not assign manufacturers the impossible task of designing an accident-proof vehicle or afford perfect protection against the negligence of others. *McClung v. Ford Motor Co.*, 333 F. Supp. 17, 20 (S.D. W. Va. 1971) (duty of care "does not include the duty to design and construct an automobile which will insure the occupants against injury no matter how it may be misused or bludgeoned by outside forces"), *aff'd*, 472 F.2d 240 (4th Cir. 1973). It requires only that vehicles are designed such that they are

reasonably "safe for the functional use for which [they are] intended" and "fairly meet emergencies which can be reasonably anticipated." *Id.*

The question of what a reasonably prudent manufacturer would have done calls for a multi-factor inquiry into surrounding circumstances, *id.*, including "the general state of the art of the manufacturing process . . . as it relates to economic costs," Syl. Pt. 5, *Morningstar*, 162 W. Va. 857, 253 S.E.2d 666; adherence to legislative and industry safety standards, *Volkswagen of Am., Inc. v. Young*, 321 A.2d 737, 746 (Md. 1974); and the nature of the accident, *Dreisonstok v. Volkswagenwerk, A.G.*, 489 F.2d 1066, 1073 (4th Cir. 1974)—just to name a few. And while no one factor is always dispositive, *Johnson by Johnson v. Gen. Motors, Corp.*, 190 W. Va. 236, 248, 438 S.E.2d 28, 40 (1993), compliance with government and industry safety standards is "highly relevant" because it "permit[s] an inference that the manufacturer exercised . . . ordinary prudence," *Evans*, 295 Va. at 247, 810 S.E.2d at 469.

Plaintiff's evidence fell short on every factor. To start, Plaintiff chose not to call her brake fluid-design expert at trial. And the testimony of the witnesses she did call indicated that Ford's design choices were reasonable ones. Schulz, for example, testified that no manufacturer can prevent the release of any engine-compartment fluids or eliminate the risk of post-collision fire in all accidents. III JA 1473-1474. Thorbole then acknowledged that the 2014 Mustang complied with the safety standards imposed by law and received top safety ratings in the crash-tests that governed in 2001. He testified the 2014 Mustang satisfied all applicable Federal Motor Vehicle Safety Standards, III JA 1161-1162; IV JA 1918-1922, 2002; had a "great" performance in NCAP's 35-mph rigid-barrier crash test, IV JA 1911, 1922, 2002; and received the highest rating offered in the Insurance Institute for Highway Safety's 40/40 crash test, III JA 1161; IV JA 1924, 1930.

The testimony from Ford's expert mirrored Thorbole's in this respect. Olson testified that the 2014 Mustang "more than compl[ies]" with federal safety standards, it "exceeds that threshold by a wide margin." IV JA 2827:23-2828:4. Ford's success there reflected the company's policy to "not only comply with the applicable safety standards but . . . [to] really advance the state of the art as it pertained to automotive safety." IV JA 2831 (Olson discussing Ford's Fuel System Crash Integrity Design and Process Guidelines); *see also* IV JA 2832:20-2833:8 (Olson explaining that Ford evaluated the 2014 Mustang under "increase[ed] speeds" and "increase[ed] crash modes, including crashes that weren't even required by the federal safety requirements"). Olson also testified that the specific shape, placement, and durability of the 2014 Ford's brake fluid reservoir reflects federal safety standards, IV JA 2845:11-2846:5; industry practice, IV JA 2846:6-29, 2848:9-10; VII JA 3943; and mechanical necessities, IV JA 2846:21-2848:12. Indeed, in a 35-mph rigid-barrier test, IV JA 2854:11-2855:20, a 30-mph fuel system integrity test, IV JA 2856:4-19, and a 40/40 test, IV JA 2857:9-2858:21, the brake fluid reservoir remained intact. Olson's testimony went unrefuted.

Without evidence that Ford failed to exercise reasonable care with respect to the design, Plaintiff relied on Thorbole's unsubstantiated testimony that the computer simulation would have been safer. This is insufficient. Proof that a product can be made safer is not proof that the product was defectively designed, much less that the manufacturer was negligent as long as the product was reasonably safe as designed. *Church*, 182 W. Va. at 40, 385 S.E.2d at 396. Regardless, Thorbole's testimony did not in fact shed any light on whether Ford could have made different, safer design choices. *Supra* at 29-31. And, in any event, the Circuit Court erred in admitting it. *Supra* at 31-34; *see also* II JA 537-538; *Ilosky*, 172 W. Va. at 449, 307 S.E.2d at 617; Syl. Pt. 6, *Spurlin v. Nardo*, 145 W. Va. 408, 114 S.E.2d 913 (1961). Thorbole's testimony is insufficient to

sustain the jury's finding that Ford failed to exercise reasonable care when designing the 2014 Mustang's brake fluid reservoir. *See McCabe v. City of Parkersburg*, 138 W. Va. 830, 79 S.E.2d 87, 94 (1953) (unsubstantiated expert testimony cannot sustain a verdict).

Applying the right standard, no reasonable juror could return a verdict in Plaintiff's favor when all permissible evidence showed that Ford exercised due care when designing its brake fluid reservoir. The Circuit Court erred by not granting Ford judgment as a matter of law under those circumstances.

B. No reasonable jury could have found that Ford's design choices were the proximate cause of the post-collision fire.

The Circuit Court also erred by sustaining the jury's verdict on the brake fluid reservoir claim absent evidence of proximate cause. "Proximate cause is a vital and an essential element of actionable negligence and must be proved to warrant a recovery in an action based on negligence." Syl. Pt. 3, *McCoy v. Cohen*, 149 W. Va. 197, 140 S.E.2d 427 (1965). It is "that cause which in actual sequence, unbroken by any independent cause, produced the wrong complained of, without which the wrong would not have occurred." Syl. Pt. 4, *White v. Wyeth*, 227 W. Va. 131, 705 S.2d 828 (2010). A plaintiff cannot establish proximate cause without proving that the injury claimed "would not have happened without the design defect." Appx 563; *see also* W. Va. P.J.I. § 905.

The trial record lacks evidence that the post-collision fire could have been avoided here if Ford chose a different design for the 2014 Mustang's brake fluid reservoir. As discussed above, Plaintiff did not even present an alternative design whose materials existed in the real world. *Supra* at 14, 29-30. Tellingly, Plaintiff side-stepped this issue in the post-trial briefings below, and instead asked the Circuit Court to focus on evidence that the release of brake fluid reservoir was an *actual* cause of the post-collision fire. VIII JA 4079-4080. But without evidence that a different design would have prevented the leak of brake fluid in this accident, no reasonable jury could find

proximate cause satisfied. Syl. Pt. 3, *Spencer v. McClure*, 217 W. Va. 442, 618 S.E.2d 451 (2005). The Circuit Court erred by denying Ford's post-judgment motion for judgment as a matter of law.

CONCLUSION

For the foregoing reasons, this Court should vacate the judgment below on Plaintiff's claim that Ford negligently designed the 2014 Mustang's brake fluid reservoir, and order the Circuit Court to enter judgment in Ford's favor on that claim. In the alternative, the Court should vacate the judgment below on Plaintiff's claim that Ford negligently designed the 2014 Mustang's brake fluid reservoir and order that the Circuit Court conduct a new liability trial on this claim.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

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