IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NORTH CAROLINA
WESTERN DIVISION

No. 5:16-CV-716-BR

FAYE GORE, Individually and Executrix of the Estate of Wade Miller Gore, Deceased,	)	
Plaintiff,	)	
v.	)	ORDER
AIR & LIQUID SYSTEMS CORPORATION (sued as successor-by merger to Buffalo Pumps, Inc.), et al.,	)	
Defendants.	)	

This matter is before the court on defendant William Powell Company's ("Powell") motion for summary judgment (DE # 206); defendant Flowserve Corporation's ("Flowserve") motion for summary judgment (DE # 229); and defendant John Crane, Incorporated's ("John Crane") motion for summary judgment (DE # 236). Responses in opposition have been filed. (DE ## 264, 268, 272.) Replies to responses in opposition have also been filed. (DE ## 281, 283, 284.)

Also pending before the court are the following motions in limine: Faye Gore's ("plaintiff") motion to exclude unreliable causation opinions of any defense experts (DE # 205); plaintiff's motion to exclude testimony of defense experts John Henshaw MPH CIH ("Henshaw") and Amy Madl, Ph.D., DABT ("Madl") (DE # 211); defendant E.I. Dupont De Nemours & Company's ("Dupont Company") motion to exclude opinion testimony of Dr. Edwin Holstein ("Holstein") (DE # 216); and defendant John Crane's motion to exclude expert

testimony premised on the "each and every exposure" theory of causation (DE # 248). Responses in opposition have been filed. (DE ## 252, 253, 254, 258, 261, 262, 263, 265, 267, 270, 271, 274, 275, 276.) Replies to responses in opposition have also been filed. (DE ## 282, 285.)

I. BACKGROUND

On 9 June 2015, Wade Gore ("Gore") and plaintiff filed a complaint in the Middle District of North Carolina asserting the following claims: negligence, product liability, breach of implied warranty, willful and wanton conduct, failure to warn, conspiracy, and premise liability, based on Gore's asbestos exposure while employed at the Dupont Plant ("Dupont") in Leland, North Carolina.[1] (DE # 1.) On 1 August 2016, the action was transferred to this district. (DE # 138.) The current defendants to this action are: Air & Liquid Systems Corporation, Dupont Company, Flowserve, Powell, Armstrong, International, Inc., Aurora Pump Company, Goulds Pumps, Inc., and John Crane.

The undisputed facts are as follows. Gore was diagnosed with mesothelioma in May 2015 and died the same year. (See Pl.'s Statement Material Facts (DE # 266) at 13; Flowserve's Statement of Material Facts (DE # 233) at 1; John Crane's Mem. Supp. Summ. J. (DE # 239) at 1; Powell Mem. Supp. Summ. J. (DE # 207) at 2.) Gore worked for Daniels Construction at Dupont from approximately 1971 to at least 1990. (See Pl.'s Statement Material Facts (DE # 266) at 25-26; Flowserve's Statement of Material Facts (DE # 233) at 1; John Crane's Statement of Material Facts (DE # 238) at 1; Powell Mem. Supp. Summ. J. (DE # 207) at 2.) From 1972 to

[1] After Gore's death, plaintiff filed an amended complaint as the executrix of Gore's estate to allege wrongful death under North Carolina's wrongful death statutes, N.C. Gen. Stat. § 28a-18-1 *et seq.* (DE # 160.) The amended complaint did not change the nature of the claims asserted.

1975, Gore worked as an insulator, insulating pipes, pumps, and valves. (See Pl.'s Statement Material Facts (DE # 266) at 26; Flowserve's Statement of Material Facts (DE # 233) at 2; John Crane's Statement of Material Facts (DE # 238) at 1; Powell Mem. Supp. Summ. J. (DE # 207) at 2.)

From either 1975 or 1976 to the 1980s, Gore was a maintenance worker, servicing gaskets, valves, packing, and pumps. (See Pl.'s Statement Material Facts (DE # 266) at 1-3; Flowserve's Statement of Material Facts (DE # 233) at 2; John Crane's Statement of Material Facts (DE # 238) at 1; Powell Mem. Supp. Summ. J. (DE # 207) at 2.) Then, in the 1980s or 1990, Gore became maintenance foreman. (See Pl.'s Statement Material Facts (DE # 266) at 3; Flowserve's Statement of Material Facts (DE # 233) at 2; John Crane's Statement of Material Facts (DE # 238) at 1; Powell Mem. Supp. Summ. J. (DE # 207) at 2.) As maintenance foreman, Gore continued to service gaskets, valves, packing, and pumps. (See Pl.'s Statement Material Facts (DE # 266) at 3; Flowserve's Statement of Material Facts (DE # 233) at 1; John Crane's Statement of Material Facts (DE # 238) at 2; Powell Mem. Supp. Summ. J. (DE # 207) at 2.)

The disputed facts, in the light most favorable to plaintiff, follow. There were four types of equipment at Dupont that allegedly exposed Gore to asbestos: gaskets, pumps, valves, and packing. Gaskets are a piece of material that help seal equipment. At Dupont, gaskets were used on both pumps and valves. (See Pl.'s Statement Material Facts (DE # 266) at 3-4.) "A typical pump used three gaskets, one on the outlet or out-take, one on the inlet or intake and one inside the pump housing." (See Pl.'s Statement Material Facts (DE # 273) at 4.) "The typical valve had three gaskets: the bonnet gasket and two flange gaskets." (See Pl.'s Statement Material Facts (DE # 266) at 4.) There were several types of gaskets at Dupont: asbestos gaskets (sheet and precut), Teflon gaskets, spiral-wound gaskets, and rubber gaskets. (Id.) Asbestos sheet

gaskets were used on pipes and equipment running high temperature steam, acid, and corrosive materials, because of asbestos's unique thermal stability. (Id. at 5.) Unlike asbestos gaskets, teflon and rubber gaskets could not be installed on either a high temperature steam system or on lines running acetic or corrosive materials because they would melt. (Id.) Similarly, spiral-wound metal gaskets were not used on pumps, valves or pipes in high temperature steam applications. (Id.) During his time as a maintenance worker, Gore worked the most prevalently with asbestos gaskets. (Id.) Gore was able to differentiate between asbestos gaskets and the other types of gaskets. (Id. at 4.)

To service gaskets on either valves or pumps, Gore would remove the old gasket from the flange using a putty knife with a hammer, followed by either an electrical drill with a wire brush, or wire brush on its own, to remove the gasket material. (Id. at 5-6.) During this process, asbestos material would release into the air. (Id. at 6.) Once the old gasket was removed, Gore would install a new gasket. (Id.) Gore used new sheet gaskets on the flanges. (Id.) To install a new gasket, Gore would cut a piece of sheet to the size of the needed gasket. (Id.) This process created dust on Gore's desk and person. (Id. at 7.)

Of the three major sheet gaskets used at Dupont for valve flanges, one was manufactured by John Crane. (See Pl.'s Statement of Facts (DE # 273) at 6.) Gore knows he used John Crane 333 gaskets on steam systems and John Crane 2112 gaskets on high corrosive materials. (Id. at 6-7; see also DE # 273-2, at 30.) "On a frequent and regular basis, [] Gore replaced flange gaskets from a valve designed to stop [acetic] fluid with new John Crane 2112 gaskets." (See Pl.'s Statement of Facts (DE # 266) at 7.) "John Crane's 2112 gasket was 60 percent blue crocidolite asbestos mixed with an acid resistant material." (Id.) "John Crane's 333 gaskets

[also] contained asbestos." (Id.). While servicing asbestos gaskets, Gore also worked on a frequent and regular basis with Powell valves. (Id. at 4.)

Gore also serviced pumps. As a maintenance worker, Gore typically worked in the "TPA" buildings at Dupont, where chemical mixing occurred. (See id. at 1-2.) In the TPA buildings, pumps carried either liquids, acetic or sulfuric acids, or pumped steam. (See id. at 3.) There were hundreds of pumps at Dupont. (See Pl.'s Statement Material Facts (DE # 269) at 11.) Specifically, Gore worked on Durco pumps.[2] Gore knew the pumps were Durco because the brand name was on the pumps. (Id. at 3.) "All Durco pumps had an asbestos-containing Durabla gasket located between the pump housing and the rear cover plate, called the rear cover plate gasket." (Id. at 17.) "Durco pumps were sold with asbestos-containing rear cover plate gaskets as the standard material until 1986." (Id.)

While servicing valves and pumps, Gore also replaced asbestos packing. "Packing is a cord-like material used around the stems of valves and pumps at the point where they attach to a motor to prevent the stems from working loose." (Id. at 10.) When Gore removed the dry asbestos packing, it would come out in brittle pieces. (Id. at 14.) This process was onerous and created dust. (Id.) "Between 1975 and the mid-1980s, Mr. Gore remembered hundreds of times when he removed the same gaskets and packing that he had personally installed on the same valves during a prior shutdown or during preventative maintenance; this was true for all the valves at DuPont[.]" (Id. at 15.) Gore personally removed packing from Durco valves at Dupont. (Id. at 14.) Gore knows this because "Durco" was stamped across the housing of the valve. (See

[2] Flowserve was formerly known as Duriron Company ("Durco") and is the successor-in-interest to Valtek, Inc. ("Valtek"). (See Flowserve's Mem. Supp. Summ. J. (DE # 229-1) at 1.)

id. at 12.) "Durco sold four types of packing, all of which contained asbestos until 1980." (Id. at 17.)

Gore also removed packing from Powell valves on a frequent and regular basis. (See Pl.'s Statement Material Facts (DE # 266) at 4.) All Powell steel valves contained asbestos packing until the late 1980s. (Id. at 14.) "Many of the Powell valves at DuPont were stainless steel for running acid." (Id. at 25.) Gore knows the valves and packing were Powell because "Powell" was stamped across either the housing of the valve or on the packing spool. (See id. at 4, 10.) Specifically, "[d]uring major plant shutdowns in 1975 and 1976 [Gore] personally worked on a frequent and regular basis on Powell valves that had never been serviced before" and remembered when he needed to service them again. (Id. at 11.)

II. DISCUSSION

A. Motions for Summary Judgment

1. Standard of Review

Summary judgment is appropriate when the record as a whole reveals no genuine issue of material fact and the moving party is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(a); Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 247–48 (1986). The party seeking summary judgment initially must demonstrate the absence of a genuine issue of material fact. Celotex Corp. v. Catrett, 477 U.S. 317, 323 (1986). Once the moving party has met its burden, the nonmoving party may not rest on the allegations or denials in its pleading, Anderson, 477 U.S. at 248–49, but "must come forward with specific facts showing that there is a genuine issue for trial," Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 587 (1986) (emphasis and quotation omitted). A trial court reviewing a motion for summary judgment should determine whether a genuine issue of material fact exists. Anderson, 477 U.S. at 249. In

making this determination, the court must view the evidence and the inferences drawn therefrom in the light most favorable to the nonmoving party. Scott v. Harris, 550 U.S. 372, 378 (2007).

2. Negligence, Product Liability, Breach of Implied Warranty, Willful and Wanton Conduct, and Failure to Warn Claims

In North Carolina, a plaintiff in a personal injury asbestos case,

> must prove more than a casual or minimum contact with the product containing asbestos in order to hold the manufacturer of that product liable. Instead, the plaintiff must present evidence of exposure to a specific product on a regular basis over some extended period of time in proximity to where the plaintiff actually worked.

Jones v. Owens-Corning Fiberglas Corp., 69 F.3d 712, 716 (4th Cir. 1995) (internal citations and punctuation omitted). "Thus, in any asbestos case, a plaintiff must (1) identify an asbestos-containing product for which a defendant is responsible, (2) prove that he has suffered damages, and (3) prove that defendant's asbestos-containing product was a substantial factor in causing his damages." Agner v. Daniel Int'l Corp., No. CIV 3:98CV220, 2007 WL 57769, *4 (W.D.N.C. Jan. 5, 2007) (unpublished) (internal citation and punctuation omitted). "[P]laintiff must make a showing with respect to *each* defendant[.]" Id.

For the third factor, "[t]o support a reasonable inference of substantial causation from circumstantial evidence, there must be evidence of exposure to a specific product on a regular basis over some extended period of time in proximity to where the plaintiff actually worked." Lohrmann v. Pittsburgh Corning Corp., 782 F.2d 1156, 1162-63 (4th Cir. 1986); compare Jones, 69 F.3d at 716 (exposure to asbestos dust on a daily basis from 1952 to the 1970s demonstrated substantial causation); Haislip v. Owens-Corning Fiberglas Corp., No. 95-1687, 1996 WL 273686, *2 (4th Cir. 1996) (unpublished table decision) (exposure to heavy concentrations of asbestos dust over a nine-month period sufficient to demonstrate substantial causation); Wilder v. Amatex Corp., 336 S.E.2d 66, 68 (N.C. 1985) (finding statements in a plaintiff's affidavit that

he was exposed to asbestos-containing pipe covering and block in 1954, 1956, 1957, and 1970 and unidentified asbestos-containing pipe covering and block in 1966, 1967, 1973, 1974, and 1975, enough to survive a summary judgment motion to prove exposure at trial); with Pace v. Air & Liquid Sys. Corp., 642 F. App'x 244, 248-49 (4th Cir. 2016) (finding no evidence of substantial causation when the only evidence was a co-worker who speculated plaintiff "may have assembled" pumps over the course of 20 years, but could not testify about a specific pump plaintiff worked on); Logan v. Air Prod. & Chemicals, Inc., No. 1:12-CV-1353, 2014 WL 5808916, *3 (M.D.N.C. Nov. 7, 2014) (unpublished) (finding "infrequent" repair of valves not enough to meet the pleading standard of frequency for an asbestos claim).

a. Powell

Powell moves for summary judgment on the basis that plaintiff cannot demonstrate that Gore was exposed to Powell products with frequency, regularity, and proximity. In response, plaintiff identifies asbestos-containing Powell valves Gore worked with at Dupont. (See Pl.'s Statement Material Facts (DE # 266) at 4, 10, 14.) She also demonstrates that Gore removed asbestos-containing packing from Powell steel valves on a frequent and regular basis. (Id. at 4, 11.) Specifically, plaintiff has come forward with evidence that "[d]uring major plant shutdowns in 1975 and 1976 [Gore] personally worked on a frequent and regular basis on Powell valves that had never been serviced before" and remembered when he needed to service those specific asbestos-containing valves again. (Id. at 11.)

Powell also contends that the Fourth Circuit requires a plaintiff in an asbestos action to demonstrate "the amount, duration, [and] intensity" of his or her exposure. (Def.'s Mem. (DE # 207) at 9 (citing Yates v. Air & Liquid Sys. Corp., No. 5:12-CV-752-FL, 2014 WL 4923603, *24 (E.D.N.C. Sept. 30, 2014) (unpublished)). However, the court finds that, at most, "[t]he

Fourth Circuit has taken note of the intensity of exposure in an asbestos case," but has not conclusively required a plaintiff to demonstrate these additional factors to survive a motion for summary judgment. Yates, 2014 WL 4923603, at *25.

The court concludes plaintiff has made a sufficient showing with respect to Powell's products. Powell's motion will be denied on the issue of liability.

b. Flowserve

Flowserve moves for summary judgment on the basis that plaintiff failed to produce evidence of Gore's actual exposure to any of Flowserve's Durco or Valtek asbestos-containing products. Specifically, Flowserve alleges plaintiff did not produce evidence that Gore was actually exposed to asbestos for which Durco was responsible. Further, Flowserve argues Gore could not identify any specific details or model numbers for Durco pumps he allegedly serviced.

In response, plaintiff contends Gore worked with Durco pumps, gaskets, and valves. As for pumps, plaintiff points to the fact that Gore identified that he worked with Durco pumps. (See Pl.'s Statement Material Facts (DE # 269) at 3.) All Durco pumps had an asbestos-containing Durabla gasket located between the pump housing and the rear cover plate gasket until 1986. (Id. at 17.) For gaskets, plaintiff demonstrates that from 1974 or 1975 until the mid-1980s, Gore personally removed asbestos gaskets from Durco valves on a frequent and regular basis. (Id. at 15.) Gore states he knows this because he saw Durco's stamp on the valve. (Id. at 12.) For packing, plaintiff demonstrates that from 1974 or 1975 until the mid-1980s, Gore personally removed packing from Durco valves on a frequent and regular basis. (Id. at 14-15.) All Durco packing contained asbestos until 1980. (Id. at 17.)

The court concludes plaintiff has made a sufficient showing with respect to Flowserve's Durco products. However, plaintiff has failed to come forward with any evidence of Flowserve's Valtek products. Powell's motion will be denied as to Flowserve's Durco products and granted as to Flowserve's Valtek products.

c. John Crane

John Crane moves for summary judgment on the basis that plaintiff has no evidence that Gore's exposure to either John Crane's gaskets or packing is a substantial factor in causing Gore's damages. In response, plaintiff shows Gore worked specifically with John Crane 333 and 2112 gaskets on a frequent and regular basis. (Pl.'s Statement Material Facts (DE # 273) at 6-7.) Plaintiff demonstrates that both John Crane 333 and 2112 gaskets contained asbestos. (Id. at 7.) To further quantify his exposure, Gore states that of the three major sheet gaskets used at Dupont for valve flanges, one was manufactured by John Crane. (See id. at 6.)

The court concludes plaintiff has made a sufficient showing with respect to John Crane's products. Accordingly, John Crane's motion will be denied on the issue of its liability.

3. Punitive Damages

Flowserve and John Crane also move for summary judgment on the issue of punitive damages. North Carolina law establishes the standard for recovering punitive damages:

> Punitive damages may be awarded only if the claimant proves that the defendant is liable for compensatory damages and that one of the following aggravating factors was present and was related to the injury for which compensatory damages were awarded:
> (1) Fraud.
> (2) Malice.
> (3) Willful or wanton conduct.

N.C. Gen. Stat. § 1D–15(a). The existence of the aggravating factor must be proven by clear and convincing evidence. Id. § 1D–15(b).

In this case, the aggravating factor is willful or wanton conduct. North Carolina defines "[w]illful or wanton conduct" as "the conscious and intentional disregard of and indifference to the rights and safety of others, which the defendant knows or should know is reasonably likely to result in injury, damage, or other harm. 'Willful or wanton conduct' means more than gross negligence." Id. § 1D–5(7). Punitive damages can be awarded against a corporation only if "the officers, directors, or managers of the corporation participated in or condoned the conduct constituting the aggravating factor giving rise to punitive damages." Id. § 1D–15(c); see also McAfee v. Howard Baer, Inc., No. 1:15 CV 182, 2018 WL 411339, *6 (W.D.N.C. Jan. 12, 2018); George v. Greyhound Lines, Inc., 708 S.E.2d 201, 208 (N.C. Ct. App. 2011).

a. Flowserve

Flowserve argues that plaintiff has presented no evidence that Flowserve's officers, directors, or managers participated in or condoned the alleged conducted to constitute an aggravating factor under § 1D–15(a). In response, plaintiff contends that Flowserve knowingly sold lethal asbestos-contaminating products to make a profit.

Plaintiff has failed to come forward with evidence that the officers, directors, or managers of Flowserve participated in or condoned the sale of a knowingly dangerous product. In her brief opposing summary judgment on this issue, plaintiff fails to cite to specific evidence to support this contention. (See Pl.'s Mem. Opp'n Summ. J. (DE # 268) at 21.) In her statement of material facts, plaintiff cites to a number of studies and articles demonstrating the negative health effects of asbestos. (See Pl.'s Statement of Material Facts (DE # 269) at 18-20.) However, plaintiff fails to point to evidence showing that Flowserve, through its officers, directors, or managers, was aware of these studies and articles, and therefore fails to show Flowserve's actual knowledge. See Lee v. CertainTeed Corp., No. 5:13-CV-826-FL, 2015 WL

4526165, *9 (E.D.N.C. July 27, 2015) (finding that the "evidence did not raise a genuine issue as to willful and wanton conduct because plaintiffs failed to show that defendants had actually read the articles referenced, or knew of the studies, or knew of the dangers of asbestos in the defendants' products[]"). As such, the court discerns there is no genuine issue of material fact regarding plaintiff's request for punitive damages against Flowserve. Flowserve's motion will be allowed on this issue.

b. John Crane

John Crane moves for summary judgment on the issue of punitive damages on the ground that plaintiff fails to offer any evidence of its aggravated conduct. In response, plaintiff asserts John Crane's behavior was willful and wanton because it sold asbestos-containing products for decades knowing the products were lethal. Specifically, plaintiff points to evidence that John Crane sold asbestos-containing products since the 1930s and had actual knowledge that asbestos was a health hazard from the 1970s. (See Pl.'s Statement of Facts (DE # 273) Ex. 8, at 43 (Q: All right sir. Do I understand correctly that John Crane first heard that asbestos could cause disease in about 1970? A: Yes.").) She also relies on evidence that as early as 1943, John Crane began using protective steps in the asbestos manufacturing process internally for employees and in 1951, became subject to the Walsh-Healey Act which designated asbestos as a hazardous material. (See id. at 16.) This evidence is sufficient to create a genuine issue of material fact regarding John Crane's knowledge.

Further, John Crane argues that a punitive damages award will have no deterrent effect on it because it has stopped producing asbestos products. John Crane argues that under North Carolina law, punitive damages can only be awarded when they deter the defendant from

committing a similar wrongful act. In response, plaintiff argues there is a deterrent effect on John Crane's behavior because it is "still alive" as a corporate entity.

While North Carolina law states that the purpose of punitive damages is to deter both the individual and others from future bad conduct, it does not require a claimant to prove the deterrent effect of the punitive damages. See Harrell v. Bowen, 655 S.E.2d 350, 352 (N.C. 2008); Rhyne v. K-Mart Corp., 594 S.E.2d 1, 13 (N.C. 2004); Cf. McGill v. Town of Coats, No. 5:12-CV-631-FL, 2013 WL 953929, *5 (E.D.N.C. Mar. 11, 2013) ("Because a decedent defendant can no longer be punished or deterred for whatever egregiously wrongful acts he may have committed the court held that a plaintiff may not assert a claim for punitive damages against that defendant's estate.") (internal quotation marks and citation omitted). As such, John Crane's motion will be denied on this ground.

If its motion as to punitive damages is denied, John Crane requests a bifurcated trial on the basis that it will be prejudiced if a jury considers evidence of punitive damages prior to a determination of its liability. In North Carolina,

> Upon the motion of a defendant, the issues of liability for compensatory damages and the amount of compensatory damages, if any, shall be tried separately from the issues of liability for punitive damages and the amount of punitive damages, if any. Evidence relating solely to punitive damages shall not be admissible until the trier of fact has determined that the defendant is liable for compensatory damages and has determined the amount of compensatory damages. The same trier of fact that tried the issues relating to compensatory damages shall try the issues relating to punitive damages.

N.C. Gen. Stat. § 1D–30.

On a defendant's motion pursuant to this statute, the court must bifurcate the compensatory damages phase of the trial from the punitive damages phase of the trial. Land v. Land, 687 S.E.2d 511, 517 (N.C. Ct. App. 2010). However, "[b]ifurcation is primarily procedural in nature; therefore, federal procedural law applies." Greenwood Motor Lines, Inc. v.

Saga Freight Logistics, LLC, No. 3:13-CV-529-RJC-DCK, 2015 WL 13610653, *1 (W.D.N.C. Oct. 9, 2015) (unpublished) (citing Rosales v. Honda Motor Co., 726 F.2d 259, 260 (5th Cir. 1984)). Accordingly, the court is not required to grant defendant's motion in accordance with N.C. Gen. Stat. § 1D-30 and will instead consider whether bifurcation is warranted under Federal Rule of Civil Procedure Rule 42(b). See id.

Rule 42 permits bifurcation "[f]or convenience, to avoid prejudice, or to expedite and economize." Fed. R. Civ. P. 42(b). A court is permitted considerable discretion in exercising its powers under this rule. F & G Scrolling Mouse, L.L.C. v. IBM Corp., 190 F.R.D. 385, 387 (M.D.N.C. 1999). "Notwithstanding the broad discretion conferred by [this rule], the bifurcation of issues and the separate trial of them is not the usual course of events." Id. Having fully considered John Crane's arguments, the court finds that it has not met its burden. Specifically, the court concludes given the number of defendants, bifurcation would not promote convenience or be conducive to expedition and economy.

4. Loss of Consortium

Flowserve also moves for summary judgment on the basis that any claim plaintiff asserts for loss of consortium is encompassed by the North Carolina wrongful death statute. However, plaintiff does not bring a standalone loss of consortium claim. Rather, she asserts loss of consortium damages under North Carolina's wrongful death statute, which is proper under North Carolina law. See Latka v. Miles, No. 7:14-CV-10-FL, 2015 WL 1410378, *7 (E.D.N.C. Mar. 26, 2015), aff'd, 615 F. App'x 122 (4th Cir. 2015). Thus, Flowserve's motion on the issue of loss of consortium will be denied.

B. Motions in Limine

To determine the admissibility of testimony under Rule 702 and Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579 (1993), a district court, as the gatekeeper, must ensure the proposed expert testimony "rests on a reliable foundation and is relevant to the task at hand." Nease v. Ford Motor Co., 848 F.3d 219, 229 (4th Cir.) (internal quotations omitted), cert. denied, 137 S. Ct. 2250 (2017). With respect to relevance, "the proposed expert testimony must have a valid scientific connection to the pertinent inquiry." Id.; see also Daubert, 509 U.S. at 591 ("The study of the phases of the moon, for example, may provide valid scientific knowledge about whether a certain night was dark, and if darkness is a fact in issue, the knowledge will assist the trier of fact. However . . . evidence that the moon was full on a certain night will not assist the trier of fact in determining whether an individual was unusually likely to have behaved irrationally on that night"). Simply put, the testimony must be helpful. See Fed. R. Evid. 702 (defining helpfulness as whether the evidence or testimony will assist the trier of fact to understand the evidence or to determine a fact at issue).

"With respect to reliability . . . the proffered expert opinion [must be] based on scientific, technical, or other specialized knowledge and not on belief or speculation, and inferences must be derived using scientific or other valid methods." Nease, 848 F.3d at 229 (internal quotation marks and citation omitted). Daubert provides four non-exhaustive factors for the district court to consider to determine reliability. Id.

> First, "a key question to be answered in determining whether a theory or technique is scientific knowledge that will assist the trier of fact will be whether it can be (and has been) tested." A second question to be considered by a district court is "whether the theory or technique has been subjected to peer review and publication." Publication regarding the theory bears upon peer review; "[t]he fact of publication (or lack thereof) in a peer reviewed journal will be a relevant, though not dispositive, consideration in assessing the scientific validity of a

> particular technique or methodology on which an opinion is premised." Third, "in the case of a particular scientific technique, the court ordinarily should consider the known or potential rate of error." Fourth. . ."general acceptance" is nonetheless relevant to the reliability inquiry. "Widespread acceptance can be an important factor in ruling particular evidence admissible, and a known technique which has been able to attract only minimal support with the community may properly be viewed with skepticism."

Id. (citations omitted) (alterations in original). The district court has "broad latitude" in determining whether these factors apply in a particular case. Id.

1. Holstein

Holstein is "a licensed physician in the commonwealth of Massachusetts" who is certified in Internal Medicine and "Preventative Medicine, with a subspecialty in Occupational Medicine." (Holstein Report (DE # 249-3) at 7.) From 1976 to 1984, Holstein was involved in the "original research on the health effects of asbestos." (Id.) As part of this research, Holstein "work[ed] under the direct supervision of Dr. Irving Selikoff, who was widely regarded as the foremost expert in the world on the health effects of asbestos until his death in 1992." (Id.) In 1984, Holstein opened a Preventative Medicine and Occupational Health consulting practice. Id. Including his clinical experience, records reviews, and x-ray reviews, Holstein has "evaluated over ten thousand patients with exposure to asbestos." (Id.) According to plaintiff, Holstein may offer expert opinion on Gore's exposure to asbestos, the conditions at the sites of Gore's exposure to asbestos, the health risks associated with asbestos, the general background levels of asbestos release, the scientific community's knowledge regarding asbestos and asbestos diseases, and specific opinions relating to asbestos fibers. (Holstein Disclosure (DE # 224) at 1-6.)

a. Dupont Company's Motion

Dupont Company moves to exclude Holstein's proffered expert opinion on "whether Dupont [Company] did anything wrong in the 1970s and 1980s in its efforts to protect [] Gore

from asbestos exposures in the context of OSHA regulations and other requirements in that time frame." (Dupont's Mem. Supp. (DE # 221) at 2; see also Holstein Disclosure (DE # 224) at 2.) Specifically, Dupont Company challenges Holstein's statement in his deposition for this case that "I think Dupont failed to put in place measures that would protect employees of contractors from exposure to asbestos on their premises." (Dupont's Mem. Supp. (DE # 221) at 6.) Dupont Company contends this opinion was derived from two sources: (1) the testimony of Gore regarding his work at Dupont and (2) a summary of Gore's exposure history prepared by plaintiff's counsel. (Id. at 2, 6; Dupont's Reply (DE # 282) at 3.) Dupont Company argues Holstein did not rely on important materials, such as the asbestos control policies and procedures that Dupont Company had in place in the 1970s and 1980s involving asbestos warnings, asbestos air monitoring records at Dupont, and Gore's employment records. (Dupont's Mem. Supp. (DE # 221) at 2-3.) According to Dupont Company, its records, as well as Daniel Construction company's records, were available to Holstein, but he failed to review them. (Id. at 7-9, 12; Dupont's Reply (DE # 282) at 4.) Further, Dupont Company contends that Holstein's occupational status does not qualify him to offer expert opinion on Dupont Company's history of regulatory compliance. (Dupont's Reply (DE # 282) at 6.)

In response, plaintiff contends the documents that Dupont Company insists Holstein should have reviewed to formulate his expert opinion were due on 24 February 2017, but were not produced by defense counsel until 13 March 2017. (Pl.'s Resp. Opp'n (DE # 270) at 2, 4.) Because Holstein's expert report was due two weeks after document production, plaintiff contends that in order to comply with the expert report deadline, Holstein did not have sufficient time to review these documents. (Id. at 4.) Nevertheless, even if these documents were timely produced, plaintiff argues that Dupont Company's corporate documents were not scientific data

that Holstein would need to rely upon to form his expert opinion. (Id. at 6.) Additionally, plaintiff argues Dupont Company mischaracterizes Holstein's testimony, which according to plaintiff, concerns general industry knowledge or "state of the art" testimony, and not testimony solely about Dupont Company's corporate documents. (Id. at 7; see Holstein Report (DE # 270-9) at 7-10.)

The court agrees with plaintiff that Holstein's expert opinion is properly characterized as state of the art testimony. State of the art testimony represents,

> all of the available knowledge on a subject at a given time, and this includes scientific, medical, engineering, and any other knowledge that may be available. State of the art includes the element of time: What is known and when was this knowledge available.

Horne v. Owens-Corning Fiberglas Corp., 4 F.3d 276, 281 (4th Cir. 1993) (citation omitted). State of the art evidence "is scientific in nature and results from a cumulative review of a field over time." Id. It is admissible in products liability and negligence actions. See id. (citing Rowan County Bd. of Educ. v. United States Gypsum Co., 407 S.E.2d 860, 871 (N.C. 1991), disc. rev. denied, 418 S.E.2d 648 (1992)).

Holstein testified as follows:[3]

Q: Based upon the work that you've done in this case regarding Mr. Gore's claims, do you have any opinions as to what you think DuPont may have done wrong?

A: I think DuPont failed to put in place measures that would protect employees of contractors from exposure to asbestos on their premises.

Q: And is that opinion based upon your reading of Mr. Gore's deposition testimony?

A: Yes, sir. Well—

Q: Any other basis?

[3] Dupont Company also challenged Holstein's expert disclosure prepared by plaintiff's counsel. Holstein's deposition (5 June 2017) (DE # 226) and subsequent expert report (31 March 2017) (DE # 225) took place after counsel submitted Holstein's expert disclosure form (6 March 2017) (DE # 224). Because the deposition and report encapsulate Holstein's opinions in his own words and were produced after counsel submitted the expert disclosure form, the court analyzes only these documents.

A: Yes. I mean, I wouldn't expect Mr. Gore to have known all the things that might have done or should have been done. So, obviously, there's a context here of my broader knowledge of this field.

(Holstein Dep. (DE # 226) at 16.) In forming his opinions regarding the industry knowledge, Holstein relied on upon "over 600 asbestos references, including [] Gore's medical records, pathology reports, his death certificate, medical billing records, his social security statement of earnings, the expert reports of Dr. Steven Compton and Dr. Richard Kradin, Plaintiff's Second Amended Complaint, discovery documents related to several entities, including John Crane documents available to him at the time he composed his report." (Pl.'s Resp. Opp'n (DE # 270) at 12; Holstein Dep. (DE # 270-25) at 4-5; Holstein Report Reliance Materials (DE # 270-9) at 41-87; Holstein Add. Reliance Materials (DE # 270-9) at 88.) To support his state of the art testimony, Holstein did not have a duty to rely upon any specific records, see Horne, 4 F.3d at 281 (finding state of the art evidence admissible when it is a cumulative review of a field over time), particularly documents that were not available in time for his review. Accordingly, Holstein is qualified to testify and give his opinion on the state of mind in the community about asbestos exposure given the materials he reviewed and his background. Dupont Company's motion will be denied.

b. John Crane's Motion

John Crane moves to exclude Holstein's testimony to the extent it is based on the "each and every exposure theory." (John Crane's Mem. Supp. (DE # 249) at 2.) Specifically, John Crane alleges Holstein will offer the opinion that Gore's occupational exposures to gaskets, packing, pumps, and valves, cumulatively constituted the direct and sole cause of mesothelioma. (Id.; see also (DE # 249-3) at 4.) John Crane argues this opinion conforms to the "each and every exposure" theory, which courts have rejected under Daubert. Additionally, if this expert

opinion testimony is not excluded, defendants contend that plaintiff will not have to prove the substantial factor in causation element of her case because it will be decided as a matter of law from Holstein's opinion. (John Crane's Resp. Opp'n (DE # 254) at 13; Def.'s Omnibus Resp. Opp'n (DE # 267) at 8.)

In response, plaintiff argues Holstein will not offer the opinion that every exposure to asbestos causes mesothelioma generally, or that it specifically caused Gore's mesothelioma. (Pl.'s Resp. Opp'n (DE # 253) at 1.) Instead, plaintiff states Holstein will testify that mesothelioma is caused by an individual's cumulative asbestos exposure and exposures which contribute to the individual's cumulative dose can be considered substantial factors if mesothelioma results. (Id.) Similarly, plaintiff claims Holstein's testimony is proper because he intends to explain the significance of the "each and every exposure" theory in terms of how it increased overall exposure, as opposed to every exposure causing mesothelioma. (Id. at 6; see also Holstein Report (DE # 253-8) Ex. 7 at 13.)

Mesothelioma follows a dose response relationship. See, e.g., Krik v. Crane Co., 76 F. Supp. 3d 747, 752 (N.D. Ill. 2014). "[T]he dose-response relationship is a relationship in which a change in amount, intensity, or duration of exposure to an agent is associated with a change—either an increase or decrease—in risk of disease." McClain v. Metabolife Int'l, Inc., 401 F.3d 1233, 1241–42 (11th Cir. 2005) (internal quotation marks and citation omitted). Given this relationship, scientists disagree on whether all asbestos exposures, or all exposures over the general public's exposure level (i.e. background level), contribute to the cumulative effect of exposure to establish legal causation. See Lindstrom v. A-C Prod. Liab. Tr., 424 F.3d 488, 493 (6th Cir. 2005) (if a court were to allow testimony about every exposure theory, it would "permit the imposition of liability on the manufacturer of any product with which a worker had the

briefest of encounters on a single occasion"); Krik, 76 F. Supp. 3d at 752 (rejecting plaintiff's expert opinion "that any exposure to asbestos, even the very first one, regardless of dosage is sufficient to cause asbestos-induced lung cancer" because there is no study that shows there is a known threshold or safe level of asbestos exposure).

As a result, courts have rejected the theory of causation known as the "each and every exposure" theory. See Sclafani v. Air & Liquid Sys. Corp., No. 2:12-CV-3013-SVW-PJW, 2013 WL 2477077, *4 (C.D. Cal. May 9, 2013) (unpublished) (finding the "each and every exposure" theory as reaching an impermissible legal conclusion); Anderson v. Ford Motor Co., 950 F. Supp. 2d 1217, 1223-24 (D. Utah 2013) (finding the "each and every exposure" theory "troubling" because experts do not have the scientific information to allow them to testify in further detail regarding a dosage that does pose a significant risk of mesothelioma). This theory is understood to be "that each and every exposure to asbestos by a human being who is later afflicted with mesothelioma, contributed to the formation of the disease." Smith v. Ford Motor Co., No. 2:08-CV-630, 2013 WL 214378, *1 (D. Utah Jan. 18, 2013) (unpublished); see Yates v. Ford Motor Co., 113 F. Supp. 3d 841, 846 (E.D.N.C. 2015) [hereinafter Yates II] (finding the opinion that "[e]ach and every exposure to asbestos that an individual with mesothelioma experienced in excess of a background level contributes to the development of the disease" is the "each and every exposure" theory). If experts were allowed to offer this opinion, it would "render the substantial factor prong of the causation test meaningless." Sclafani, 2013 WL 2477077, at *4; see Anderson, 950 F. Supp. 2d at 1222–23 (finding that this would imply specific causation regardless of the dose of the exposure or the type of fiber the individual was exposed to). The "each and every exposure" theory is also incompatible with the basic science of toxicology. See Krik, 76 F. Supp. 3d at 751 (finding that an opinion that a single fiber can be

substantially causative when the disease at issue is dose responsive scientifically inconsistent). However, courts have accepted similar expert testimony under Daubert "where a plaintiff relies on proof of exposure to establish that a product was a substantial factor in causing injury," if "the plaintiff [] show[s] a high enough level of exposure that an inference that the asbestos was a substantial factor in the injury is more than conjectural." Moeller v. Garlock Sealing Techs., LLC, 660 F.3d 950, 955 (6th Cir. 2011) (internal quotation marks and citation omitted).

Holstein's opinion that Gore's multiple cumulative exposures to gaskets, packing, and pumps, and valves, caused his mesothelioma is not based upon the "each and every exposure" theory. See Walashek v. Air Liquid Sys. Corp., No. 14CV1567 BTM (BGS), 2016 WL 614030, *6 (S.D. Cal. Feb. 16, 2016) (finding Holstein's testimony "that each exposure to asbestos contributes to the total dose of asbestos that causes mesothelioma, and as the total dose of asbestos increases, the average period necessary for the disease to develop shortens" not the "each and every exposure" theory); Yates II, 113 F. Supp. 3d at 846 (finding that the expert's theory was not the "each and every exposure" theory because nowhere in either of that expert's reports does he use the phrase "each and every exposure" or other equivalent phrases). While Holstein's testimony uses the phrase "each and every exposure," he uses it to explain his theory based upon an individual's cumulative dose. (Holstein Report (DE # 253-8), Ex. 7 at 13.) See Moeller, 660 F.3d at 955 (opinions which focus on the substantial contributing factors of mesothelioma, rather than each and every exposure, are permissible expert opinion). Holstein goes as far as to deny espousing the view of the "each and every exposure" theory in his opinion:

> The scientific evidence indicates that each and every exposure to asbestos increases the total exposure and that the progressively increasing cumulative exposure increases the risk of developing an asbestos-related disease, including mesothelioma and lung cancer. Moreover, each and every exposure, by increasing the cumulative exposure, shortens the average latency period for the appearance of asbestos-related diseases, including

> mesothelioma and lung cancer, on average . . . The best scientific evidence is that all *significant* exposures contribute to the causation of a subsequent mesothelioma or lung cancer. While theoretically possible, I do not believe that exposure to a single asbestos fiber will cause mesothelioma or any other asbestos disease. Nor do I believe that every *fiber* contributes to the development of mesothelioma. Rather, my opinion is that every *significant exposure* to asbestos contributes to cause mesothelioma and lung cancer.

(Holstein Report (DE # 253-8), Ex. 7 at 13.) Accordingly, John Crane's motion to exclude his testimony will be denied.

2. Kradin

Kradin is "a pulmonologist and pathologist licensed to practice in Massachusetts." (Kradin Report (DE # 249-2) at 2.) Kradin is certified in Internal Medicine, Anatomic Pathology, and Pulmonary Medicine. (Id.) Presently, Kradin is an Associate Physician and Pathologist at Massachusetts General Hospital, and an Associate Professor of Pathology and Medicine at Harvard Medical School. (Id.) At Harvard, Kradin directs postgraduate research on asbestos-related diseases. (Id.) Kradin has authored more than 100 articles, including articles specifically on asbestos-related diseases. (Id. at 3.) As a clinical physician, Kradin has personally reviewed hundreds of biopsies of asbestos-related malignancies, including malignant mesothelioma, and has performed numerous autopsies in patients with asbestos-related diseases. (Id.) Kradin may offer expert opinion on asbestos-disease causation, on generally accepted principles of asbestos exposure, and specifically as to Gore's exposure. (Id. at 3-20.)

Similar to Holstein, John Crane moves to exclude expert testimony by Kradin that exposure to each and every fiber of asbestos is a cause of Gore's mesothelioma. (John Crane's Mem. Supp. (DE # 249) at 2.) Specifically, John Crane contends Kradin will offer opinion that:

> mesothelioma is a cumulative dose response disease, that there is no safe level of asbestos exposure, that all occupational, domestic or para-occupational exposure to asbestos—even brief or low-level exposures—must be considered a cause of an

> individual's mesothelioma, there is no level of asbestos exposure above background levels that has been shown to not to contribute to causing mesothelioma.

(Id.)

Kradin's opinion does not reflect the "each and every exposure" theory. On the topic, Kradin offers his opinion as follows:

> If a person sustains asbestos exposures above background/ambient levels of exposure as reflected by an occupational, para-occupational and/or domestic asbestos exposure and goes on to develop mesothelioma, it is my opinion that the exposures above background levels, taken in context of the individual's total (cumulative) asbestos exposures, are significant and non-trivial, and are medical and scientific causes in the development of the individual's mesothelioma. In the legal context, such asbestos exposures are often described or classified as "substantial contributing factors" or "contributing causes" or "significant factors" to the development of the individual's mesothelioma. It is not my opinion that a "single fiber," or that "each and every" or "any" exposure to asbestos, even those below background levels, are a substantial contributing factor in causing mesothelioma. To the contrary, as noted above, a single day of exposure at the current OSHA PEL of 0.1 fl/cc equates to literally years of exposure to what the ATSDR reports as typical rural ambient asbestos exposures of 0.00001 fl/cc.

(Kradin Report (DE # 249-2) at 12.) Contrary to the "each and every exposure" theory, Kradin's opinion is "taken in context of the individual's total (cumulative) asbestos exposure[,]" (id.), otherwise known as the individual's dose, and does not assert that every single fiber above background level is a substantial contributing factor in causing mesothelioma, see Yates II, 113 F. Supp. 3d at 849 (finding the opinion that "there is no basis for accepting any workplace or non-occupational exposure to asbestos above ambient background as 'safe[]'" not each and every exposure theory). Further, Kradin's opinion does not render the substantial factor prong meaningless; it evaluates the total dose the person sustained by his or her individual exposures, accounting for the number of exposures over background level. Cf. Anderson, 950 F. Supp. 2d at 1222–23 (finding that "testimony that every exposure [decedent] had to an asbestos fiber contributed to the causation of his disease would imply specific causation regardless of the dose

of the exposure or the type of fiber to which [decedent] was exposed."). Thus, John Crane's motion to exclude his testimony will be denied.

3. Brody

Brody is a "Professor Emeritus in the Pathology Department at Tulane University Medical School" and an "Adjunct Professor at North Carolina State University in the Department of Molecular and Biomedical Sciences." (Brody Report (DE # 249-1) at 2.) Throughout his career, Brody has studied molecular biomedical science, which focuses on the genetic foundations of disease. (Id.) Since the 1970s, Brody's research has concentrated on how asbestos causes lung disease. (Id.) Brody has "published more than 150 articles in the peer-reviewed scientific literature dealing with lung cell biology, asbestos and lung disease[.]" (Id.) Brody may offer expert opinion regarding the cellular structure of asbestos, but will not testify specifically about Gore's exposures. (Id.)

Similar to Holstein and Kradin, John Crane moves to exclude Brody's expert testimony to the extent it is based on the "each and every exposure" theory. (John Crane's Mem. Supp. (DE # 249) at 2.) In response, plaintiff contends that Brody does not intend to offer an opinion that all exposures to asbestos cause mesothelioma, but rather, Brody will testify that every exposure above a background exposure level is part of the cumulative exposure which can cause mesothelioma. (Id. at 10; see also Brody Report (DE # 249-1) at 20.) Additionally, Brody will testify about the cellular structure of asbestos. (Pl.'s Resp. Opp'n (DE # 253) at 9.)

John Crane mischaracterizes Brody's opinion as based on the "each and every exposure" theory by not providing Brody's full opinion on the topic, which is:

Asbestos-Induced Cancers are Cumulative Dose Diseases

> 44. The asbestos-induced cancers are dose-response diseases, in that the more asbestos a person is exposed to, the more likely that person is to develop disease. In the case of a person who has developed an asbestos-related cancer, it is that individual's cumulative dose which has caused the disease. Lung cancer and mesothelioma are cumulative diseases. As asbestos exposures occur over time, some proportion of those fibers are retained in the lungs and can be translocated to the various sites where the diseases develop, and the genetic errors caused by asbestos fibers accumulate. Scientists have established that brief or low-level cumulative exposures to asbestos significantly increase the risk of developing mesothelioma. Asbestos exposures above background levels as short in duration as a few days can cause, or contribute to cause, mesothelioma.
>
> No Safe Level above Background
>
> 45. Asbestos is the only known environmental cause of mesothelioma in the United States. The consensus scientific opinion, as reflected by the conclusions of the IARC, WHO[,] NIOSH, CPSC, and others, is that no amount of exposure to asbestos above the background levels present in ambient air has been established as too low to induce mesothelioma. The mainstream scientific community is in consensus that there is no safe level of exposure to asbestos.

(Brody Report (DE # 249-1) at 20, 21.) Brody's opinion demonstrates that mesothelioma is a dose-responsive disease and an individual's increasing exposure increases his or her risk of developing mesothelioma. See McClain, 401 F.3d at 1241–42 ("[T]he dose-response relationship is a relationship in which a change in amount, intensity, or duration of exposure to an agent is associated with a change—either an increase or decrease—in risk of disease."); Krik, 76 F. Supp. 3d at 752 (finding when evaluating mesothelioma causation, an opinion that it is "theoretically possible that any amount of exposure could cause injury" reliable and different from the inadmissible opinion that a "particular level of dosage experienced by a plaintiff was sufficient to cause his or her particular injury"). Further, Brody does not seek to testify that each and every one of Gore's exposures caused his mesothelioma because he will not offer specific testimony about Gore. See Larson v. Bondex Int'l, No. 09-69123, 2010 U.S. Dist. LEXIS 123090, *8 (E.D. Pa. Nov. 15, 2010) (unpublished) (finding that Brody may testify to educate the jury on how asbestos contributes to disease, but not about specific causation in the case under Daubert). John Crane's motion will be denied.

4. Henshaw

Henshaw is a consultant in environmental and occupational health and safety. (Henshaw Report (DE # 218) at 3.) Henshaw graduated from the University of Michigan with a Master of Environmental Health Administration and Industrial Health in 1974. (Id.) From 1975 to 2001, Henshaw worked in environmental health, safety, and compliance for Monsanto, Solutia, and Astaris. (Id.) From 2001 to 2003, Henshaw was the Assistant Secretary of Labor for the United States Department of Labor's Occupational Safety and Health Administration. (Id.) Thereafter, he became a consultant. In his career, Henshaw has "conducted exposure monitoring and assessments for hundreds of compounds, [] ha[s] been responsible for collecting thousands of samples to assess worker exposures to potentially hazardous materials, including asbestos[,]" and "personally sampled for asbestos during gasket replacement activities and assessed worker exposures to asbestos while handling asbestos-containing gaskets and packing materials." (Id.) Henshaw may offer expert testimony relating to opinions concerning historical views and studies on asbestos in industrial hygiene settings, Gore's exposure to asbestos fibers, and John Crane's product warning.[4] (Id. at 24.)

First, plaintiff moves to limit Henshaw's opinions that "(1) chrysotile asbestos does not cause mesothelioma and/or there is a threshold or minimum exposure to chrysotile asbestos required to induce mesothelioma in humans, and (2) exposure to asbestos containing gaskets does not cause mesothelioma and/or did not cause [] Gore's mesothelioma."[5] (Pl.'s Mem. Supp.

[4] Henshaw compiled a second expert report solely for Dupont Company, as the premise liability defendant in this action. (See Dupont's Resp. (DE # 261) at 2.) This report does not offer opinion on matters which relate to any of plaintiff's motions. (Id.) As such, the court will not address this report.

[5] Plaintiff moves to exclude these two opinions as to "any defense expert" offering them. (Pl.'s Mem. Supp. (DE # 213) at 1.) Then in her briefing, plaintiff provides specific examples of the proposed expert testimony that she contends amounts to these opinions. The court will only evaluate the specific opinions plaintiff contests in her briefing and will not go beyond the scope of the proffered testimony on a fishing expedition.

(DE # 213) at 1-2.) Plaintiff seeks to limit the first opinion on the ground that there is no reliable scientific basis for the opinion that there is a minimum threshold for chrysotile asbestos to induce mesothelioma. (Id. at 4.) Plaintiff seeks to limit the second opinion on the ground that it is inconsistent with, as plaintiff argues, the widely accepted opinion in the scientific community that "asbestos is asbestos" and there is no safe level or threshold of acceptable exposure to any type of asbestos fiber below which mesothelioma will not occur. (Id. at 7.) Plaintiff contends that the defense experts reject the opinion that "asbestos is asbestos" and instead seek to introduce "wildly divergent opinions about the threshold for chrysotile asbestos to cause mesothelioma." (Id. at 4.) Additionally, plaintiff seeks exclusion under Federal Rule of Evidence 403, asserting that Henshaw's testimony will mistakenly lead the jury to conclude that there is a scientific basis for the opinion that chrysotile asbestos cannot cause mesothelioma unless it meets a minimum threshold. (Id. at 16.)

In response, defendants[6] argue that Henshaw is recognized around the world as an expert in his field, and the opinions that plaintiff seeks to exclude, specifically regarding the potency of chrysotile asbestos, have been accepted in federal and state courts around the country as scientifically reliable. (John Crane's Resp. Opp'n (DE # 254) at 2.)

It is significant to note that plaintiff seeks to limit Henshaw's opinions based on one statement Henshaw made in a past deposition in a different case: "chrysotile alone has not shown to increase risk of mesothelioma." (Pl.'s Mem. Supp. (DE # 213) at 4, 6.) "[T]he [c]ourt must base its opinion on the facts and testimony presented in this case, rather than on the testimony of experts in other cases." Yates II, 113 F. Supp. 3d at 847 (citing Krik, 76 F. Supp. 3d at 753).

[6] Defendants Armstrong International, Flowserve, Powell, and John Crane, adopt two responses in opposition to plaintiff's motion. (See DE ## 254, 262, 263, 267, 271, 276.)

Plaintiff does not point to a single opinion, report, or any other material of Henshaw's in this case that espouses this view, including his 20 June 2018 deposition. (John Crane's Resp. Opp'n (DE # 254-3) at 2.) That he may have provided the subject opinions in another case does not mean he will necessarily testify similarly in this case.

Second, plaintiff moves to exclude Henshaw's testimony on the ground that he is not asbestos expert, but rather an expert in asbestos litigation. (Pl.'s Mem. Supp. (DE # 212) at 2.) Plaintiff contends that the history of asbestos litigation consulting is biased: "Cardno ChemRisk and its scientists have a history of collaborating with defense attorneys to develop articles that appear on their face to be scientific, but are actually litigation products." (Id.) According to plaintiff, Cardno ChemRisk provides biased scientific research. (Id. at 9, 11-12.) Plaintiff argues that because Henshaw's research was funded by defendant John Crane, and in part by Cardno ChemRisk, his opinion is unreliable. (Id. at 9.) Outside of Henshaw's purported involvement with Cardno ChemRisk, plaintiff relies on the fact that Henshaw did not study asbestos in either undergraduate or graduate school. (Id. at 21-22.) Additionally, plaintiff argues Henshaw's testimony should be excluded under Federal Rule of Evidence 403 because of the risk of misleading the jury. (Id. at 24-25.)

In response, Flowserve contends Henshaw is qualified to render expert opinion in this case based on his training and experience. (Flowserve's Resp. Opp'n (DE # 252) at 2.) Further, Flowserve argues that any potential bias of Henshaw is not a proper basis to exclude his testimony under Daubert, but rather goes to his credibility. (Id. at 7-8.) Flowserve argues plaintiff fails to object to Henshaw's specific methodology or opinions in this matter. (Id. at 9.) Defendant John Crane also filed a response in opposition, reiterating much of Flowserve's arguments.

Henshaw is qualified as an expert in this case. Despite the fact that some of Henshaw's publications are from his experience working as a litigation consultant, Henshaw has significant experience in the environmental health field. See Carroll v. John Crane, Inc., No. 15-cv-373, 2017 U.S. Dist. LEXIS 105556, *19 (W.D. Wis. July 7, 2017) (unpublished) (where the court found "Henshaw [] qualified to offer expert opinion testimony regarding Mr. Carroll's exposure to asbestos in this case, having gained sufficient relevant experience over the course of his career[.]"). The court agrees with defendant that any bias he may have can be explored on cross-examination. Plaintiff's motion will be denied.

5. Madl

Madl is a toxicologist who works at Cardno ChemRisk as its Senior Principal Health Scientist. (Madl Report (DE # 217-9) at 3.) Madl graduated from the University of California, Davis with a Ph.D. in Pharmacology and Toxicology in 2010. (Id.) As part of her career, Madl has "published over 75 abstracts, book chapters, and peer-reviewed papers on various occupational and environmental exposure, toxicology, and risk-related topics" and published 13 asbestos-related publications. (Id. at 2-4.) Madl seeks to offer expert opinion on asbestos causation, including her study of workers replacing asbestos-containing gaskets and packing within valves, as well as others' studies of workers involving gaskets and packing materials with asbestos. (Id. at 14.) John Crane is the sole defendant who seeks to offer Madl's expert testimony. (See John Crane's Rep. (DE # 258) at 1; Dupont's Resp. (DE # 261) at 1-2; Flowserve's Sur Resp. (DE # 265) at 1; Flowserve's Resp. (DE # 252) at 1.)

Similar to Henshaw, plaintiff moves to exclude testimony of Madl on the ground that she is not an asbestos expert, but an expert in asbestos litigation. (Pl.'s Mem. Supp. (DE # 212) at 2). Plaintiff points to John Crane's funding of research and/or manuscripts for 5 of Madl's 13

peer-reviewed publications. (Id. at 10.) Plaintiff contends Madl's background in asbestos did not begin until after she started working for Cardno ChemRisk, and she does not have experience from her Master's program studying asbestos. (Id. at 21.)

In response, John Crane raises much of the same argument it made as to Henshaw. (John Crane's Resp. (DE # 258) at 3-6.) Specifically, as to Madl, John Crane contends her experience in the field of toxicology qualifies her as an expert, and she has performed peer reviewed research on the health effects of exposure to asbestos. (Id. at 9.)

Madl's significant toxicology experience is reliable to qualify her as an expert in this case. Of significance, the court finds that despite the fact that some of Madl's publications were financed by John Crane, her articles have been subsequently peer reviewed in the scientific community. See Daubert v. Merrell Dow Pharm., Inc., 43 F.3d 1311, 1317–18 (9th Cir. 1995) ("That the research is accepted for publication in a reputable scientific journal after being subjected to the usual rigors of peer review is a significant indication that it is taken seriously by other scientists, i.e., that it meets at least the minimal criteria of good science."). The other issues plaintiff raises with Madl's testimony can be addressed on cross-examination. Plaintiff's motion will be denied.

6. Roggli

Roggli is a Professor of Pathology at Duke University. (Roggli's Report (DE # 254-4 at 2.) He intends to offer opinion as to the causation of Gore's mesothelioma, through a causation report, and as to Roggli's diagnosis, from his diagnostic report. (Id. at 4.) He intends to offer the opinion that Gore's exposure to chrysotile asbestos in gaskets or packing materials did not cause or contribute to the development of Gore's mesothelioma. (Id.)

Similar to Henshaw, plaintiff moves to limit Roggli's expert opinions to the extent he claims "(1) chrysotile asbestos does not cause mesothelioma and/or there is a threshold or minimum exposure to chrysotile asbestos required to induce mesothelioma in humans, and (2) exposure to asbestos- containing gaskets does not cause mesothelioma and/or did not cause [] Gore's mesothelioma." (Pl.'s Mem. Supp. (DE # 213) at 1-2.) Roggli testified,

> Q: As a hypothetical, if you assume that Mr. Gore was performing the same type of gasket and packing work that he described in his deposition or that has been described through the attorneys that have retained you in giving and providing you case information, if those gaskets and packing contained crocidolite, would that change the opinions that you've written in your report about the chrysotile and gaskets and packing not being capable of causing mesothelioma? . . .
>
> A: Yeah, I would say it's certainly possible. The basis for that is that with chrysotile, it requires 7 to 10 fiber cc years. At the level of exposure you get from gaskets and packing it would take exposures more than 70 to 100 years. For crocidolite containing gaskets, it would take considerable less time, and so it's possible that one might accumulate sufficient exposure from crocidolite gaskets and/or packing to be contributory. So its possible.

(Roggli Dep. (DE # 254-2) at 5.) Roggli further testified:

> Q: Are there studies that they cite to regarding gasket removal in which your opinion would be that if those gaskets contained crocidolite they would place an individual at an increased risk? . . .
>
> A: Yeah, it would depend upon the duration of exposure, the levels of exposure. My understanding from industrial hygienist studies are from use of gaskets and packing are low, below the current PEL. So depending upon what the precise level is that you're assuming the exposures were, that would determine how many years it would take before you could reach a level of crocidolite that would significantly increase the risk of mesothelioma.
>
> Q: Okay. And you testified in the past that that level for exposure to crocidolite, it would have to surpass .015 fiber cc years in order for it to be *capable of doubling the risk of mesothelioma*. Is that right?
>
> A: That's correct.
>
> Q: Okay. With respect to amosite asbestos, what's the number again? Is it .08?
>
> A: .075.
>
> Q: .075. Sorry.

And your chrysotile number, has that changed at all? What's that?

A: No. It's the same, 7 to 10 fiber cc years.

(Id. at 4 (emphasis added)).

Here, Roggli opines about the increased risk of asbestos exposure in the gasket as it relates to crocidolite or chrysotile, in order to quantify how many years it will take before it reaches a level that would significantly increase the risk of mesothelioma. That opinion is not the same as what plaintiff challenges. See Yates II, 113 F. Supp. 3d at 848 (finding an expert's opinion on risk as not positing causation). Thus, plaintiff's motion will be denied.

III. CONCLUSION

For the foregoing reasons, defendant Powell's motion for summary judgment is DENIED (DE # 206); defendant Flowserve's motion for summary judgment is DENIED IN PART and ALLOWED IN PART (DE # 229); and defendant John Crane's motion for summary judgment is DENIED (DE # 236). Plaintiff may not recover any damages attributable to Valtek products or any punitive damages of Flowserve. Additionally, plaintiff's motion in limine to exclude unreliable causation opinions of defendant's experts is DENIED (DE # 205); plaintiff's motion in limine to exclude testimony of defense experts Henshaw and Madl is DENIED (DE # 211); defendant Dupont Company's motion in limine to exclude opinion testimony of Holstein is DENIED (DE # 216); and defendant John Crane's motion in limine to exclude expert testimony premised on the "every exposure counts" theory of causation is DENIED (DE # 248). The Clerk

is DIRECTED to schedule a final pretrial conference no earlier than 45 days from the filing of this order.

This 21 September 2018.

W. Earl Britt
Senior U.S. District Judge