

**UNITED STATES DISTRICT COURT  
MIDDLE DISTRICT OF FLORIDA  
TAMPA DIVISION**

ARNOLD EDMONDS,

Plaintiff,

v.

Case No: 8:22-cv-825-CEH-SPF

AIR & LIQUID SYSTEMS  
CORPORATION, et al.,

Defendants.

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**ORDER**

This asbestos products liability suit comes before the Court on Defendant Valves and Controls US, Inc.'s<sup>1</sup> *Daubert* Motion to Exclude or Limit the Testimony and Opinions of Dr. David Zhang (Doc. 297) and Defendant Warren Pumps, LLC's *Daubert* Motion to Exclude or Limit Certain Causation Testimony and Opinions of David Zhang, MD (Doc. 299). Plaintiff filed a combined response in opposition (Doc. 312) and Defendants reply (Docs. 330, 333). Upon due consideration, the Court will grant-in-part and deny-in-part the motions, as detailed below.

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<sup>1</sup> This Defendant was formerly known as Atwood & Morrill Co., Inc., and is referred to in the briefing, expert report, and this Order as "Atwood."

## BACKGROUND<sup>2</sup>

Plaintiff Arnold Edmonds served aboard the *USS Saratoga* (an aircraft “supercarrier”) from 1962–1964. Doc. 1-1 ¶ 8; Doc. 297 at 4. While on the ship, he was allegedly exposed to asbestos, as a result of which he contracted non-small cell lung carcinoma. Doc. 1-1 ¶¶ 12–29. He filed suit against more than twenty<sup>3</sup> companies and manufacturers of parts and machinery on the *USS Saratoga* under theories of negligence and strict liability. *Id.*

*Dr. David Zhang, M.D.*

Defendants seek to exclude or limit the testimony of Plaintiff’s expert witness Dr. David Zhang, M.D. Docs. 297, 299. Dr. Zhang is a licensed physician specializing in Pathology and Occupational Medicine who has taught at various medical schools and now practices occupational medicine in New York. *Id.* at 2. Additionally, he has conducted basic and clinical cancer research, including studies on lung cancer and malignant mesothelioma. *Id.* In addition, he has published over a hundred peer-reviewed manuscripts, chapters, and books, including a book focusing on “Asbestos-Related Health Effects.” *Id.*

His six-page report draws on his experience as an occupational physician and researcher to opine on the cause of Plaintiff’s illness, considering his asbestos

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<sup>2</sup> The Court limits its recitation of the background facts to those necessary for consideration of the instant Motions.

<sup>3</sup> All defendants besides Atwood and Warren have been dismissed.

exposure history, pathological analyses, medical records, and relevant scientific literature. Doc. 202-5 at 7.

In addition, Dr. Zhang reviewed Plaintiff's pathological studies and reports, other medical records, complaints, discovery responses, and deposition transcripts. *Id.* The report detailed Plaintiff's occupational history, as well as his asbestos exposure while in the Navy, subsequent work environments, and at home. *Id.* at 3–4. It also noted Plaintiff's history of smoking and family history of cancer. *Id.* at 4. Dr. Zhang then summarized Plaintiff's prior relevant medical imaging and pathology reports from numerous facilities, as well as his own pathology findings based on samples from Plaintiff. *Id.* at 5–6.

The instant Motions largely object to opinions in the last two pages of the report. *Id.* at 6–7. In that final section, Dr. Zhang opined that Plaintiff had “a history of significant level of asbestos exposure and radiologically documented asbestosis and pleural plaque.” *Id.* at 6. He noted the results of a CT scan suggesting a malignancy in Plaintiff's lung, which led to his diagnosis of lung cancer at age 80. *Id.* at 7. Dr. Zhang opines that:

In this context, Mr. Edmonds' primary lung cancer is related to asbestos exposure and the cumulative exposure of each asbestos-containing product significantly contributed to the development of his lung cancer.

*Id.*

Next, the report noted that studies have established a strong correlation between lung cancer and asbestos exposure and identified lung cancer as the “most common asbestos-induced malignancy.” *Id.* Dr. Zhang went on to list numerous

organizations that have recognized asbestos as a potent carcinogen and cause of other associated diseases. *Id.* Finally, the report explained that many studies have demonstrated an increased risk of lung cancer from asbestos exposure combined with smoking, but that asbestos workers who cease smoking experience a dramatic drop in risk, approaching that of non-smokers after 30 years. *Id.*

Dr. Zhang began the final paragraph by stating that, based on his review of:

[Plaintiff's] exposure history, literature and [Dr. Zhang's] experience as an occupational physician, there is no doubt that workers, such as [Plaintiff], who routinely handled and were in the vicinity of other workers who worked on boilers, turbines, pumps, valves, steam traps, blowers, drywall, joint compound, automotive materials, gaskets, packing materials, and insulating materials, etc. and performed this work without dust control, have the significant levels of asbestos exposure.

*Id.*

Next, he stated that the presence of “asbestosis and pleural plaques” confirm significant higher levels of past asbestos exposure. *Id.* He noted that epidemiologic studies have demonstrated that these levels of exposure, factoring in “proximity, intensity, frequency and duration,” are known to cause human lung cancer. *Id.* Dr. Zhang also considered other potential causes of lung cancer, including smoking, in concluding that asbestos exposure was a substantial contributing factor to Plaintiff's illness.

Finally, Dr. Zhang opined:

Taken together, it is my opinion within a reasonable degree of medical and scientific certainty that Mr. Edmonds has asbestos-related lung cancer. It is my further opinion to a reasonable degree of medical certainty that all of Mr. Edmonds' asbestos exposures increased his risk

of asbestos-related lung cancer in a cumulative, dose related manner and that all of Mr. Edmonds' exposures that are found to be regular, frequent and proximate were substantial contributing factors to the development of his asbestos-related lung cancer, asbestosis and pleural plaque.

*Id.*

### LEGAL STANDARD

Federal Rule of Evidence 702 governs the admissibility of expert testimony and provides as follows:

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if the proponent demonstrates to the court that it is more likely than not that:

- (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
- (b) the testimony is based on sufficient facts or data;
- (c) the testimony is the product of reliable principles and methods; and
- (d) the expert has reliably applied the principles and methods to the facts of the case.

Fed. R. Evid. 702. Rule 702 is a codification of the United States Supreme Court's decision in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993). In *Daubert*, the Supreme Court described the gatekeeping function of the district court to "ensure that any and all scientific testimony or evidence is not only relevant, but reliable." *Id.* at 589; *see also United States v. Frazier*, 387 F.3d 1244, 1260 (11th Cir. 2004) (*en banc*). The Court extended its reasoning in *Daubert* to non-scientist experts in *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 141 (1999).

In performing its gatekeeping function, the Eleventh Circuit has stated that district courts must consider whether:

(1) the expert is qualified to testify competently regarding the matters he intends to address, (2) the methodology by which the expert reaches his conclusions is sufficiently reliable as determined by the sort of inquiry mandated in *Daubert*, and (3) the testimony assists the trier of fact, through the application of scientific, technical, or specialized expertise, to understand the evidence or to determine a fact in issue.

*Frazier*, 387 F.3d at 1260 (quoting *City of Tuscaloosa v. Harcros Chems., Inc.*, 158 F.3d 548, 562 (11th Cir. 1998)). Thus, the three discrete inquiries to determine the admissibility of expert testimony are qualifications, reliability, and relevance. *Quiet Tech. DC-8, Inc. v. Hurel-Dubois UK Ltd.*, 326 F.3d 1341 (11th Cir. 2003). Although there is some overlap among these inquiries, they are distinct concepts that the Court and litigants must not conflate. *Id.*

“The admission of expert testimony is a matter within the discretion of the district court, which is afforded considerable leeway in making its determination.” *Frazier*, 387 F.3d at 1258. The gatekeeper role, however, is not intended to supplant the adversary system or the role of the jury: instead, “[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.” *Daubert*, 509 U.S. at 596. “The judge’s role is to keep unreliable and irrelevant information from the jury because of its inability to assist in factual determinations, its potential to create confusion, and its lack of probative value.” *Allison v. McGhan Med. Corp.*, 184 F.3d 1300, 1311–1312 (11th Cir. 1999).

Regardless of whether Florida law or maritime law is applied, Plaintiff will ultimately be required to prove specific causation as to each defendant—i.e., that his exposure to asbestos from each defendant’s products was a substantial factor in causing his injury. *Lindstrom v. A-C Product Liability Trust*, 424 F.3d 488, 492 (6th Cir. 2005), *overruled on other grounds by Air and Liquid Sys. Corp. v. DeVries*, 586 U.S. 446, 139 S. Ct. 986, 203 L.Ed.2d 373 (2019); *Christopher v. Cutter Labs.*, 53 F.3d 1184, 1191 (11th Cir. 1995) (“[P]laintiffs must show [it] is more likely than not that the defendant's act was a substantial factor in bringing about the injury.”) (applying Florida law) (citations omitted).

## DISCUSSION

Both Warren and Atwood seek exclusion of Dr. Zhang’s testimony for similar reasons. Atwood argues that they are irrelevant, unhelpful, do not comport with maritime law, and are therefore inadmissible. It argues that Dr. Zhang fails to opine that Atwood valves in particular were a substantial cause of Plaintiff’s illness. Atwood further argues that Dr. Zhang’s opinion that the totality of exposures caused Plaintiff’s lung cancer is not product- or defendant-specific and therefore not probative of whether Atwood valves were a substantial contributing factor to his injury. Atwood also challenges Dr. Zhang’s “cumulative exposure” methodology as unscientific, unreliable, and widely rejected. It argues that his qualitative causation analysis was not properly applied to Atwood products, and that there would be no way for Dr. Zhang to perform such an analysis because he lacks evidence regarding the proximity, intensity, frequency, and duration of Plaintiff’s Atwood-based

exposure. Finally, Atwood argues that Dr. Zhang’s conclusion that Plaintiff exhibits radiologically-documented asbestosis lacks a factual basis and is inadmissible hearsay.

Warren similarly seeks exclusion of the opinions as irrelevant, contrary to maritime and Florida law, and unhelpful to the jury for understanding the evidence or determining specific causation. It argues that Dr. Zhang’s “cumulative exposure” opinions cite no valid methodology and are thus inadmissible. Warren also argues (like Atwood) that Dr. Zhang did not apply the relevant benchmarks of proximity, intensity, frequency, and duration to Plaintiff’s alleged exposure from Warren pumps—and that he lacks the foundation to do so based on Plaintiff’s deposition testimony.

Plaintiff responds that neither Dr. Zhang’s qualifications nor the relevance and reliability of his testimony were rebutted. First, he argues that Dr. Zhang is unquestionably qualified to opine on the medical causation of asbestos-related disease. Next, he argues that the testimony fits this case and would help the trier of fact understand complex topics. Plaintiff argues that other courts have admitted expert testimony based on cumulative exposure theories and that Dr. Zhang’s causation opinions are reliable. Plaintiff asserts that his methodology is distinct from the “every exposure” theory and based on reliable principles, methods, and evidence. As to the hearsay arguments, Plaintiff responds that Dr. Zhang did not base his opinions solely on another expert’s report, and that an expert may rely on hearsay



anyway. Lastly, he argues that the probative value of Dr. Zhang's opinions substantially outweighs any danger listed in Federal Rule of Evidence 403.

Defendants reply by reiterating their arguments regarding fit, relevance, methodology and arguing that numerous opinions lack a sufficient factual basis.

Upon careful review of the pleadings and exhibits, the Court will grant-in-part and deny-in-part Defendants' motions. To the extent Defendants: (1) cite distinguishable case-law; (2) mischaracterize Dr. Zhang's methodology as an improper "each and every exposure" theory; or (3) cite to cases that applied the summary judgment standard, their motions will be denied. However, Defendants correctly argue that Dr. Zhang has no apparent basis for concluding that Plaintiff suffered from radiologically documented asbestosis. Additionally, the Court agrees that one of Dr. Zhang's opinions applies an unreliable methodology and is therefore inadmissible under *Daubert*.

Besides those two points, Dr. Zhang's opinions pass muster under *Daubert* and Rule 702. Defendants' motions will thus otherwise be denied.

#### **A. Atwood's Motion (Doc. 297)**

Atwood first notes that Dr. Zhang does not proffer any causation opinions specific to Atwood products. *Id.* at 14–15. Instead, it argues, he offers generic and irrelevant opinions that the "cumulative exposure of each asbestos-containing product significantly contributed to" the development of Plaintiff's lung cancer, and that exposures "found to be regular, frequent and proximate" were substantial

contributing factors to his illness. *Id.* at 15 (citing Dr. Zhang’s report, Doc. 202-5 at 6).

Atwood argues that this says nothing about whether Plaintiff’s alleged exposure to its products was a substantial contributing factor to his illness, which Atwood describes as “the key specific causation issue that Dr. Zhang was retained to address.” Doc. 297 at 15. Citing no authority, Atwood argues that these opinions “will not help the jury connect the dots for . . . causation with *respect to Atwood*,” and are therefore inadmissible. *Id.*

Atwood further argues that maritime law requires a medical causation expert “to opine that the *defendant’s product* caused the plaintiff’s injury,” and that Dr. Zhang’s “cumulative-exposure opinion” should be excluded. *Id.* at 15–16. Atwood also challenges Dr. Zhang’s methodology as improperly generic, citing *Shelton v. Air & Liquid Sys. Corp.*, 610 F. Supp. 3d 1280, 1286 (N.D. Cal. 2022) to argue that he failed to evaluate exposure to each defendant’s products or employ sufficient qualitative or quantitative methodology. *Id.* at 16–18.

Atwood next argues that Dr. Zhang’s cumulative exposure opinion uses faulty methodology, and that myriad federal and state courts have ruled that the “every/each exposure” theory and the cumulative exposure variant are unscientific, unreliable, and unhelpful in establishing substantial-factor causation. *Id.* at 19–22. Lastly, Atwood argues that Dr. Zhang had no foundation from which to opine that Plaintiff had a history of “radiologically documented asbestosis” and was not qualified to make an independent radiology opinion. *Id.* at 23–24. Finally, it argues

that his opinion that Plaintiff has pleural plaque is inadmissible because it is based solely on the report of another expert who is not listed as a witness in this case. *Id.* at 24–25.

Plaintiff responds that Dr. Zhang’s causation opinions should be admitted. Doc. 312 at 9. Specifically, he argues that the testimony would help a jury understand that the type of exposure Plaintiff experienced was “enough to be substantial as to each Defendants’ products.” *Id.* Plaintiff argues that hearing Dr. Zhang’s testimony would help the jury “interpret the testimony as to frequency, proximity, and duration” and reach a conclusion. *Id.* He argues that Dr. Zhang supports his conclusions with citations to peer-reviewed studies demonstrating increased occurrence of lung cancer at specific low-dose levels. *Id.* Furthermore, Plaintiff argues that Dr. Zhang uses a valid cumulative exposure theory distinct from the “every exposure” theory, which claims all possible exposures to asbestos, no matter how minimal, caused Plaintiff’s illness. *Id.* at 11.

Plaintiff contends that Defendants’ caselaw is distinguishable and that they conflate the “each and every exposure” and cumulative exposure theories of causation. *Id.* at 15. Finally, Plaintiff argues that Dr. Zhang’s pleural plaque opinions were not inadmissible hearsay because they were not based solely on another expert’s report. *Id.* at 16–17. Moreover, he argues they would not be inadmissible anyway, under Federal Rule of Evidence 703. *Id.* Plaintiff further argues that the testimony’s probative value substantially outweighs any Rule 403 danger, and that the “frequency, proximity, duration” test Defendants reference is an issue for

summary judgment. *Id.* at 17–19. In reply, Atwood again argues that Dr. Zhang’s opinions do not fit the case, are not relevant, and do not employ a valid methodology. Doc. 330.

The Court will grant Atwood’s motion to exclude in part, as described below. Otherwise, the Court finds that Dr. Zhang’s opinions more likely than not meet the admissibility requirements of Rule 702.

### **Methodology**

First and foremost, Atwood attacks Dr. Zhang’s methodology, claiming that the “cumulative exposure” theory of causation has been rejected in dozens of cases and should likewise be rejected here. Doc. 297 at 3, 19–23 (citing *Carpenter v. 3M Co.*, CV 20-11797-MWF, 2022 WL 17885688, at \*12-14 (C.D. Cal. Dec. 13, 2022)).

Plaintiff responds that other courts have admitted “cumulative exposure theories.” Doc. 312 at 7 (citing *Dugas v. 3M Co.*, No. 3:14-cv-1096-BJD-JBT, 2016 U.S. Dist. LEXIS 195139, (M.D. Fla. Jan. 11, 2016); *Berman v. Mobil Shipping & Transp. Co.*, 2019 U.S. Dist. LEXIS 55671, at \*31-35 (S.D.N.Y. Mar. 27, 2019)). He contends that courts have distinguished improper “testimony suggesting that a *de minimis* exposure to asbestos could cause mesothelioma” from “testimony that each *significant* exposure to asbestos could be a cause.” *Id.* at 8 (citing *Neureuther v. Atlas Copco Compressors, L.L.C.*, No. 13-cv-1327-SMY-SCW, 2015 U.S. Dist. LEXIS 110169, at \*16 (S.D. Ill. Aug. 20, 2015)).

Here, Plaintiff contends that Dr. Zhang's causation opinions are admissible and fit "the facts of the case because [they] explain how [Plaintiff's] exposure to each Defendants' products was a substantial factor in his development of lung cancer."<sup>4</sup> *Id.* at 9. Plaintiff also argues that Dr. Zhang "explicitly linked his causation opinions to the type of asbestos gasket and packing exposures . . . attributed to each different Defendant." Doc. 312 at 9.

Atwood points out the specific portions of the report it objects to. *Id.* Specifically, these are Dr. Zhang's opinions that:

1. "the cumulative exposure of each asbestos-containing product significantly contributed to the development of [Plaintiff's] lung cancer" (Doc. 202-5 at 7)
2. "It is my further opinion . . . that all of [Plaintiff's] asbestos exposures increased his risk of asbestos-related lung cancer in a cumulative, dose related manner and that all of [Plaintiff's] exposures that are found to be regular, frequent and proximate were substantial contributing factors to the development of his asbestos-related lung cancer, asbestosis and pleural plaque." (Doc. 202-5 at 6).

Atwood attacks cumulative exposure theory generally by arguing that it is a variant of the widely discredited "each and every exposure theory," which posited that every exposure to asbestos should be considered a cause of injury based on scientific uncertainty about the specific dosage that causes injury. Doc. 297 at 20.

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<sup>4</sup> This assertion in Plaintiff's response is unclear, as Dr. Zhang makes no such assertion "as to each [Defendant's] products" in his report, and such an assertion (without more) would in fact appear to be an improper application of the cumulative exposure theory under *Daubert*. Defendant argues as much in its reply, stating that "Dr. Zhang does *not* opine that Plaintiff's alleged exposure to asbestos from *Atwood* valves was a substantial factor." Doc. 330 at 9. Complicating things further, Plaintiff and Defendants largely fail to provide specific citations to the portions of the report they are referencing in their briefing of these motions.

Atwood argues that in *McIndoe v Huntington Ingalls, Inc.*, 817 F. 3d 1170, 1173 (9th Cir. 2016), the Ninth Circuit applied maritime law to reject the “every exposure theory” because it failed to consider the portion of exposure attributable to particular defendants’ products and rendered the substantial-factor test meaningless. Doc. 297 at 20.

Before considering whether Dr. Zhang’s methodology was improper, the Court briefly discusses the two theories at issue. The Court next considers some of the authority cited by each side, before moving on to the arguments specific to Dr. Zhang’s report. It should be noted at the outset that courts do not rule on *Daubert* challenges based on how one side or the other *labels* the theory, but instead based on analysis of the expert opinions at issues and the substance of the expert’s methodology.

First, the “each and every exposure” theory espouses the view that “because science has failed to establish that any specific dosages of asbestos causes injury, every exposure to asbestos should be considered a cause of injury.” *Yates v. Ford Motor Co.*, 113 F.Supp.3d 841, 846 (E.D.N.C. 2015) (“Also referred to as ‘any exposure’ theory, or ‘single fiber’ theory, it represents the viewpoint that, because science has failed to establish that any specific dosage of asbestos causes injury, every exposure to asbestos should be considered a cause of injury.”); *Betz v. Pneumo Abex, LLC*, 615 Pa. 504, 544, A.3d 27, 31 (Pa. 2012) (noting the report of plaintiffs’ causation expert concluded that each exposure is “a substantial contributing factor in the development of the disease that actually occurs” and did not assess the plaintiffs’

individual exposure history “as this was thought to be unnecessary, given the breadth of the any-exposure theory”).

A significant number of jurisdictions have found the “each and every exposure” theory to be unreliable. *See, e.g., McIndoe*, 817 F.3d at 1177; *Martin v. Cincinnati Gas & Elec. Co.*, 561 F.3d 439, 443 (6th Cir. 2009); *Yates*, 113 F. Supp. 3d at 846 (listing jurisdictions); *In re New York City Asbestos Litig.*, 48 N.Y.S.3d 365, 370, 148 A.D.3d 233 (2017); *Betz*, 44 A.3d at 53 (stating that the trial court “was right to be circumspect about the scientific methodology underlying the any-exposure opinion. [The court] . . . was unable to discern a coherent methodology supporting the notion that every single fiber from among, potentially, millions is substantially causative of disease”).

The cumulative exposure theory, according to Defendants, developed after the “each and every exposure” theory had been widely discredited. Doc. 297 at 20–21. As described by one court, it holds that “cumulative exposure to asbestos is the cause of the disease, but because each exposure, no matter how small, adds to that cumulative exposure, each exposure becomes a substantial contributing factor.” *Barabin v. Scapa Dryer Fabrics, Inc.*, No. C07-1454JLR, 2018 WL 840147, at \*13 (W.D. Wash. Feb. 12, 2018). The *Barabin* court rejected the theory as unreliable because it “contains the same reliability problems that the ‘every exposure’ theory does”—namely that “every exposure becomes a substantial factor based on one fact alone: that it was part of the total dose.” *Id.*

*Authority*

Much of Defendant’s authority is readily distinguishable. First, *Carpenter* held that (the very same) Dr. Zhang’s testimony was insufficient to establish a genuine issue of fact as to causation under the substantial-factor test—not that it should be excluded under *Daubert* or Fed. R. Evid. 702.<sup>5</sup> 2022 WL 17885688 at \*15–18. Atwood fails to explain how *Carpenter* supports exclusion of Dr. Zhang’s testimony under *Daubert*.

Most of Plaintiff’s authority and arguments are no more convincing. He argues that the cumulative exposure theory differs from the “every exposure” theory. Doc. 312 at 11. Without elaboration, Plaintiff argues that the cumulative exposure theory is “embraced throughout the asbestos medical and legal worlds as scientifically sound” and that the Middle District of Florida has yet to “dispose of the every exposure theory” either. *Id.* at 11–12. Plaintiff’s broad claims about the state of the law do little to shed light on the issues here. And review of the eight decisions Plaintiff includes in a footnote (Doc. 312 at 1 n.63) shows that “cumulative exposure” theories—while found to be admissible in some cases—must be scrutinized in terms of how nuanced (or generic) they are, and consequently whether they are reliable. Therefore, it is inaccurate to say that the cumulative exposure

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<sup>5</sup> Atwood acknowledges that *Carpenter* found Dr. Zhang’s opinion to be “insufficient to establish specific causation” because it was “not defendant-specific[.]” Doc. 297 at 16.



theory has been widely accepted in the caselaw (in its simplest form, as described in *Barabin*, 2018 WL 840147 at \*13).<sup>6</sup>

Plaintiff also cites *Bobo v. TVA*, 855 F.3d 1294, 1301 (11th Cir. 2017), arguing the *Daubert* motions there were “strikingly similar,” and that the Eleventh Circuit affirmed a trial court’s admission of a causation opinion that “all ‘significant exposures to asbestos ‘contribute to cause mesothelioma.’” Plaintiff zeroes in on Dr. Zhang’s second statement, noting that he too included language specifying that those “exposures that are found to be *regular, frequent and proximate* were substantial contributing factors to the development of his asbestos-related lung cancer, asbestosis and pleural plaque.” Doc. 312 at 14 (emphasis added). Given these caveats, as well as Dr. Zhang’s consideration of Plaintiff’s duties on the *Saratoga* and the types of products he was around, Plaintiff argues the opinion was based on reliable principles and methods. *Id.* at 15.

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<sup>6</sup> Plaintiff cites a number of cases in which variants of cumulative exposure opinions survived scrutiny. In *Berman v. Mobil Shipping & Transp. Co.*, 2019 U.S. Dist. LEXIS 55671 at \*33, for example, the Court took care to note that the variant of cumulative exposure theory it allowed held that “any exposure above [a] background [level] . . . increases [a] person’s risk of developing mesothelioma,” which is not the same as saying that every exposure was a substantial contributing factor to the disease. The next case in Plaintiff’s string-cite also emphasized that the expert in question stated that “any exposure above background . . . increases [a] person’s risk” of illness. *Relyea v. Borg Warner Corp.*, No. 12-cv-3564 (DLC), 2015 WL 5567034, at \*2 (S.D.N.Y. Sept. 22, 2015).

*Neureuther v. Atlas Copco Compressors, L.L.C.*, No. 13-cv-1327-SMY-SCW, 2015 U.S. Dist. LEXIS 110169, at \*16 (S.D. Ill. Aug. 20, 2015), another case Plaintiff cites, found more broadly that the cumulative exposure theory at issue was acceptable under *Daubert* because the expert considered “Plaintiff’s occupational history, and his ultimate conclusion is that Plaintiff’s exposures were not trivial.” *Id.* However, this out-of-circuit 2015 trial court opinion applied Illinois law, and its holdings that the “each and every exposure” theory and the cumulative exposure theory are permissible under *Daubert* appear anomalous and are unpersuasive in light of the body of caselaw the Court has reviewed.

Atwood replies that *Bobo* is irrelevant and distinguishable. Doc. 330 at 6; Doc. 333 at 10. “Irrelevant” goes too far. Although the plaintiff in *Bobo* argued a theory of take-home asbestos exposure and illness based on laundering her spouse’s workwear for twenty-two years, that factual distinction does not change the fact that *Bobo* applied *Daubert* to a cumulative exposure opinion in an asbestos case.

Warren also argues that the expert in *Bobo* opined as to “asbestos attributable to [the defendant employer]” while Dr. Zhang “cites no record evidence that [Plaintiff’s] alleged exposure to asbestos attributable to *Warren pumps* was substantial.” Doc. 333 at 10. Again, Defendants’ arguments carry little weight. Rather than substantively distinguishing Dr. Zhang’s theory from the theory in *Bobo*, they pick out minor factual differences or make arguments unsupported by the caselaw (*i.e.*, that because Dr. Zhang does not mention *Warren pumps* in a certain part of his opinion, his opinion is *per se* inadmissible). Ultimately, as described below, the Court will exclude one of Dr. Zhang’s two key challenged statements.

The Court agrees with Defendants on one general point. The “cumulative exposure theory,” to the extent it holds that even a *de minimis* exposure to asbestos can be a substantial cause of asbestos-related cancer without considering any other factors is unreliable and therefore inadmissible. Plaintiff has not established that such an opinion is more likely than not reliable and can be reliably applied to the facts of a case. And to the contrary, the overwhelming body of law before the Court indicates otherwise. *See, e.g., Yates*, 113 F. Supp. 3d at 846 (listing jurisdictions holding the

same for the “each and every exposure” theory); *See Krik v. Exxon Mobil Corp.*, 870 F.3d 669, 677 (7th Cir. 2017) (“[M]ore than thirty other federal courts and state courts have held that this cumulative/‘any exposure’ theory is not reliable.”); *Carpenter*, 2022 WL 17885688, at \*12 (holding the same as to the “cumulative exposure theory”).

The Court’s inquiry does not end there, however, as Plaintiff argues that Dr. Zhang did not apply this theory at all. Having reviewed the report and caselaw cited by both sides, Opinion Two survives *Daubert* scrutiny, but Opinion One does not.

**Statement One** (Doc. 202-5 at 3–6)

1. “the cumulative exposure of each asbestos-containing product significantly contributed to the development of [Plaintiff’s] lung cancer”

As Atwood argues, this first statement does not consider “whether exposure to asbestos attributable to a specific defendant’s product [such as Atwood valves] can plausibly be deemed substantial based on the amount, frequency, and duration of that exposure.” Doc. 297 at 17. Therefore, this opinion is unreliable for the same reason Courts have widely rejected the “each and every exposure theory” and certain broad versions of the “cumulative exposure theory.” That is because under such a theory, the “cumulative exposure to asbestos is the cause of the disease, but because each exposure, no matter how small, adds to that cumulative exposure, each exposure becomes a substantial contributing factor.” *Barabin*, 2018 WL 840147 at \*11. Such a theory is unreliable under either Florida law or maritime law because it does not require the expert to “attempt to analyze [a Defendant’s] particular

exposure or the degree to which it increased his risk of mesothelioma” and ignores the dose-response relationship. *Doolin v. Ford Motor Co.*, No. 3:16-cv-778-MMH-PDB, 2018 WL 4599712, at \*13-14 (M.D. Fla. Sept. 25, 2018).

Plaintiff’s vague argument that the two relevant theories are distinct, and that the cumulative exposure theory was admitted in other cases is unconvincing. *See, e.g.*, Doc. 312 at 7. Plaintiff argues that Dr. Zhang’s report does not “includ[e] every exposure as a potential cause of mesothelioma” and that upon hearing his testimony, the jury will be able to “interpret” the testimony as to frequency, proximity, and duration. Doc. 312 at 7–9.

This argument is contradicted by the report itself. Statement One does in fact include every exposure as a potential exposure. Dr. Zhang set no boundaries or framework on what types of exposures can substantially contribute to illness. And Plaintiff fails to address the fact that the first statement does not include language: (1) stating that each of the exposures may have increased the risk of Plaintiff contracting lung cancer; or (2) that the amount, frequency, and duration of Plaintiff’s exposure must be considered to decide causation. Plaintiff’s own caselaw wherein some version of a cumulative exposure theory survived a *Daubert* challenge, as discussed *supra*, in all but one case included one of these two kinds of clarifying statements.<sup>7</sup>

Although Plaintiff appears to respond that Dr. Zhang’s opinion also considered Plaintiff’s work history, finding that “Mr. Edmonds worked with

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<sup>7</sup> This is true for all the cases besides *Neureuther v. Atlas Copco Compressors, L.L.C.*, No. 13-cv-1327-SMY-SCW, 2015 U.S. Dist. LEXIS 110169, at \*16 (S.D. Ill. Aug. 20, 2015), which the Court declines to follow for the reasons described above at n.5.

Defendants' products enough such that his exposure to each Defendant's product, was a substantial factor in causing his lung cancer" (Doc. 312 at 11), this does not save Statement One from essentially just rewording the "each and every exposure" theory, which is unreliable.

One of the cases Atwood cites is persuasive as to this opinion. Atwood argues that Dr. Zhang's opinions "should be excluded for precisely the same reasons that Dr. Holstein's opinions were excluded in" *Shelton v. Air & Liquid Sys. Corp.*, 610 F. Supp. 3d 1280, 1286 (N.D. Cal. 2022). Doc. 297 at 18. There, the causation expert concluded that the plaintiff's "cumulative exposures to asbestos in connection with his repair and maintenance work of the ships were sufficient to have contributed to his overall dose of asbestos, which was the direct and sole cause of his malignant mesothelioma." *Shelton*, 610 F. Supp. 3d at 1284. The expert report proceeded to list each defendant and conclude that, based on the evidence, each defendant's products were a substantial factor in causing Plaintiff's illness. *Id.*

*Shelton* excluded this opinion because the expert "[did] not employ any method, much less one scientific or reliable, for determining whether [Plaintiff's] exposure to any of the defendants' products was significant, and thus, could be a substantial factor in causing his mesothelioma." 610 F. Supp. 3d at 1286. Essentially, *Shelton* ruled that the causation expert skipped a step in finding that the plaintiff's exposures to each defendant's products were a substantial factor in causing the plaintiff's illness. *Id.* at 1285–1287. That skipped step was a determination, using reliable methodology, that plaintiff's exposure to each product was "significant." *Id.*

at 1286. Likewise, in Statement One, Dr. Zhang makes a finding that the products of each Defendant were a significant contributing factor to Plaintiff's cancer but fails to employ any method for determining whether his exposure to any of the defendants' products was significant in the first place. Plaintiff therefore fails to show that Dr. Zhang more likely than not employed a reliable methodology in reaching this conclusion, and the opinion in Statement One is inadmissible under *Daubert*.

Consequently, Dr. Zhang will be barred from expressing the opinion in Statement One to the jury, as Plaintiff has not established that the testimony is the product of reliable principles and methods; or that Dr. Zhang reliably applied such principles and methods to the facts of the case.

**Statement Two** (Doc. 202-5 at 7).

2. "It is my further opinion to a reasonable degree of medical and scientific certainty that all of Mr. Edmonds' asbestos exposures increased his risk of asbestos-related lung cancer in a cumulative, dose related manner and that all of Mr. Edmonds' exposures that are found to be regular, frequent and proximate were substantial contributing factors to the development of his asbestos-related lung cancer, asbestosis and pleural plaque."

The second opinion, however, is sufficiently reliable to survive *Daubert*. It includes caveats that other persuasive decisions suggest are material and can be the difference between a reliable methodology and an unreliable one. In particular, this opinion notes that Plaintiff's exposures all "increased his risk" of illness "in a cumulative, dose related manner" and that those exposures "found to be regular, frequent and proximate were substantial contributing factors" to the development of his illnesses. Doc. 202-5 at 7. Defendants provide no convincing argument for

striking this testimony as unreliable, and as mentioned in the context of Statement One, similar opinions based on a cumulative exposure theory have been admitted—as long as the expert opined that such exposures merely increased an individual’s risk of contracting mesothelioma, and/or where the expert clearly considered dose and whether exposures were “regular, frequent and proximate” in rendering a causation opinion. Dr. Zhang included both caveats. Therefore, this opinion will not be excluded.

### **Asbestosis and Pleural Plaque**

Apart from attacking Dr. Zhang’s methodology, Atwood argues that he lacked a foundation for his opinion that Plaintiff had a history of radiologically documented asbestosis. Doc. 297 at 23 (citing Dr. Zhang’s report, Doc. 202-5 at 5). Plaintiff presents no counterargument. *See* Doc. 312.

One aspect of establishing reliability under *Daubert* is showing a reliable foundation or basis for an expert’s opinion. *MidAmerica C2L Inc. v. Siemens Energy Inc.*, No. 20-11266, 2023 WL 2733512, at \*9 (11th Cir. Mar. 31, 2023) (citing *Frazier*, 376 F.3d at 1265). When a proponent of expert testimony is unable to link an expert’s methodology (or lack thereof) to his conclusions, the Eleventh Circuit has upheld the exclusion of such evidence. *Id.*; *see also Hughes v. Kia Motors Corp.*, 766 F.3d 1317, 1329–30 (11th Cir. 2014).

Here, as Defendants argue, the chest CT report Dr. Zhang describes in a section titled “Summary of Image Study Reports” concluded that there was “[n]o evidence for bilateral moderate-to-severe asbestosis.” Doc. 202-5 at 5. This is the sole

mention of the condition besides Dr. Zhang's opinion, which concluded that Plaintiff had a "history of . . . radiologically documented asbestosis." Considering the lack of a foundation for this opinion, and Plaintiff's failure to respond to Atwood's argument, the Court will bar Dr. Zhang from presenting any testimony regarding Plaintiff's alleged history of radiologically documented asbestosis.<sup>8</sup>

### **Hearsay**

Atwood argues that Dr. Zhang improperly opined that Plaintiff has pleural plaque, based on the report of another physician who is not listed as a witness in this case, which constitutes inadmissible hearsay. Doc. 297 at 24. Plaintiff responds that under Federal Rule of Evidence 703, an expert may base an opinion on facts or data in the case that the expert has been made aware of or personally observed. Doc. 312 at 16–17. Further, he argues that "[i]f experts in the particular field would reasonably rely on those kinds of facts or data in forming an opinion on the subject, they need not be admissible for the opinion to be admitted." *Id.* (citing Fed. R. Evid. 703). Plaintiff asserts that in addition to the other report, Dr. Zhang reviewed Plaintiff's CT scans and referenced numerous studies discussing the use of such scans to reach an asbestos-related diagnosis or assessment. *Id.* Defendants do not address this argument in their reply.

Atwood's authority is distinguishable and the Court will reject its argument. First, *United States v. Scrima*, 819 F.2d 996, 1002 (11th Cir. 1987), indeed refused to

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<sup>8</sup> Because the Court excludes this opinion testimony for lack of foundation, it need not address Defendant's arguments that Dr. Zhang is "not qualified to make an independent radiology opinion." Doc. 297 at 23–24.



allow expert testimony in on the grounds that it was hearsay and “not the type of evidence reasonably relied upon by experts in the particular field in forming opinions or inferences on the subject.” *Id.* (citation omitted). The core issue in that criminal tax evasion case was whether the proponent had made a showing that “qualified accountants customarily rely on statements to casual business acquaintances when calculating net worth.” *Id.* Here, in contrast, the Court is faced with one physician-expert relying on another physician’s interpretation of imaging. This is just the type of evidence reasonably relied upon by medical experts in forming opinions.

The other (non-binding) case Atwood cites deferred ruling on whether an expert in a patent suit could testify as to certain hearsay “under the guise that his opinions are based on such inadmissible evidence” to introduce facts about the sales dates, details, and functionality of certain products. *Indus. Eng'g & Dev., Inc. v. Static Control Components, Inc.*, No. 8:12-CV-691-SCB-MAP, 2014 WL 4986482, at \*2–3 (M.D. Fla. Oct. 6, 2014). This case is distinguishable as the Court has no reason to believe Dr. Zhang’s conclusions about Plaintiff’s pleural plaque is an improper attempt to introduce underlying inadmissible evidence. Therefore, Defendants’ hearsay-based arguments must be rejected.

#### **B. Warren’s Motion (Doc. 299)**

Warren’s motion mostly mirrors Atwood’s. It argues that Dr. Zhang improperly opines that the totality of Plaintiff’s exposures caused his lung cancer, rather than that exposure to Warren pumps specifically caused it. Doc. 299 at 2. Warren also argues the opinions are irrelevant, contrary to maritime and Florida

law, and will not help the jury understand the evidence or determine specific causation as to Warren. *Id.*

Like Atwood, Warren also argues that Dr. Zhang bases his opinions on an invalid “cumulative exposure” methodology that the Court should reject. *Id.* at 3. It makes the same arguments Atwood made regarding Dr. Zhang’s opinions as to asbestosis and pleural plaques.

To the extent Warren underscores that Dr. Zhang proffers no opinions regarding Warren pumps, or that Plaintiff has failed to establish exposure or substantial-factor causation as to Warren specifically, this would be a relevant argument at summary judgment, not on a *Daubert* motion. Doc. 299 at 16.

Where Warren challenges Dr. Zhang’s “generic cumulative/total exposure opinions” as unreliable or unhelpful, the Court relies on its earlier ruling on Atwood’s similar challenges. Dr. Zhang’s opinion that each of Plaintiff’s exposures significantly contributed to his illnesses (without consideration of any other factors) will be excluded because Plaintiff fails to show that, more likely than not, this opinion is based on a reliable methodology. His second statement, however, will not be excluded, because it more likely than not is reliable (and satisfies *Daubert*’s other requirements, as described below). Finally, Warren’s arguments based on *Carpenter* are unconvincing, as that case applied the summary judgment standard. Doc. 299 at 17–18.

Warren does expand somewhat on Atwood’s cumulative exposure theory arguments. Doc. 299 at 23. It argues that Dr. Zhang’s “cumulative exposure

opinions . . . lump all exposures products and defendants together, and are not based on a qualitative or quantitative analysis of Plaintiff's exposure to asbestos" from Warren products, and thus will not give the jury "concrete and scientifically-sound benchmarks with which it can determine the ultimate legal conclusion as to whether the exposure [to a particular product] was a substantial factor in causing" Plaintiff's illness. *Id.* (citing *Carpenter*, 2022 WL 17885688, at \*16). Warren argues that this unreliable theory "invites the jury to place wholesale blame" on any defendant present at trial and shortcuts Plaintiff's burden of proving specific causation as to each defendant. *Id.*

Plaintiff does not respond specifically to Warren's rephrasing of the argument, but his earlier briefing applies. *See* Doc. 312. Namely, he argued that Defendants' cases are distinguishable and that Dr. Zhang's methodology differs from the "each and every exposure" theory and improper "cumulative exposure." *Id.* at 7–11, 15.

The Court's previous analysis applies here. Dr. Zhang's first opinion is inadmissible under *Daubert* because he—without consideration of duration, intensity, or other scientific variables—improperly opined that any product to which Plaintiff was exposed, in any amount, was a substantial contributor to his illness. As numerous other courts and jurisdictions have concluded, this type of specific causation opinion is unreliable and inadmissible under *Daubert*.

The second statement, on the other hand, uses clarifying language that is sufficient to satisfy *Daubert*, noting that Dr. Zhang believed to a reasonable degree of medical certainty that all of Plaintiff's exposures "increased his risk of asbestos-

related lung cancer in a cumulative, dose related manner” and that those exposures “found to be regular, frequent and proximate” substantially contributed to the development of his illnesses. Doc. 202-5 at 7. Therefore, the Court will not exclude the second formulation of the opinion.

### **General Causation**

Warren, unlike Atwood, seeks exclusion of Dr. Zhang’s “general causation” opinions as well. Doc. 299 at 15–19. It is unclear whether Warren refers to Dr. Zhang’s “general causation” opinions (*i.e.*, his opinions on “[t]he potential of an agent to produce the general occurrence of injuries in a population”)<sup>9</sup> or if it is attacking his opinions as overly “general.” Either way, Warren’s arguments are unsupported by authority.

First, Warren argues in a subheading that Dr. Zhang’s opinions are “inadmissible because they are irrelevant, contrary to applicable causation law, and will not help the jury decide whether Plaintiff’s alleged exposure to asbestos from products used with *Warren Pumps* was a substantial factor in causing his lung cancer.” *Id.* at 15. Warren cites *Shelton v. Air & Liquid Sys. Corp.*, 610 F. Supp. 3d 1280, 1286 (N.D. Cal. 2022) (as did Atwood) for the proposition that an expert must analyze the facts specific to each of the defendants in a case, including their products.

Citing no authority, Warren then argues that any opinions Dr. Zhang provided regarding Plaintiff’s “overall, total and cumulative” exposure while in the Navy are “irrelevant and inadmissible.” Doc. 299 at 16. It emphasizes that Dr.

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<sup>9</sup> CAUSATION, Black’s Law Dictionary (11th ed. 2019).

Zhang provided no opinions specific to Warren products, or regarding whether Plaintiff's alleged exposure was frequent, regular, and proximate. *Id.* Warren also tosses out a conclusory argument that “[t]here is little doubt that irrelevant general causation opinions – opinions that will not assist the jury in deciding specific causation – are inadmissible under *Daubert*, Rule 702, maritime law, Florida law and *Thurmon*.”<sup>10</sup>

To the extent Warren cites *Shelton* in the context of Dr. Zhang's specific causation opinions, the Court refers to its reasoning for excluding Statement One. Warren makes no convincing argument regarding *Shelton*'s applications to Statement Two or the rest of Dr. Zhang's report.<sup>11</sup>

### **C. *Daubert* Factors**

Finally, the Court returns to the factors that the Eleventh Circuit suggests proponents of expert testimony should meet to survive a *Daubert* challenge. These are whether: (1) the expert is qualified to testify competently regarding the matters he intends to address; (2) the methodology by which the expert reaches his conclusions is sufficiently reliable as determined by the sort of inquiry mandated in *Daubert*; and

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<sup>10</sup> Earlier in its motion, Warren cites *Thurmon v. Georgia Pacific, LLC*, 650 Fed. Appx., 752, 757 (11th Cir. 2016), an unpublished Eleventh Circuit opinion, for the proposition that a plaintiff must prove exposure to a particular defendant's product. That non-binding opinion dealt with Georgia law and an appeal of a district court's grant of summary judgment in favor of a defendant. It has no clear relevance to this *Daubert* challenge.

<sup>11</sup> The rest of Warren's cited authority is no more persuasive. To the extent it cites *Carpenter*, the Court refers to its discussion of why those cases are distinguishable *supra*. To the extent it challenges Dr. Zhang's two distinct specific causation opinions for the same reasons Atwood did, the Court has already ruled on these arguments, excluding one opinion and allowing the second.

(3) the testimony assists the trier of fact, through the application of scientific, technical, or specialized expertise, to understand the evidence or to determine a fact in issue. *Frazier*, 387 F.3d at 1260.

Dr. Zhang's qualifications are unchallenged, and the Court sees no reason to doubt that he is qualified to testify competently regarding the causation of Plaintiff's illnesses based on his extensive education, experience, and training.<sup>12</sup> *City of Tuscaloosa v. Harcross Chems., Inc.*, 158 F.3d 548, 563 (11th Cir. 1998).

As to reliability, the Court refers to its ruling on Dr. Zhang's two specific opinions above. Finally, Defendants fail to persuasively argue that Dr. Zhang's testimony would not be helpful to the trier of fact. Instead, the Court finds that Dr. Zhang's opinions will likely be helpful to the jury based on his qualifications, experience, and analysis of the records, evidence, and Plaintiff's pathology slides, and based on his expertise as an occupational medicine physician and researcher.

In sum, Defendants' motions are granted as to two points: Statement One, identified above, will be excluded as unreliable. Additionally, Dr. Zhang's opinion regarding radiologically determined asbestosis will be excluded for lack of foundation. Otherwise, Plaintiff has successfully established that Dr. Zhang's expert opinions should be admitted under *Daubert* and Federal Rule of Evidence 702.

The remainder of Defendants' arguments are rejected, and the motions are otherwise denied without prejudice.

Accordingly, it is **ORDERED**:

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<sup>12</sup> Dr. Zhang's qualifications are outlined in his report. *See* Doc. 202-5 at 2.

1. Defendant Valves and Controls US, Inc.'s *Daubert* Motion to Exclude or Limit the Testimony of and Opinions of Dr. David Zhang (Doc. 297) is **GRANTED-IN-PART and DENIED-IN-PART**, as described in this order.
2. Defendant Warren Pumps, LLC's *Daubert* Motion to Exclude or Limit Certain Causation Testimony and Opinions of David Zhang, MD (Doc. 299) is **GRANTED-IN-PART and DENIED-IN-PART**, as described in this order.

**DONE and ORDERED** in Tampa, Florida on September 3, 2024.

  
Charlene Edwards Honeywell  
United States District Judge

Copies furnished to:

Counsel of Record