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Henry T. January, et al. v. Koppers, Inc., et al.

Expert Witness

Court examined the issue of whether plaintiff's expert employed a proper methodology to establish general causation as to plaintiff's toxic tort claims.

No. GD 04-006970. In the Court of Common Pleas of Allegheny County, Pennsylvania, Civil Division.
Ignelzi, J.—July 18, 2022.

MEMORANDUM OPINION AND ORDER OF COURT
Re: Defendants' Joint *Frye* Motion to Exclude Plaintiffs' Expert's General Causation Opinions

AND NOW, to-wit, this 18th day of July 2022, upon receipt, review, and consideration of: Defendants' Joint Brief in Support of Frye Motion to Exclude Dr. Zhang's General Causation Opinions with Respect to Prebake Aluminum Smelting Workers (ECF[1] 297); Plaintiffs' Brief in Opposition to Defendants' Frye Motion Seeking to Exclude Dr. Zhang's General Causation Opinions Regarding Lung and Bladder Cancer Among Prebake Aluminum Smelter Workers (ECF 301); Plaintiffs' Appendix in Support of Plaintiffs' Brief in Opposition (ECF 302); Defendants' Joint Sur-Reply Brief in Support of Frye Motion (ECF 303); Oral Argument of December 2, 2021, Transcript filed February 1, 2022 ("Tr."); associated pleadings, exhibits, and the record herein; applicable Pennsylvania caselaw governing toxic tort causation and methodology including Walsh Est. of Walsh v. BASF Corporation, 234 A.3d 446 (Pa. 2020); Rost v. Ford Motor Company, 151 A.3d 1032 (Pa. 2016), and Betz v. Pneumo Abex LLC, 44 A.3d 27 (Pa. 2012); application of the Frye[2] Test per Pa.R.Civ.P. 207.1; and this Trial Court's Memorandum Opinion upon remand from the Pennsylvania Supreme Court in Walsh, infra, at Walsh v. BASF, GD10-018588, Op. 11/15/2021 at ECF 379, 170 PLJ No. 2, pp. 7-15 (January 28, 2022), petition for permission to appeal denied per curiam at 3 WDM 2022 (Pa. Super. 2022) (affirming trial court Frye hearing protocol);[3] this Court submits the following Memorandum Opinion and enters the attached Order of Court.

I. Procedural Summary

This toxic tort action was commenced by Writ of Summons (ECF 1) on March 31, 2004. Plaintiffs' Complaint was filed on April 13, 2004 (ECF 2). In or about December 2020, this undersigned Trial Court was assigned the case.[4] This Court notes that on March 7, 2017, the Honorable Robert J. Colville entered a Memorandum Opinion and Order that the Court would "conduct a Frye hearing . . . to examine the methodology supporting the opinions proffered." See (Opinion and Order at 291). Judge Colville's March 7, 2017 Opinion preceded our Pennsylvania's Supreme Court Opinion in Walsh, infra, issued in 2020. As such, this Court has the benefit of our Supreme Court's guidance and will apply the same to the matter herein.

It is an understatement to assert that this matter has a lengthy history with the extensive pre-trial thrusts and parries of counsel related to complex scientific matters in a legal context consuming time and resources of the Allegheny County Court of Common Pleas and previous jurists assigned to this case. This case has not reached trial for over eighteen years. At present, the legal maxim "justice delayed is justice denied"[5] is apt. An entire generation has passed since the filing of this legal action.

To be clear, per Walsh this Court will not act as scientific clearinghouse nor engage in extraneous nuance combing through thousands of pages of complex scientific literature to affirm or disavow an expert's conclusions as lawyers dance epidemiological angels on the head of an epistemological pin perpetuating the consumption of Court resources.[6]

As per Walsh, this Court is constrained to evaluate an expert's methodology and it behooves parties to assure that their experts' reports (and counsel's Frye Motion pleadings) are clear on their face as to the methodology/methodologies employed or challenged. This Court will not entertain deep dives into scientific rabbit holes for which it is not properly equipped nor qualified to perform. In the final analysis, a proffered expert proceeds at their own peril if their report or testimony is not clear to the fact-finder on its face as related to the methodology employed. By the same token, the Court will not unduly entertain submersive intellectual dives into complex scientific literature to cobble together a rationale for a proponent's Frye Motion challenge. To echo the sentiment of Justice Potter Stewart in Jacobellis v. Ohio, 378 U.S. 184, 197 (1964) (J. Stewart, concurring), this Court will know renegade or novel science when it sees it.[7] Cf. Grady v. Frito-Lay, Inc., 839 A.2d 1038 (Pa. 1976) (consumer failed to show methodology underlying his expert witness's conclusion concerning the composition and characteristics of the tortilla corn chips had general acceptance in the relevant scientific community).[8]

The issue currently before this Court is whether Plaintiffs' Expert, David Zhang, M.D., employed a proper methodology to establish general causation as to Plaintiffs' toxic tort claims.

On December 7, 2020, this Court entered an Order (ECF 300) setting forth the briefing schedule regarding Defendants' General Causation Frye Motion. On September 23, 2021, upon completion of the parties' briefing, this Court entered an Order (ECF 304) setting Oral Argument for December 2, 2021. The transcript of the Oral Argument was filed February 1, 2022.

II. Factual Background

This Court recapitulates the lengthy recitation of facts already contained numerous times in the record as follows: Plaintiffs, former Alcoa employees, claim they developed either lung or bladder cancer from occupational exposure to Polycyclic Aromatic Hyrdrocarbons ("PAHs") as result of the aluminum smelting process. PAHs are combusted from the use of Coal Tar Pitch Volatiles ("CTPVs") in the smelting process. CTPVs are an established carcinogen-related substance.[9] There are two types of smelting processes used in the aluminum smelting industry: 1) the Söderberg Process; and 2) the Prebake Process.[10] Defendants assert that the Frye issue before this Court relates to the Aluminum Smelting Prebake Process. Defendants assert that the Prebake Process does not combust PAHs to a level that would cause the cancers. See (ECF 297, charts at pp. 19, 25).[11]

III. General Causation Experts

Defendants claim Plaintiffs' Expert, David Zhang, (pathology and occupational environmental medicine)[12] did not establish an association between CTPV and Cancer – in the context of the Prebake Smelting Process – before engaging the Bradford Hill Methodology. See (ECF 297). Defendants assert:

> After over 50 years of research, there is still no clear association between cancer risk and employment among prebake smelter workers. Plaintiffs' general causation expert, Dr. Zhang, does not dispute this fact. To the contrary, he conceded

> at his deposition that the findings with respect to prebake workers are "premature." This should have ended Dr. Zhang's analysis. Instead, he forged ahead with a general causation opinion based on his prediction of what future studies of prebake workers may hold. Dr. Zhang's opinions with respect to these workers are inadmissible because the methodology he employed in reaching them is not generally accepted in the relevant scientific community. Dr. Zhang's methodological flaws include:
>
> 1. improperly applying the Bradford Hill criteria for causation without first satisfying the criteria's explicit threshold requirement for application of the criteria itself, namely, that a "perfectly clear-cut" association "beyond what we would care to attribute to the play of chance" exists between prebake workers and cancers of the lung and bladder;
>
> 2. attempting to circumvent the Bradford Hill criteria's explicit threshold requirement for application of the criteria by improperly extrapolating from studies of Soderberg workers to infer a general causal association among prebake workers;
>
> 3. improperly relying upon rank speculation to predict that future studies of prebake workers might support his opinions; and
>
> 4. improperly relying on summary compilations of the literature, rather than conducting a critical review of the individual studies that had been included in the compilations.

Defendants' Joint Brief in Support of Frye Motion, (ECF 297 at 5-6).

In support of Defendants' Joint Motion to Exclude Plaintiffs General Causation Expert, Defendants have presented two expert reports of Graham Gibbs, Ph.D. ("Gibbs") (epidemiology and medical statistics). See Gibbs June 2016 Report, (ECF 297, Appendix, Exh. E) and Gibbs July 14, 2016 Report, (ECF 297, Appendix, Exh. F). In essence, Defendants' Joint Motion boils down to "whether Dr. Zhang's use of the Bradford Hill criteria in this case constitutes generally acceptable methodology for assessing the alleged causality of lung and bladder cancer risks among prebake workers." (ECF 297 at 11-12). Defendants claim it does not. Id. Defendants' Joint Frye Motion on General Causation[13] challenges the general acceptance of the Bradford Hill methodology used by Plaintiffs' expert Zhang because of "methodological flaws" used to draw an association between Coal Tar Pitch Volatiles (in the Prebake Process) and Disease (cancer). Defendants assert:

> [The] methodological flaws in Dr. Zhang's causation analysis, includ[e] improper application of the Bradford Hill criteria, flawed extrapolation, unsupported supposition based on nothing more than rank speculation, and inappropriate reliance upon study reviews, rather than undertaking the required critical review of the underlying data.

Defendants' Joint Brief in Support, (ECF 297 at 33).

In contrast, Plaintiffs' expert Zhang asserts that a general causal link exists based upon an initial association between CTPVs identified in the aluminum smelting process environment and disease (cancer). As stated by Plaintiffs:

> [T]here is a study that Dr. Zhang reviewed which show an increased risk of bladder cancer in cohorts that worked in Pre-bake smelters where the confidence interval excluded the play of "chance". There is the Romunstad, P. et.al. 2000 article (Zhang Depo. Exhibit M, App. 601-609), which studied a cohort of 11,103 male Norwegian smelter workers from a vertical stud Sőderberg plant, a horizontal stud Sőderberg plant, and workers from two pre-bake smelters. The authors found the following: 1.) an overall increased incidence of bladder cancer of 1.3 (95% CI 1.1-1.5) (Table 4 App. p. 604). For workers who had CTPV exposure at the levels of > or equal to 2000 ug/m3 for at least 20 years, the risk increased to 1.8 (CI 1.1-2.8) (Table 5 App. p. 605), and for workers who had exposure to this level for more than 30 years, the risk increased to 2.0 (95% CI- 1.1-2.8) (Id.). Defendants have cited no case law to support imposing such an "explicit threshold" on Dr. Zhang's testimony, and that is not required under the Walsh supra, 234 A.3d 446 case either, but Dr. Zhang has met it and appropriately considered the studies in applying his methodology.

Plaintiffs' Brief in Opposition, (ECF 301 at 21).

In addition, ECF 301 at 25-3 identifies meta-analysis studies, including studies authored by Defendants' Expert Gibbs. See ECF 301 at 25-26, including:

> Dr. Zhang testified that occupational medicine physicians, such as himself, rely on the findings generated by IARC.[14] (Id. at p. 69). There are 28 studies in IARC's review of the literature, a complete list is not included in his brief, but many of the studies were ones that Dr. Zhang had, himself, cited. These include Anderson & Gibbs (2009); Bjor (2008); Friesen (2009); Gibbs (2007); Gibbs (2007a); Gibbs (2007b); IARC (1994, 1987, 2002, 2010); Romundstad (2000); and Spinelli (2006). For a complete list of the articles involved in the study, see IARC 2012 which is attached as Exhibit 10 to Zhang's deposition, App. pp. 459-467).

Plaintiffs assert that CTPVs contain PAHs -- a known carcinogen, to which aluminum smelting workers are exposed – as a sufficient association, which is permissible to engage the Bradford Hill criteria (methodology) to assess general causation.

> Dr. Zhang testified that although the studies in general showed higher exposure of CTP or BaP in Sőderberg plants compared to prebake, all workers, whether in Sőderberg or prebake plants had risk. (Id.). He stated that the risk depends on the dose, not on the process. "Prebake has a lower risk because they have a lower level [exposure] and the Sőderberg have higher risk because they have higher exposure". (Id. at p. 97). Similarly, he explained that the exposure to PAHs is what is important, not the process creating the exposure, in evaluating the biological gradient factor of Bradford Hill. (Id. at pp. 97-98).

(ECF 301 at 33, Zhang Deposition, Appendix, Exh. D at pp.97-98). (emphasis added).

The issue before this Court is whether Plaintiff has proffered sufficient evidence that its expert used generally accepted methodologies within the relevant scientific communities, pursuant to Pa.R.Civ.P. 207.1 and the Frye standard, in reaching his general causation conclusion.

As confirmed by our Pennsylvania Supreme Court in Walsh, "[t]he first question is whether the chemical can cause 'the particular condition the person has' (general causation)." Walsh, 234 A.3d at 450-451 (emphasis added). "After an association between agent and disease has been identified, [then] the nine factors are evaluated to determine the strength of that association, with a strong association pointing to a causal relationship." Id. at 451. (emphasis added)(assessed general causation protocol for application of the Bradford Hill criteria).

In this matter, general causation requires an association "beyond the play of chance" between an agent (CTPV-PAHs) and disease (cancer). In other words, the issue is whether CTPV-PAHs can cause cancer.

In summary, Plaintiffs' expert Zhang infers and extrapolates that because exposure to a known carcinogenic agent (CTPV-PAHs) has been identified to exist in both Söderberg and Prebake aluminum smelting processes and that CTPV-PAHs can cause disease (respiratory tract and bladder cancers) in workers; then Plaintiffs assert inferentially that exposure to CTPV-PAHs in the aluminum smelting process is a sufficient association to fully engage the Bradford Hill methodology and address specific causation. Defendants assert that Zhang's inferences and extrapolations for Plaintiffs' association are methodologically flawed and do not open the door to a Bradford Hill analysis.

IV. Pennsylvania's Frye Legal Standard

A review of our Supreme Court's application of the Frye Test over the past twenty-five years, which includes Pa.R.Civ.P. 207.1 and Walsh, Rost, and Betz, supra, confirms the well-settled proposition that the Frye Test only applies when a party seeks to introduce novel scientific evidence. Frye does not apply every time science enters the courtroom. See also, Trach v. Fellin, 817 A.2d 1102 (Pa. Super 2003).

Our Supreme Court reaffirmed the proper application of Frye to novel scientific evidence when it adopted Pa.R.Civ.P. 207.1, "Motion to Exclude Expert Testimony Which Relies upon Novel Scientific Evidence." Pa.R.Civ.P. 207.1, 42 Pa.C.S.A., adopted 2001, January 22, 2001, effective July 1, 2001. As the explanatory comment to that Rule states, "The purpose of Rule 207.1 is to provide the procedure for pre-trial motions concerning the admissibility of expert testimony which relies upon novel scientific evidence." Id., Explanatory Comment—2001 (emphasis added).

In examining Defendants' Joint Frye Motion, this Court will not part with evaluating the totality of Plaintiffs' expert report(s) with regard to causation in order to determine whether Plaintiffs' expert Zhang, proffered expert testimony which relies upon novel scientific evidence for purposes of the methodology employed in reaching his expert conclusions.[15] See Pa.R.C.P. 207.1 and Walsh v. BASF, supra.

> The requirement that the expert's methodology be generally accepted is commonly referred to as the Frye test …. [T]he Frye rule applies to an expert's method, not his conclusions …. The Frye standard is limited to an inquiry into whether the methodologies by which the scientist has reached her conclusions have been generally accepted in the scientific community. It restricts the scientific evidence which may be admitted as it ensures that the proffered evidence results from scientific research which has been conducted in a fashion that is generally recognized as being sound, and is not the fanciful creations of a renegade researcher. Yet, such a standard is not senselessly restrictive for it allows a scientist to testify as to new conclusions which have emerged during the course of properly conducted research.

Walsh v. BASF, 234 A.3d at 456 (quoting Blum ex rel. Blum v. Merrell Dow Pharm., Inc., 764 A.2d at 9 (Cappy, C.J., dissenting) (emphasis in original).

Whether a methodology is generally accepted is a determination that must be based upon the testimony of scientists in the relevant scientific community, not upon any scientific expertise of a judge. See Pa.R.E. 702(c).

In reviewing a Frye motion, trial courts may not assess the merits of the expert's scientific theories, techniques, or conclusions. Walsh, 234 A.3d at 458. The trial court may only consider whether the expert applied methodology generally accepted in the relevant scientific community, and may not go further to attempt to determine whether it agrees with the expert's application or whether the expert's conclusions have sufficient factual background support. Walsh, 234 A.3d at 457. Those issues are a question of fact for the jury. Id.

It is well-settled that engagement of the Bradford Hill criteria[16] is a generally accepted methodology in the relevant scientific community. Id. This Trial Court has adopted and applied the Frye standard set forth by our Pennsylvania Supreme Court. See Walsh v. BASF, GD10-018588, Op. 11/15/2021 at ECF 379, 170 PLJ No. 2, pp. 7-15 (January 28, 2022, Ignelzi, J.), petition for permission to appeal denied per curiam at 3 WDM 2022 (Pa. Super. 2022).

V. General Causation

To establish general causation, Plaintiffs' expert Zhang utilizes the Bradford Hill criteria to demonstrate the existence of a causal association between CTPV-PAHs released in the aluminum smelting process and the epidemiological reports of aluminum smelting workers with disease (lung and bladder cancer). In his report, Zhang's methodology to establish general causation is grounded on the assertion that:

> "[t]he association between coal tar-derived substances, a complex mixture of polycyclic aromatic hydrocarbons, and cancer is well established. Friesen MC et al (Occup Environ Med. 2007 Apr;64(4):273-8) compared the dose-response relationships for two common measures of coal tar-derived substances, benzene-soluble material (BSM) and benzo(a)pyrene (BaP), and evaluated which among these is more strongly related to the health outcomes. . . . The authors concluded that BaP and BSM were both strongly associated with bladder and lung cancer.

Zhang Report dated June 10, 2016 at 6, (Plaintiffs' Appendix, ECF 302, Exh. B at p. 16).

In further support of his methodology to establish an association of an environmental feature (PAHs) to a disease (lung and/or bladder cancer) "beyond what we would care to attribute to the play of chance," Dr. Zhang also cites, inter alia, a series of studies co-authored by the Defendants' expert Gibbs which identified "statistically significant" causes of death among aluminum smelter workers from lung cancer and bladder cancer. Zhang 6/10/2016 Report at 7, (ECF 302, Exh. B at p. 17) (referencing Gibbs GW, et al: Mortality and cancer experience of Quebec aluminum reduction plant workers. Part 2: mortality of three cohorts hired on or before January 1, 1951, (J Occup Environ Med. 2007 Oct;49(10):1105-23; Mortality and cancer experience of Quebec aluminum reduction plant workers, part 4: cancer incidence, J Occup Environ Med. 2007 Dec;49(12): 1351-66); and Exposure-response relationship between lung cancer and polycyclic aromatic hydrocarbons (PAHs), (J Occup Environ Med. 2009;66:740-746)).

Moreover, this Court – without weighing in on any conclusions reached by any expert(s) – acknowledges a 2014 Report published in the same Journal of Occupation Environmental Medicine,[17] (a Journal cited by both Experts Gibbs and Zhang) which states:

> Cancer
>
> There is epidemiological evidence for a causal connection between exposures to specific agents during primary aluminum production processes and certain cancers. Most of what is known relates to Søderberg operations or mixed Søderberg/prebake operations. There have been significantly increased lung and bladder cancer risks reported in Søderberg workers from several countries, but not all. Polycyclic aromatic hydrocarbons have been the putative exposure agent linked to these cancers. In prebake smelters, the main exposure to PAHs occurs during manufacture of the anode, and once in situ within the pot additional release of PAHs from prebake anodes is low. In contrast, exposure to PAHs within Søderberg smelters occurs during operation of the cell; thus, all potroom workers are potentially exposed, including during the relining of cathodes. Many PAHs are present and arise mainly from the coal tar binder or pitch. Benzo(a)pyrene (BaP) is often used as a good measure of exposure for the common PAHs seen in potrooms. Observed lung and bladder cancer risks increase with cumulative exposure to BaP even after adjustment for smoking.

Wesdock JC, Arnold IM. Occupational and environmental health in the aluminum industry: key points for health practitioners. J Occup Environ Med. 2014 May; 56(5 Suppl): S5–S11, at S8.[18] Published online 2014 May 8. (emphasis added).
See https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4131940/

Moreover, Plaintiffs' expert Zhang also cites the following epidemiological/scientific sources in Plaintiffs' Appendix in Opposition to Defendants' Joint Supplemental Brief Regarding Report of Plaintiffs' Expert Zhang (ECF 280 at the identified Exhibits):

> Gibbs GW,[19] Labreche, F. Cancer Risk in Aluminum Reduction Plant Workers: A Review. J Occup & Environ Med. May 2014; 56(55): S40-S59 (Exh. C);
>
> Bjor, et al. Long-term Follow-up Study of Mortality and the Incidence of Cancer in a Cohort of Workers at a Primary Aluminum Smelter in Sweden. Scand J Work Enviorn Health. 2008 Dec; 34(6): 463-70 (Exh. D);
>
> Friesen, M.C. et al. Comparison of Two Indices of Exposure to Polycyclic Aromatic Hydrocarbons in a Retrospective Aluminum Smelter Cohort. Occup Envir Med. 2007 Apr; 64(4): 273-8 (Exh. E);
>
> Gibbs, G.W. et al. Mortality and Cancer Experience of Quebec Aluminum Reduction Plant Workers, Part 2: Mortality of Three Cohorts Hired on or Before January 1, 1951 J Occup Environ Med. 2007 Oct; 49 (10): 1105-23 (Exh. F);
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> Gibbs, G.W. et al. Mortality and Cancer Experience of Quebec Aluminum Reduction Plant Workers, Part 4: Cancer Incidence. J Occup Environ Med. 2007 Dec; Vol. 49 (12): 1351-66 (Exh. G);
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> Armstrong, B.G., Gibbs, G.W., Exposure-response Relationship Between Lung Cancer and Polycyclic Aromatic Hydrocarbons (PAHs). J Occup Environ Med. 2009; 66: 740-746 (Exh. H);
>
> Romundstad P. Andersen, Haldorsen, T., Cancer Incidents Among Workers in 6 Norwegian Aluminum Plants. Scand J Work Environ Health 2000; 26: 461-469 (Exh. I);
>
> Rönneberg et al. Mortality and Cancer Morbidity in Workers in Aluminum Smelter with Pre-baked Carbon Anodes – Part II: Cancer Morbidity. Occup Environ Med. 1995; 52: 250-254 (Exh. J);
>
> Spinelli JJ. Mortality and Cancer Incidence in Aluminum Reduction Plant Workers J Occup Med. 1991 Nov; 33: 1150-5 (Exh. K);
>
> Spinelli JJ. Cancer Risk in Aluminum Reduction Plant Workers (Canada) Cancer Causes Control. 2006 Sept: 17 (7): 939-48 (Exh. L);
>
> Theriault G. et al. Bladder Cancer in the Aluminum Industry The Lancet. 1984 Apr 28; 1:947-50 (Exh. M);
>
> Tremblay C. et al. Estimation of Risk of Developing Bladder Cancer Among Workers Exposed to Coal Tar Pitch Volatiles in the Primary Aluminum Industry Am J Ind. Med. 1995 Mar; 27: 335-48 (Exh. N);
>
> Boffetta P, Jourenkova N, Gustavsson P Cancer Risk from Occupational and Environmental Exposure to Polycyclic Aromatic Hydrocarbons Cancer Causes Control. 1997; 8: 444-472 (Exh. O);
>
> Bosetti, et al. Occupational Exposure to Polycyclic Aromatic Hydrocarbons and Respiratory and Urinary Tract Cancers: A Quantitative Review 2005, Ann. Oncology 2007, 18:431-446 (Exh. P);
>
> IARC Monograph 100F (2012) (Exh. Q);
>
> Rota, et al., Occupational Exposures to Polycyclic Aromatic Hydrocarbons and Respiratory and Urinary Tract Cancers: an Updated Systematic Review and a Meta-analysis to 2014. Arch Toxicol. 2014 to Aug.; 88 (8): 1479-90 (Exh. R);
>
> Armstrong B, Tremblay, et al. Lung Cancer Mortality and Polynuclear Aromatic Hydrocarbons: a Case-Cohort Study of Aluminum Production Workers in Arvida, Quebec, Canada. Am J Epidemiol. 1994; 139: 250-62 (Exh. S); and
>
> Armstrong B, Hutchinson E et al Lung Cancer Risk After Exposure to Polycyclic Aromatic Hydrocarbons: A Review and Meta-Analysis. Environmental Health Perspectives June 2004 (Exh. T).

(ECF 280, Exhibits C-T).

Dr. Zhang's methodology to formulate a prerequisite association to engage the nine Bradford Hill criteria (viewpoints) appears founded on scientific research that exposure to CTPV-PAHs may cause disease (cancer). Dr. Zhang asserts, "[i]n conclusion, I state my opinions within a reasonable medical certainty that occupational exposure to coal tar pitch volatiles cause lung cancer and bladder cancer."

Our Pennsylvania Supreme Court has affirmed that an expert need not rely on studies mirroring the exact facts under consideration but a synthesis of various legitimate studies which reasonably permits experts' conclusions may be sufficient for purposes of Frye. See Walsh, 234 A.3d at 464. Upon this foundation, this Court undertakes its analysis of Defendants' Joint Frye Motion to Exclude Dr. Zhang's General Causation Opinions (with Respect to Prebake Aluminum Smelting Workers)(ECF 297).

VI. Discussion

A.

> Whether Dr. Zhang utilized a generally accepted methodology when he applied the Bradford Hill Criteria to establish general causation based upon an association between CTPV-PAHs and disease (cancer).

Whether a methodology is generally accepted is a determination that must be based upon the testimony of scientist in the relevant scientific community, not upon any scientific expertise of a judge. See Pa.R.E. 702(c).

> Judges, both trial and appellate, have no special competence to resolve the complex and refractory causal issues raised by the attempt to link low-level exposure to toxic chemicals with human disease. On questions such as these, which stand at the frontier of current medical and epidemiological inquiry, if experts are willing to testify that such a link exists, it is for the jury to decide whether to credit such testimony.

Walsh, 234 A.3d 446, 457 (Pa. 2020) (quoting Ferebee v. Chevron Chemical Co., 736 A.2d 1529, 1534 (D.C. Cir. 1984)).

In reviewing a Frye motion, trial courts may not assess the merits of the expert's scientific theories, techniques, or conclusions. Walsh, 234 A.3d at 458. The trial court may only consider whether the expert applied methodology generally accepted in the relevant scientific community, and may not go further to attempt to determine whether it agrees with the expert's application or whether the expert's conclusions have sufficient factual background support. Walsh, 234 A.3d at 457. (emphasis added). Those issues are a question of fact for the jury. Id.

As per this Court's analysis and familiarity with the Bradford Hill citeria in Walsh, (Pa. 2020), infra, including Walsh v. BASF, GD10-018588, Op. 11/15/2021 (January 28, 2022, Ignelzi, J.), infra; this Court confirms that the Bradford Hill criteria is a reliable method within the relevant scientific community to demonstrate a causal link between chemical and disease.

The nine Bradford Hill criteria (viewpoints), include assessing the: (1) strength of the association; (2) consistency of the association; (3) specificity of the association; (4) temporality of the association; (5) biological gradient observed (dose-response curve); (6) biological plausibility; (7) coherence; (8) experimental or intervention effects; and (9) analogy. Sir Albert Bradford Hill, The Environment and Disease: Association or Causation?, 58 Proc. Royal Soc. Med. 295, 295-299 (1965).

> The requirement of general acceptance in the scientific community assures that those most qualified to assess the general validity of a scientific method will have the determinative voice. Additionally, the Frye test protects both parties by assuring that a minimal reserve of experts exists who can critically examine the validity of a scientific determination in a particular case. Since scientific proof may in some instances assume a posture of mystic infallibility in the eyes of a jury of laymen, the ability to produce rebuttal experts, equally conversant with the mechanics and methods of a particular technique, may prove to be essential.

Walsh, 234 A.3d at 467 (Wecht, J., concurring) (quoting United States v. Addison, 498 F.2d 741, 744-45 (D.C. Cir. 1974) (emphasis added).

Plaintiffs posit that Bradford Hill is the proper methodology to determine an association between chemical and disease and that Dr. Zhang properly employed the methodology. See Zhang 6/10/2016 Report, (ECF 302) Plaintiffs' Appendix Exh. B at pp. 10-24; Zhang 8/25/2016 Supplemental Report, (ECF 302) Plaintiffs' Appendix Exh. C. at pp. 27-30; and Zhang 12/19-20/2017 Deposition Transcript, Volumes 1-3 (ECF 302) Plaintiffs' Appendix Exh. D at pp. 31-388.

> [Expert Zhang] noted that the Bradford Hill Criteria includes these nine criteria: strength, consistency, specificity, temporality, biological gradient, plausibility coherence, experiment and analogy. (Exhibit D, Zhang's depo, App. p. 79). He noted the strength criteria looks at the association of the disease to the exposure. (Id. at p 81). In assessing all the criteria, he did his own investigation, he reviewed the published literature, and reviewed conclusions of national and international agencies that have examined the literature and classified coal-tar pitch as a carcinogen. (Id. at p. 51).

Plaintiffs' Brief in Opposition, (ECF 301 at 18-19).

In response, Defendants cannot argue that Bradford Hill is an improper methodology; but rather assert that Plaintiffs' expert Zhang improperly employed his professional judgment in finding an association between CTPV-PAHs and cancer before applying the Bradford Hill methodology to reach his conclusion. Defendants repetitively assert that expert Zhang's association is not "perfectly clear-cut."[20] (See e.g., ECF 297 at 18). Yet, Zhang's association is certainly beyond the "play of chance." Plainly put for stark contrast, this is not an analogously proffered association asserting that observations of storks in a particular area are the direct biological cause of increased birth rates.[21]

To the extent that Defendants object, their objections to Expert Zhang's general causation opinions relate to his application of the association of CTPV-PAHs to disease to the Bradford Hill methodology.

Defendants' assert that Plaintiffs' expert Zhang's application of the Bradford Hill criteria was improper (for not establishing a prerequisite association), but affirm that Bradford Hill is the proper test to assert causation. (See Gibbs 6/2016 Report, ECF 297, Appendix, Exh. E at pp. 476-904; Gibbs 7/14/2016 Supplemental Report, ECF 297 Appendix Exh. F at pp. 905-918; and Sir Albert Bradford Hill, The Environment and Disease: Association or Causation, 58 Proc. Royal Soc. Med. 295 (1965), ECF 297, Appendix Exh. G at pp. 919-925). Certainly, Defendants may attack the techniques and application implored by Plaintiffs' Experts through cross examination, but not as a part of their Frye Motion challenge to exclude Plaintiffs' expert Zhang from testifying on the issue of general causation. As such, The Bradford Hill criteria is a proper methodology employed in the relevant scientific communities of pathology and occupational medicine.

Underlying Dr. Zhang's use of the Bradford Hill Methodology, the Defendants' attempt to frame their Frye Motion challenge on the sub-issue of Zhang's finding of an association to support an hypothesis to apply Bradford Hill's nine viewpoints. Defendants assert that to engage the Bradford Hill analysis there must first be a "statistically significant" clear cut association. As such, this Court addresses the following issue:

B.

> Whether the Bradford Hill methodology requires a "statistically significant" clearcut association as a necessary prerequisite to engage the nine viewpoints under the Pennsylvania Frye standard and Pennsylvania Supreme Court Opinion in Walsh v. BASF, for an expert to establish general causation based upon an association between CTPV-PAHs and disease (cancer).

Defendants assert, "the establishment of a perfectly clearcut statistically significant association is the key that one must have before they can open the door using Bradford Hill analysis." (Tr. 14). (emphasis added). Defendants stretch their assertion to proclaim:

> [A]s Sir Bradford Hill himself explained, his criteria are only applicable after a statistically significant association that is perfectly clearcut and beyond the play of chance has first been demonstrated.

(Tr. 12-13). (emphasis added).

Sir Bradford Hill does not qualify the assessment of an association based upon Defendants' created phraseology. To the contrary, pursuant to his evaluation under viewpoint (1) Strength [of Association], Sir Bradford Hill explained after assessing death rates among smokers, that "[i]t does not, of course, follow that the differences revealed by ratios are of any practical importance. Maybe they are, maybe they are not; but that is another point altogether." AB Hill, infra, 58 Proc. Royal Soc. Med. 295 at 296 (providing example of Snow's 1855 classic analysis of cholera epidemic). AB Hill's phrase is:

> Our observations reveal an association between two variables, perfectly clear-cut and beyond what we would attribute to the play of chance.

AB Hill, infra at 295. The phrase does not contain a modifier "statistically significant."

In further support of their position proclaiming the "statistically significant" prerequisite as a preclusion to Dr. Zhang's engagement of the Bradford Hill nine viewpoints, Defendants cite to federal case law and seek to conflate the Frye standard with the more restrictive Daubert standard. See e.g., (Tr. 19 and Defendants' 12/2/2021 Oral Argument Demonstrative titled "The Criteria's Express Foundational Prerequisite is Canon").

At the December 2, 2021 Fry Motion Oral Argument, Defense Counsel cited to the following federal Daubert cases[22] as set forth in their Demonstrative: Soldo v. Sandoz Pharmaceuticals Corporation, 244 F. Supp.2d 434, 569 (W.D. Pa. 2003)[23]; McMunn v. Babcock & Wilcox Power Generation Group, Inc., 2013 WL 3487560, at *15 (W.D. Pa. July 12, 2013); Frischhertz v. Smithkline Beecham Corporation, 2012 WL 6697124, at *3 (E.D. La. December 21, 2012)[24]; Jones v. Novartis PharmaceuticalsCorporation, 235 F. Supp.3d 1244, 1268-69 (N.D. Ala. 2017)[25]; and In re: Lipitor (Atorvastatin Calcium) Marketing, Sales Practices and Products Liability Litigation, 174 F. Supp.3d 911, 924-26 (D. S.C. 2016), aff'd, 892 F.3d 624, 642 (4th Cir. 2018)[26].

This Court finds that the varying federal court Daubert cases cited call into question the very deep-dive analyses that our Pennsylvania Supreme Court advised against in Walsh, (Pa. 2020), infra. Indeed, this Trial Court's predecessors' approach to evaluating the competing expert nuances contained in expert literature and expert opinions has been rejected.[27] This Trial Court will not be tempted into the same rabbit hole – nor into a Daubert dugout – not now nor in the future pending further guidance by our Supreme Court. At current, Est. of Walsh v. BASF Corporation, 234 A.3d 446 (Pa. 2020) is the Pennsylvania standard for Frye Motion practice.

Moreover, as properly noted by Plaintiffs, Defendants' citation to McMunn (W.D. Pa. 2013) was a federal magistrate decision applying the Daubert standard (not Pennsylvania Frye standard). Federal Magistrate Mitchell's decision to exclude plaintiffs' expert was reviewed de novo and reversed by Judge Cercone at McMunn, 2014 WL 81478 (W.D. Pa. February 27, 2014). See (Tr. 43). Defendants did not divulge the existence of Judge Cercone's Opinion with its presentation. As stated by Judge Cercone:

> Magistrate Judge Mitchell concluded that Dr. Hu's opinions failed to satisfy the Daubert requirements and must be excluded. . . .
>
> . . . In this instance, therefore, the Court finds that Dr. Hu's opinions have met the pedestrian standards required for reliability and fit, as they are based on scientifically sound methods and procedures, as opposed to "subjective belief or unsupported speculation." Dr. Hu has demonstrated "good grounds" for his opinion, therefore, "[a]ny dispute between the parties about the strength of the evidence in this case should be resolved by the jury." Thomas & Betts Corp. v. Richards Mfg. Co., 342 Fed. Appx. 754, 761 (3d Cir.2009) (quoting Pineda v. Ford Motor Co., 520 F.3d at 249)).

McMunn, 2014 WL 81478, at *5-6 (emphasis added).

Albeit this Court does not apply the Daubert standard nor is it bound by federal case law; it furthermore takes umbrage with Defendants' attempt to cite to a federal magistrate's rationale that was reversed on review.[28] Defendants' jurisprudential stretch breaks the rubber band.

Moreover, Plaintiffs' rebuttal (qualifying their response that federal cases applying the Daubert standard are not relevant here) cites to the rationale of In re: Zoloft, 858 F.3d 787 (3d. Cir. 2017) (expert use of Bradford Hill criteria for association between drug and birth defects):

> Central to this case is the question of whether statistical significance is necessary to prove causality. We decline to state a bright-line rule. Instead, we reiterate that plaintiffs ultimately must prove a causal connection between Zoloft and birth defects. A causal connection may exist despite the lack of significant findings, due to issues such as random misclassification or insufficient power. Conversely, a causal connection may not exist despite the presence of significant findings. If a causal connection does not actually exist, significant findings can still occur due to, inter alia, inability to control for a confounding effect or detection bias. A standard based on replication of statistically significant findings obscures the essential issue: a causal connection. Given this, the requisite proof necessary to establish causation will vary greatly case by case. This is not to suggest, however, that statistical significance is irrelevant. Despite the problems with treating statistical significance as a magic criterion, it remains an important metric to distinguish between results supporting a true association and those resulting from mere chance. Discussions of statistical significance should thus not understate or overstate its importance.

In re: Zoloft, 858 F.3d at 793 (emphasis added).

Of particular note, the Third Circuit in providing its Daubert rationale upheld the District Court "expressly reject[ing] Pfizer's argument that the existence of a statistically significant, replicated result is a threshold issue before an expert can conduct the Bradford-Hill analysis. In doing so, the District Court was clear that it was not requiring a threshold showing of statistical significance." In re: Zoloft, 858 F.3d at 795 (emphasis added) (footnote omitted). Even under the Daubert standard, which this Court does not apply – the rationale submitted by federal courts does not uphold a bright line "statistically significant" foundational prerequisite as canon to application of the Bradford Hill criteria.[29]

As made clear and noted by our Supreme Court in Walsh, there remain significant distinctions between the Frye and Daubert standards.

> Daubert jurisdictions generally grant trial courts substantially broader discretion to stop expert testimony at the courtroom door. Federal Rule of Evidence 702 provides: A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:
>
> (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
>
> (b) the testimony is based on sufficient facts or data;
>
> (c) the testimony is the product of reliable principles and methods; and
>
> (d) the expert has reliably applied the principles and methods to the facts of the case.
>
> F.R.E. 702. Subparagraphs (b) and (d) have no counterpart in Pennsylvania's corresponding rule, and it is there that the "gatekeeping" mandate in its strongest sense lives.

Walsh, 234 A.3d at 467.

This Court applies the Pennsylvania Frye standard (not Daubert) and the rubrics set forth by our Supreme Court in Walsh, infra. Defendants' "statistically significant" bright line prerequisite is rejected in toto.[30]

C.

> Whether Dr. Zhang had a scientific basis for application of the Bradford Hill Criteria to establish general causation based upon an association between CTPV-PAHs and disease (cancer).

Cleverly, Defendants seek to short circuit Dr. Zhang's application of Bradford Hill by claiming he cannot establish an association applicable to the Prebake Aluminum Smelting Process. Clever – yes; persuasive – no.

First, Defendants' Frye challenge is to general causation. As referenced above, Dr. Zhang cites to studies that include the well-established association of CTPV-PAHs with disease (cancer). "The association between coal tar-derived substances, a complex mixture of polycyclic aromatic hydrocarbons and cancer is well established. Friesen MC et al (Occup. Environ Med. 2007 Apr;64(4):273-8)." Zhang 6/10/2016 Report at p. 6, Appendix at p. 16 (citations omitted).

Second, the differentiation of CTPV-PAH occupational exposure in Soderberg Process versus Prebake Process does not eliminate nor eviscerate the existence of the association of CTPV-PAHs to disease which would preclude application of the Bradford Hill methodology. CTPV-PAHs exist in the Prebake Process environment. Fundamentally, "[i]n prebake smelters, the main exposure to PAHs occurs during manufacture of the anode[.]" See Wesdock JC, Arnold IM. "Occupational and environmental health in the aluminum industry: key points for health practitioners." J Occup Environ Med. 2014 May; 56(5 Suppl): S5–S11, at S8, infra. Further, as stated by Dr. Zhang in his August 25, 2016 Supplemental Report:

> Occupational PAH exposure to workers occurs in both types of processes. The only major process difference between the pre-bake and Soderberg methods of primary aluminum smelting is the degree of exposure in the potroom atmosphere when the pots are actively operating and smelting in the potrooms. With the exception of a pre-bake pot "bake-in", an operating Soderberg smelting pot generally emits more CTPVS/PAHs into the potroom atmosphere than a pre-bake smelting pot during normal smelting operations. However, when pre-bake smelting pots are undergoing the "bake-in" process prior to starting the active smelting operation, they emit increased levels of PAHs into the potroom atmosphere. Since pre-bake smelting pots were frequently being lined and "baked in" before starting active smelting in the pre-bake potrooms, the workers were still exposed to an elevated level of PAHs exposures around these pots that were "baking in". Additionally, there are certain jobs in the pre-bake plants such as re-lining smelting pots, jobs in the carbon plant, environmental control, and pitch handling, which all involve elevated levels of PAH exposure that have nothing to do with the Soderberg process.

Zhang 8/25/2016 Supplemental Report at p. 2, (ECF 302, Appendix Exh. C at p. 28).[31]

Lastly, Defendants' final grasp is to clutch the "cherry-picking" data straw. To put it plainly, the "cherry-picking" argument is dead in the Frye Motion context. Toxic tort experts invariably analyze, evaluate, and summarize massive amounts of data and literature to support their conclusions contained within their reports. This nor any trial court – in the Frye Motion context – has the scientific capacity, statistical acumen, or jurisprudential authority to differentiate and evaluate the subjective degree to which competing experts "cherry-pick" data. In sum, the task for expert clarity and explanation is upon counsel and experts at trial subject to the rigors of cross-examination. This Court will not entertain pretrial mini-trials or Frye hearings to assess the relative value of experts' use of data in reaching their conclusions – provided (as discussed herein) the experts are using the methodology generally accepted in the relevant scientific community. Counsel is well-advised to abandon the cherry-picking argument in future Frye Motion submissions.[32]

This Court finds nothing "renegade" about Dr. Zhang's use of the Bradford Hill criteria based upon research identifying an association between CTPV-PAHs in the Aluminum Smelting Process and disease. It is not the role of this Court to question an expert's exercise of professional judgment or to determine which studies, or the weight given a study, that an expert must use or employ in forming their opinions on medical causation provided that the opinion is based upon an accepted methodology in the relevant scientific community supported by proffered facts of record.

In essence, the Defendants' objections relate to the strength of the association, which is the first criterion of the Bradford Hill methodology. The characterization of "strength" of association is a relative term governed by statistical parameters and other applicable factors.[33]

As stated by Sir Austin Bradford Hill:

> Here then are nine different viewpoints from all of which we should study association before we cry causation. What I do not believe - and this has been suggested - is that we can usefully lay down some hard-and-fast rules of evidence that must be observed before we accept cause and effect. None of my nine viewpoints can bring indisputable evidence for or against the cause and effect hypothesis and none can be required as a sine qua non. What they can do, with greater or less strength, is to help us to make up our minds on the fundamental question - is there any other way of explaining the set of facts before us, is there any other answer equally, or more, likely than cause and effect?

Hill AB. The Environment and Disease: Association or Causation? Proc. Royal Soc. Med. 1965; 58:295–300 at 299. (emphasis added).

A challenge to scientific methodology for purposes of determining novel science cannot be based upon disagreements with an opposing expert's conclusions regarding application of the Bradford Hill criteria. It is not uncommon for trials to be "battles of the experts" based upon differing conclusions reached by differing experts in their respective and relevant fields of expertise employing proper methodology. Utilization of the Bradford Hill viewpoints is a generally accepted method in the relevant scientific community, and Defendants are able to produce rebuttal witnesses equally conversant with the mechanics and methods of the technique employed. At this juncture, this Court intentionally does not provide an imprimatur as to any application or conclusions reached by any expert in employing the Bradford Hill methodology.

As set forth above, there is no evidence or expert testimony demonstrating that Dr. Zhang's use of the Bradford Hill viewpoints is an improper methodology or is utilized in a novel manner by Dr. Zhang to establish general causation based upon reasonable inference, deductive reasoning, inductive reasoning, and/or extrapolation grounded in an association of CTPV-PAHs and common disease found among both Soderberg and Prebake aluminum smelting workers. As identified in the record, Bradford Hill is a proper method used by both Plaintiffs' and Defendants' Experts. This Court acknowledges that Defendants' Experts have proffered opinions challenging the Plaintiffs' application of the Bradford Hill methodology. These challenges are appropriately permissible through cross-examination at trial. This Court finds Defendants' objections to exclude Plaintiffs' Expert testimony — based upon application of the Bradford Hill criteria and the studies cited by Plaintiffs' Experts — goes to the weight and credibility of the expert testimony at the time of trial, not admissibility in the first instance.

VII. Conclusion

The methodology employed by Plaintiffs' Expert David Zhang does not rely upon novel science nor novel methodology in the respective relevant scientific communities of pathology and occupational environmental medicine. Doctor Zhang's use of extrapolation[34] and analogy from scientific data contained within the cited reports and studies contained within his Expert Reports and accompanying references, including use of logical inferences, are methodologies generally accepted and used by scientists within their relevant scientific community.

This Court concludes that Plaintiffs' Expert, David Zhang, M.D. followed reliable and generally accepted methodology in his relevant fields to establish an association between CTPV-PAHs and disease to engage the Bradford Hill criteria to examine issues related to general causation in this case. This Court concludes that Expert Zhang proffered evidence resulting from scientific research which has been conducted in a fashion that is generally recognized as being sound, and is not the fanciful creation of a renegade researcher. See Walsh, 234 A.3d at 466 (Wecht, J., concurring)(citing to Blum ex. Rel. Blum v. Merrell Dow Pharm., Inc., 764 A.2d 1, 9-10 (Pa. 2000).

The weight, credibility, and totality of evidence contained within Plaintiffs' and Defendants' Expert Opinions regarding general causation, albeit in dispute based upon the strength of the association as related to the Pre-Bake Aluminum Smelting Process - both include variations of the hierarchy of generally accepted epidemiologic evidence (e.g., meta-analyses, experimental designs, randomized controlled trials, large sample trials, randomized cluster trials, observational designs, cohort studies, case-control studies, descriptive studies, prevalence studies, cross-sectional studies, ecological studies, case series, and case reports) and methodologies to support their respective positions. Moreover, the absence of ruling in or ruling out alternative risk factors in an expert's application of an accepted methodology will subject the proponent's expert extrapolations, inferences, and conclusions to the rigors of cross-examination. It is well-recognized that vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking purported shaky but admissible evidence.

> Judges, both trial and appellate, have no special competence to resolve the complex and refractory causal issues .... with human disease. On questions such as these, which stand at the frontier of current medical and epidemiological inquiry, if experts are willing to testify that such a link exists, it is for the jury to decide whether to credit such testimony.

Walsh, 234 A.3d at 457 quoting Trach, 817 A.2d at 1117 (emphasis added).

Moreover, it is not the province of this trial court to evaluate the conclusions reached by the experts in this case. How effectively and convincingly an expert employs a given methodology is a matter for the jury to assess. See Walsh, 234 A.3d at 466 (Wecht, J., concurring).

> Questions concerning the quality and persuasiveness of the applications and conclusions must be resolved by the collective judgment of the jury. Aided by the crucible of the parties' adversarial presentations, the jury is just as capable as the average judge of weighing the parties' competing accounts, identifying and rejecting particular applications of generally accepted principles and methods that either depart from standard practice in the field or lack a sufficient evidentiary foundation.

Walsh, 234 A.3d at 467 (Wecht, J., concurring). (emphasis added).

What constitutes novel scientific evidence has historically been decided on a case-by-case basis. See Com. v. Puksar, 951 A.2d 267, 275 (Pa. 2008); and Com. v. Dengler, 890 A.2d 372, 382 (Pa. 2005). Based upon the record submitted for review: including the the expert reports of Dr. Gibbs (epidemiology and medical statistics) and Dr. Zhang (pathology and occupational environmental medicine); the epidemiological publications, reports, and studies cited by both doctors; the application of the same methodology – Bradford Hill; and the expert opinion on causation between occupational chemical exposure to carcinogenic-related CTPV-PAHs and resultant disease (lung and bladder cancer) – it is this Court's conclusion that the methodology employed by Dr. Zhang did not involve novel scientific evidence, nor does it implicate principles that have not gained general acceptance in the fields of pathology or occupational environmental medicine.

This Court, at this juncture, intentionally does not address the conclusions reached by any respective expert in their relevant scientific community based upon the methodologies employed. Any objections by Defendants to the means by which Dr. Zhang formulated his opinions and conclusions affects the weight and credibility, rather than the admissibility of his general causation opinions at this juncture.

This Court does not find the methodology employed by Dr. Zhang as related to general causation to be based upon a novel foundation of association.

At this juncture, it is for the jury to decide the validity, credibility, and weight of the respective experts' strength (or weakness) of association and their respective conclusions proffered to resolve the issue of general causation of CTPV-PAHs and disease allegedly sustained from occupational exposure in the Aluminum Smelting Prebake Process.

Therefore, the Defendants' Joint Frye Motion to Exclude the Plaintiffs' Expert's General Causation Opinions under Rule 207.1 will be denied.[35]

In furtherance of this Trial Court's Opinion, all parties are well-advised to heed the prospective admonition of Sir Austin Bradford Hill:

> All scientific work is incomplete - whether it be observational or experimental. All scientific work is liable to be upset or modified by advancing knowledge. That does not confer upon us a freedom to ignore the knowledge we already have, or to postpone the action that it appears to demand at a given time.

Hill AB. The Environment and Disease: Association or Causation? Proc. Royal Soc. Med. 1965; 58:295–300 at 300. Sir Bradford Hill's admonition is a touchstone for this Court as this matter proceeds.

The parties' experts shall be subject to cross-examination at trial regarding the strength of their general causation associations and conclusions reached by their methodology and their use of extrapolation and logical inferences based upon their referenced scientific evidence. No party is prohibited nor precluded from cross-examination of expert opinion; the application of reports, studies, or data to methodology; implication of other risk factors and causes related to lung and/or bladder cancer; or conclusions at the time of trial, pending further Order of Court.

WHEREAS, the following ORDER of this same date is entered and incorporated herein.

BY THE COURT:
/s/Ignelzi, J.

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[1] Electronic Court Filing ("ECF") references electronic filed docket document at GD04-006970.

[2] Frye v. United States, 293 F. 1013 (D.C. Cir. 1923).

[3] This Court incorporates herein by reference its lengthy analysis of Fyre Motion protocol as delineated therein.

[4] In the Fifth Judicial Circuit of Pennsylvania - Court of Common Pleas of Allegheny County – Civil Division; this Court is assigned to the Commerce and Complex Litigation Center pursuant to Allegh. L. R. 249, which also includes complex tort and class action lawsuits.

See https://www.alleghenycourts.us/civil/commerce_complex_litigation.

In addition to commercial and/or complex litigation, this undersigned jurist is also assigned to preside over general docket cases and jury trials. Under normal circumstances, Allegheny County Civil Division Courts generally operate on a calendar conducting trials during the months of January, March, May, September, and November. See https://www.alleghenycourts.us/civil/civil_division_court_calendar. Throughout the year, this Court is also assigned and conducts conciliations, mediates scheduled settlement negotiations, and addresses the innumerable procedural and substantive discovery and pretrial issues raised by litigants in the complex and general docket cases assigned.

In addition to the above-assigned responsibilities, this Court is also the assigned Special Motions Judge for pretrial discovery matters. See Allegh. L. R. 208.3(a)(5). As Special Motions Judge, during every month of the year, this Court reviews and addresses 25-40 new motions per week with oral argument in addition to its other responsibilities which requires coordination of scheduling among multiple litigants, daily review of innumerable motions, pleadings, exhibits, interrogatories, documents, case law, analysis of factual and legal issues, and the drafting and issuance of Opinions and Orders. The undersigned Court staff includes positions for one law clerk, one tipstaff, and one secretary. This Court is unique and appreciative in having three lawyers amenable to filling the above three positions on a full-time basis notwithstanding inherent budget constraints incommensurate with their education, professional training, experience, and skills for the complex legal matters to which they are assigned. This Court Staff's tireless commitment to addressing all of their manifold responsibilities in a timely and professional manner is beyond reproach.

[5] "A sense of confidence in the courts is essential to maintain the fabric of ordered liberty for a free people and three things could destroy that confidence and do incalculable damage to society: that people come to believe that inefficiency and delay will drain even a just judgment of its value; that people who have long been exploited in the smaller transactions of daily life come to believe that courts cannot vindicate their legal rights from fraud and over-reaching; that people come to believe the law – in the larger sense – cannot fulfill its primary function to protect them and their families in their homes, at their work, and on the public streets." Burger, Warren E. (August 24, 1970). "What's Wrong With the Courts: The Chief Justice Speaks Out (address to ABA meeting, Aug. 10, 1970)". U.S. News & World Report. 69 (8): 68, 71.

[6] As per the guidance of our Supreme Court in Walsh, infra, -- and in this ever-changing fast-paced scientific, medical, and technological era -- it behooves experts with the guidance of learned counsel to incorporate a clear, concise, and complete explanation of the methodologies employed that be contained in a separate introductory section in expert reports. Indeed, the world has changed and has become more complex since the adoption of the Frye test in 1923 and counsel in conjunction with experts should be mindful of the strictures identified in Walsh related to the examination of methodology for purposes of a trial court's evaluation of Motions to Exclude Expert Testimony pursuant to Pa.R.Civ.P. 207.1. The myriad of complexities are not counsel's opportunity to belabor the trial court with voluminous pleadings and materials on highly nuanced scientific, medical, or technology distinctions that, albeit in dispute for interpretation by experts, do not specifically limit their arguments to address methodology. Frye Motion practice is not opportunity to seek a mini-trial rehearsal in the guise of a Frye hearing. See Pa.R.C.P. 207.1(a)(3) wherein, "the court shall initially review the motion to determine if, in the interest of justice, the matter should be addressed prior to trial. The court, without further proceedings, may determine that any issue of admissibility of expert testimony be deferred until trial[.]" With our Pennsylvania Supreme Court's guidance from Walsh, infra, this Trial Court henceforth will be mindful of the Walsh parameters per Rule 207.1. As set forth in the Note to Rule 207.1: "The court has discretion in the manner in which it determines the motion. While depositions of expert witnesses and evidentiary hearings are available to the court for this purpose, they should be utilized in limited circumstances." As noted, the matter at hand is founded upon Judge Colville's March 17, 2017 Memorandum and Order which pre-existed the parameters set by Walsh. Counsel is well-advised that henceforth, this Trial Court will exercise its Fyre Motion discretion mindful of factors to identify whether an assertion would exceptionally qualify as "limited circumstances."

[7] "I shall not today attempt further to define the kinds of material I understand to be embraced within that shorthand description; and perhaps I could never succeed in intelligibly doing so. But I know it when I see it[.]" Jacobellis, 378 U.S. at 197. For an historical backdrop to Justice Stewart's quip, see The Origins of Justice Stewart's "I Know It When I See It" – Wall Street Journal 9/27/2007 at https://www.wsj.com/articles/BL-LB-4558

[8] Proffered expert used tortilla chips that he had wetted with saliva by holding them in his mouth for 15 seconds, 30 seconds, 45 seconds, and 60 seconds. Grady, 839 A.2d at 1040.

[9] Per the Center for Disease Control Carcinogen List:

> The following is a list of substances NIOSH considers to be potential occupational carcinogens.
>
> A number of the carcinogen classifications deal with groups of substances: aniline and homologs, chromates, dintrotoluenes, arsenic and inorganic arsenic compounds, beryllium and beryllium compounds, cadmium compounds, nickel compounds, and crystalline forms of silica. There are also substances of variable or unclear chemical makeup that are considered carcinogens, coal tar pitch volatiles, coke oven emissions, diesel exhaust and environmental tobacco smoke.
>
> Some of the potential carcinogens listed in this index may be re-evaluated by NIOSH as new data become available and the NIOSH recommendations on these carcinogens either as to their status as a potential occupational carcinogen or as to the appropriate recommended exposure limit may change.

See https://www.cdc.gov/niosh/topics/cancer/npotocca.html#c. (emphasis added).

[10] In further categorization:

> Three types of aluminum reduction cells are now in use: prebaked anode cell (PB), horizontal stud Soderberg anode cell (HSS), and vertical stud Soderberg anode cell (VSS). Most of the aluminum produced in the U.S. is processed using the prebaked cells.
>
> All three aluminum cell configurations require a "paste" (petroleum coke mixed with a pitch binder). Paste preparation includes crushing, grinding, and screening of coke and blending with a pitch binder in a steam jacketed mixer. For Soderberg anodes, the thick paste mixture is added directly to the anode casings. In contrast, the prebaked ("green") anodes are produced as an ancillary operation at a reduction plant.
>
> In prebake anode preparation, the paste mixture is molded into green anode blocks ("butts") that are baked in either a direct-fired ring furnace or a Reid Hammer furnace, which is indirectly heated. After baking, steel rods are inserted and sealed with molten iron. These rods become the electrical connections to the prebaked carbon anode. Prebaked cells are preferred over Soderberg cells because they are electrically more efficient and emit fewer organic compounds.

See United States Environmental Protection Agency, Primary Aluminum Production, 12.1-3, Metallurgical Industry (2/98) at:

https://www3.epa.gov/ttn/chief/ap42/ch12/final/c12s01.pdf#:~:text=All%20three%20aluminum%20cell%20configurations%20require%20a%20%22paste%22,as%20an%20ancillary%20operation%20at%20a%20reduction%20plant.

[11] Defendants' Joint Brief in Support of Frye Motion, ECF 297 contains 1,018 pages including complex scientific literature within its Appendix.

[12] At deposition:

> Dr. Zhang testified to his educational background, experience and training which allowed him to correctly apply the Bradford Hill Criteria and review the medical and scientific literature to reach his conclusions. Dr. Zhang was a professor in the Department of Pathology and Oncology Science, an associate professor in preventive medicine and a director of the Molecular Pathology Laboratory at Mt. Sinai Medical Center until a few months before his deposition in December 2017. Since leaving Mt. Sinai, he has pursued a private practice and joined the V.A. Medical Center as a consulting pathologist. (Exhibit D, Zhang depo., App. p. 39). He has two main areas of practice: (1) pathology; and (2) occupational environmental medicine. (Id. at p. 38). He explained that as an occupational medicine physician, he manages patients who are injured at work, figures out what caused their injury, what the patient's symptoms are, how to treat the patient and how to prevent the injury in the future. (Id. at p. 40). As a professor of oncology science at Mt. Sinai for 25 years, his focus was on the study of cancer and anything related to cancer. (Id.). He earned a Master's in Public Health which he

explained required the study of public health issues and included the study of epidemiology, toxicology and biostatistics and how to design a clinical study, including trials. (Id.). He also has a Ph.D. which he received from New York University School of Medicine. His focus for his Ph.D. was biology, molecular biology and DNA replication. (Id. at pp, 42-43). Dr. Zhang's background makes him uniquely qualified to consider the link between a disease and occupational exposure to chemicals in the workplace.

Plaintiffs' Brief in Opposition, ECF 301 at 18. See also Zhang Report dated June 10, 2016 at pp. 1-2 (Plaintiffs' Appendix in Support of Brief, ECF 302, Exh. B at 11-12).

[13] This Court takes note of the following legal propositions as referenced at 52 Am. Jur. Trials 473 (May 2022):

General and specific causation: Toxic tort cases usually require proof of both "general" and "specific" causation with regard to the effects of the toxic substance, and proving one type of causation does not necessarily prove the other, and both are needed in situations where direct, reliable medical testing for specific causation has not taken place. "General causation" exists in toxic tort cases when a substance is capable of causing a particular injury or condition in the general population, while "specific causation" exists when a substance causes a particular individual's injury. See West's Key Number Digest, Negligence 404.

General and specific causation: In toxic tort cases, "general causation" is whether a substance is capable of causing a particular injury or condition in the general population, while "specific causation" is whether a substance caused a particular individual's injury. Specific causation requires that a plaintiff show that the injured person is similar to those in the epidemiological studies, that he was exposed to the same substance, and that the exposure or dosage levels were comparable to or greater than those in the studies. See West's Key Number Digest, Products Liability 15.

[14] Id. (footnote added). IARC is the International Agency for Research on Cancer.
See https://www.iarc.who.int/.

[15] See e.g., Appendix in Support of Plaintiffs' Brief in Opposition to Defendants' Joint Supplemental Brief Regarding Report of Plaintiffs' Expert David Alfred I. Neugut MD, PhD (ECF 284 at i-ii) including Expert Neugut's General Causation report dated June 14, 2016 (Exh. A.) with the following referenced epidemiological reports:

Gibbs GW, Labreche, F. Cancer Risk in Aluminum Reduction Plant Workers: A Review J Occup & Environ Med. May 2014; 56(55): S40-S59 (Exh. B);

Ronneberg, A. et al. Epidemilogic Evidence of Cancer in Aluminum Reduction Plant Workers American Journal of Industrial Medicine 1992 22:573-590 (Exh. C);

Boffetta P, Jourenkova N, Gustavsson P Cancer Risk fromOccupational and Environmental Exposure to Polycyclic Aromatic Hydrocarbons Cancer Causes Control. 1997 8: 444-472 (Exh. D);

Romundstad P. Andersen, Haldorsen, T., Cancer Incidents Among Workers in 6 Norwegian Aluminum Plants. Scand J Work Environ Health 2000; 26: 461-469 (Exh. E);

Spinelli JJ. Cancer Risk in Aluminum Reduction Plant Workers (Canada) Cancer Causes Control. 2006 Sept: 17 (7): 939-48 (Exh. F);

Rockette, H. Mortality Studies of Aluminum Reduction Plant Workers: Potroom and Carbon Department J Occup Environ Med. 1983; 25: 549-557 (Exh. G);

Gibbs, G.W. et al. Mortality and Cancer Incidence in Aluminum Smelter Workers A 5-Year Update J Occup Environ Med. 2014 56: 739-764 (Exh. H);

Bennington, J. Cancer of the Kidney- Etiology, Epidemiology, and Pathology Cancer. 1973 32: 1017-1029 (Exh. I);

NIOSH: Criteria For a Recommended Standard. Occupational Exposure to Coal Tar Products U.S. Department of Health, Education, Welfare, Public Health Service Center for Disease Control, National Institute for Occupational Safety and Health, Publication No. 78-107 1977 (Exh. J);

NTP (National Toxicology Program). 2014 Report on Carcinogens Thirteenth Edition 2014 Research Triangle Park, NC: U.S. Department of Health and Human Services, Public Health Service (Exh. K):

International Agency for Research on Cancer (IARC), IARC Monographs on the Evaluation of the Carcinogenic Risks of Chemicals to Humans, Polynuclear Aromatic Compounds, Part 4, Bitumens, Coal-tars and Derived Products, Shale Oil and Soots IARC, Lyn, France 276 pages,1985 (Exh. L);

Centers for Disease Control and Prevention (CDC). Coal Tar Pitch Volatiles, Immediately Dangerous to Life or Health Concentrations (IDLH). National Institute for Occupational Safety and Health (NIOSH), 1994 (Exh. M); and

Agency for Toxic Substances and Disease Registry (ATSDR), Toxicological Profile for Wood Creosote, Coal Tar Creosote, Coal Tar, Coal Tar Pitch, and Coal Tar Pitch Volatiles U.S. Department of Health and Human Services, Public Health Service, 394 pages, 2002 (Exh. N).

[16] Sir Albert Bradford Hill, The Environment and Disease: Association or Causation, 58 Proc. Royal Soc. Med. 295 (1965). Albeit, our Pennsylvania Supreme Court characterizes the Bradford Hill Methodology as the Bradford Hill "Criteria", this Court acknowledges that the Bradford Hill Methodology contains "nine different viewpoints" per the author himself. Use of and adoption of the term "criteria" herein does not imply nor connote that any criterion is to be evaluated by this trial court as having any more or less weight than any other criterion. The terms "criteria", "viewpoints", or "factors" shall be used interchangeably herein as related to the Methodology. It is not the function of this Court to evaluate the application or conclusions reached by experts in their use of the Bradford Hill Methodology, but rather to evaluate whether the Bradford Hill Methodology is an accepted methodology in the relevant scientific community per Frye and used as a basis for the respective expert's application of facts to the methodology and conclusions reached.

[17] Reports from the Journal of Occupation Environmental Medicine are available on PubMed. PubMed is a free resource supporting the search and retrieval of biomedical and life sciences literature with the aim of improving health–both globally and personally. The PubMed database contains more than 32 million citations and abstracts of biomedical literature. See https://pubmed.ncbi.nlm.nih.gov/about/. To be clear, this Court does not profess any scientific expertise, but does have the fundamental ability to conduct a simple keyword search on a public database with information provided by experts and counsel to confirm or disavow an assessment of renegade or novel science methodology within the parameters of Pennsylvania's Frye standards.

[18] As referenced therein, Id. at S5:

> From Alcoa, Inc (Dr Wesdock), Richmond, Va; and International Aluminium Institute (Dr Arnold), London, England. This is an open-access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives 3.0 License, where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially. Dr Wesdock is a full-time employee of Alcoa, Inc, and holds shares in Alcoa, Inc. This manuscript was prepared during the course of his employment. He is the current chair of the International Aluminium Institute (IAI) Health Committee. Dr Arnold is the occupational health consultant for the IAI and invited participant to the IAI's Health Committee. This manuscript was prepared during the course of his consulting activities to the IAI. The authors declare no conflicts of interest. Address correspondence to: James C. Wesdock, MD, MPH, Alcoa, Inc, 6641 W Broad St, Mailstop G-100, Richmond, VA 23230 (james.wesdock@ alcoa.com).
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[19] GW Gibbs has been retained as Defendants' expert. See Gibbs June 2016 Report, ECF 297, Appendix, Exh. E and Gibbs July 14, 2016 Report, ECF 297, Appendix, Exh. F.

[20] As stated by Sir Bradford Hill:

> I have no wish, nor the skill, to embark upon a philosophical discussion of the meaning of 'causation'. The 'cause' of illness may be immediate and direct, it may be remote and indirect underlying the observed association. But with the aims of occupational, and almost synonymously preventive, medicine in mind the decisive question is whether the frequency of the undesirable event B will be influenced by a change in the environmental feature A. How such a change exerts that influence may call for a great deal of research. However, before deducing 'causation' and taking action we shall not invariably have to sit around awaiting the results of that research. The whole chain may have to be unravelled or a few links may suffice. It will depend upon circumstances.
>
> Disregarding then any such problem in semantics we have this situation. Our observations reveal an association between two variables, perfectly clear-cut and beyond what we would care to attribute to the play of chance. What aspects of that association should we especially consider before deciding that the most likely interpretation of it is causation?

Sir Albert Bradford Hill, The Environment and Disease: Association or Causation, 58 Proc. Royal Soc. Med. 295 at 295 (1965). (emphasis added).

It is clear from Sir Bradford Hill's statement that reaching the conclusion of causation is not a stagnant process measured and restricted by a specific point in time. In the realm of toxic torts, causation is dependent upon the methodology used by an expert to analyze relevant data and associative findings in the scientific literature. One expert may feel comfortable reaching a conclusion of causation by utilizing "a few links" whereas another expert may not feel comfortable reaching a conclusion on causation until "the whole chain has been unravelled." Nevertheless, both competing conclusions may be properly founded in application of the correct methodology.

In the instant matter, Dr. Zhang engaged the Bradford Hill criteria based on scientifically researched studies of: the chemical composition and applications of coal tar and coal tar pitch; the health effects of coal tar and coal tar products to cancer; the state of the art that finds coal tar pitch carcinogenic to humans; the genotoxic mechanism of coal tar pitch upon DNA; epidemiological studies including the association of aluminum smelting to lung and bladder cancers; and regulatory findings related to CTPV exposure limits. See Zhang 6/10/2016 Report, infra at pp. 3-7. In support of his findings related to general causation, Dr. Zhang asserts:

> The association between coal tar-derived substances, a complex mixture of polycyclic aromatic hydrocarbons, and cancer is well established. Friesen MC et al (Occup Environ Med. 2007 Apr;64(4):273-8) compared the dose-response relationships for two common measures of coal tar-derived substances, benzene-soluble material (BSM) and benzo(a)pyrene (BaP), and evaluated which among these is more strongly related to the health outcomes. The study population consisted of 6423 men with > or =3 years of work experience at an aluminium smelter (1954-97). Three health outcomes identified from national mortality and cancer databases were evaluated: incidence of bladder cancer (n = 90) and incidence of lung cancer (n = 147). The BaP and BSM cumulative exposure metrics were highly correlated (r = 0.94). The increase in model precision using BaP over BSM was 14% for bladder cancer and 5% for lung cancer. The log-linear BaP model provided the best fit for bladder cancer. The log-log dose-response models, where risk of disease plateaus at high exposure levels, were the best-fitting models for lung cancer. The authors concluded that BaP and BSM were both strongly associated with bladder and lung cancer.

Zhang 6/10/2016 Report, p. 6 (ECF 302, Appendix, Exh. B at p.16).

Simply put, this Court finds expert Zhang's use of epidemiological studies relating an environment containing coal tar pitch volatiles (aluminum smelting) with a disease (cancer) to be attributable "beyond . . . the play of chance" and does not preemptively preclude application of the Bradford Hill methodology. Science is a method testing a hypothesis based upon observed associations that may lead to a conclusion of cause and effect.

[21] Cf. Defense Counsel at 12/2/2021 Frye Oral Argument stating:

> [T]the mere fact there might be an increase in the stork population in a community, and at the same time, birthrates in that community are increasing, and it doesn't support a conclusion that the storks are bringing the babies, or that any couple in that community is more likely to have a child. Rather, this is just some simply unrelated chance relationship.

(12/2/2021, Tr. 11).

This Court finds the stork analogy not applicable to this matter – the Plaintiffs' proffered association is not some simply unrelated chance relationship between agent and disease. There is an established relationship between CTPV-PAHs and cancer as identified in the record, reports, and expert literature.

[22] It is significant to recognize that the cited Federal Daubert cases are pharmaceutical product cases, and not environmental exposure cases – except for Defendants' citation to a Federal Magistrate's Memorandum Opinion in McMunn v. Babcock & Wilcox (plaintiffs claim that inhalation of radioactive uranium from defendant's facility caused cancer). Cf. McMunn, 2014 WL 81478 (W.D. Pa. February 27, 2014) (District Court reverses Magistrate's exclusion of expert's opinions under Daubert standard).

[23] "Thus, for all the reasons set forth above, the Court concludes that Dr. Kulig's methodology and opinions are inadmissible under Federal Rule of Evidence 702 and Daubert." Soldo, infra at 570. Moreover, Soldo has received negative treatment: 1. Hyman & Armstrong, P.S.C. v. Gunderson, 279 S.W.3d 93 (Ky. 2008); 2. Kobar by Kobar v. Novartis Corporation, 2005 WL 8161113 (D. Ariz. 2005); 3. In re Tylenol (Acetaminophen) Marketing, Sales Practices and Products Liability Litigation, 181 F.Supp.3d 278 (E.D. Pa. 2016); 4. Perkins v. Origin Medsystems, Inc., 299 F.Supp.2d 45 (D. Conn. 2014); 5. McCarrell v. Hoffman-La Roche, Inc., 2009 WL 614484 (N.J. Super.A.D. 2009); 6. In re: Tylenol (Acetaminophen) Marketing, Sales Practices, and Products Liability Litigation, 2016 WL 3997046 (E.D. Pa. 2016); and, 7. In re Johnson & Johnson Talcum Powder Products Marketing, Sales Practice and Products Litigation, 509 F.Supp.3d 116 (D.N.J. 2020). See also, Westlaw KeyCited List of Negative Treatment for Soldo, infra identifying applicable headnotes.

[24] In contrast to the matter sub judice, the expert in Frischhertz was excluded from rendering an opinion on general causation "[b]ecause there is no date showing an association between Paxil and limb defects, [therefore] no association existed for Dr. Goldstein to apply the Bradford-Hill criteria." Frischhertz, infra at *3. As reiterated herein, there is an association between CTPV-PAHs and cancer to engage the Bradford Hill criteria and opine on general causation.

[25] Defendants refer to Jones, infra at *1268-1269. In Jones, the expert did not "establish that the causal association existed based on existing medical literature." Jones, at *1269. Again, that is not the case before this Court. Of note, the Alabama District Court in Jones, wrestled with the varying district courts' analyses and application of the Bradford Hill criteria, including that:

> . . . the Eleventh Circuit and a substantial number of other Circuit courts have rejected the epidemiologic study threshold for sufficient proof of general causation. See Rider v. Sandoz Pharms. Corp., 295 F.3d 1194, 1198 (11th Cir. 2002)("It is well-settled that while epidemiological studies may be powerful evidence of causation, the lack thereof is not fatal to a plaintiff's case."); see also In re Lipitor, 174 F.Supp.3d at 916 ("While a causation opinion need not be based on epidemiological studies ... it is well established that the Bradford Hill method used by epidemiologists does require that an association be established through studies with statistically significant results.") (internal citation omitted) (emphasis in original).
>
> In accordance with the Eleventh Circuit's holding in Rider, Dr. Hinshaw was not required to rely on an epidemiological study showing a causal association between the drug and the injury alleged. However, he did need to establish that the causal association existed based on existing medical literature.

Jones, 235 F.Supp.3d at *1270. (bold emphasis added).

In the case sub judice, Dr. Zhang has established that a causal association between CTPV-PAHs and cancer exists based on existing medical literature, including epidemiological studies.

Of additional note, the Alabama District Court stated,

> [s]ome extrapolation is permitted and sometimes even necessary. See Joiner, 522 U.S. at 146, 118, 118 S.Ct. 512 S. Ct. at 519 ("[C]onclusions and methodology are not entirely distinct from one another. Trained experts commonly extrapolate from existing data."). However, the Supreme Court in Joiner also made clear that "nothing in either Daubert or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the ipse dixit of the expert." Id.

Jones, 235 F.Supp.3d at *1271.

In the instant matter, this Court does not find Dr. Zhang engaged the Bradford Hill criteria by his ipse dixit. To the contrary, his evaluation employs a proper methodology based on existing medical literature and epidemiological studies; ever-mindful that Defendants' citation to federal court cases and the analyses contained therein apply the Daubert standard and not Frye.

[26] Defendants cite to pages 924-26 of the South Carolina District Court's Opinion pertaining to its Daubert analysis yet overlooks the significant rationale that applies more specifically to a Frye analysis related to the Bradford Hill methodology:

> Once an association has been found between exposure to an agent and development of a disease, researchers consider whether the association reflects a true cause-effect relationship. In assessing causation, epidemiologists "first look for alternative explanations for the associations, such as bias or confounding factors," and then apply the Bradford Hill factors to determine whether an association reflects a truly causal relationship.
>
> . . . .
>
> Whether an established association is causal is a matter of scientific judgment, and scientists appropriately employing this method "may come to different judgments" about whether a causal inference is appropriate. ("Assessing whether an association is causal requires an understanding of the strengths and weaknesses of the study's design and implementation, as well as a judgment about how the study findings fit with other scientific knowledge.").

In re: Lipitor, 174 F.Supp.3d at 916 (Dist. Ct. S.C. 2016).

On appeal, the Fourth Circuit noted the distinction that

> "[p]harmaceuticals like Lipitor, . . . lend themselves quite well to dosage analysis. Unlike substances in other toxic tort cases (talcum powder, for instance, or asbestos), pharmaceutical drugs are typically prescribed and consumed in measured and knowable quantities. Because patients on Lipitor know their precise dose, and because there is data available on many other patients taking that same dose, pharmaceutical injury litigation may indeed present the "rare" case Westberry described in which a patient is exposed to a chemical in a readily quantified way. We do not suggest that every case involving a claim of injury resulting from a pharmaceutical drug will require a dose-by-dose analysis, and an expert witness will not necessarily need to define the precise lower bound of exposure risk. The appropriate level of analysis will depend on the circumstances of the case and the capacity of current scientific methods.

In re: Lipitor, 892 F.3d at 639-640 (4th Cir. 2018) (

The case before this Court does not involve a pharmaceutical, nor does this Court adopt any Daubert rationale that dose-response is a prerequisite for engagement of the Bradford Hill criteria to render an expert opinion on general causation relating to environmental toxic exposure. As identified in the record herein, including Defendants' expert Gibbs, the Defendants do not contest an association between CTPV-PAHs and cancer based in the medical literature and epidemiological studies relating to environmental exposure. This is not a case of pharmaceutical ingestion. Moreover, in contrast to In re: Lipitor, compare Westlaw KeyCite Negative Treatment List re: In re: Roundup Products Liability Litigation, 358 F.Supp.3d 956 (N.D. Cal. 2019) and Hardeman v. Monsanto Company, 997 F.3d 941 (9th Cir. 2021). Suffice it to say, the manner federal courts apply the Daubert standard to toxic tort cases is variegated from garden to garden.

[27] As stated by our Pennsylvania Supreme Court:

> Whether we refer to the role of the trial court in a Frye contest as that of a "gatekeeper" is not consequential. What is of consequence is the role that the trial court plays during Frye proceedings. A careful review of our prior Frye decisions makes clear that it is the trial court's proper function to ensure that the expert has applied a generally accepted scientific methodology to reach his or her scientific conclusions. To fulfill this function, the trial court must be guided by scientists in the relevant field, including the experts retained by the parties in the case and any other evidence of general acceptance presented by the parties (e.g., textbooks). Conversely, trial courts may not question the merits of the expert's scientific theories, techniques or conclusions, and it is no part of the trial court's function to assess whether it considers those theories, techniques and/or conclusions to be accurate or reliable based upon the available facts and data. As is plainly set forth in Rule 702(c), the trial court's role is strictly limited to determining whether "the expert's methodology is generally accepted in the relevant field." Pa.R.E. 702(c). The trial court may consider only whether the expert applied methodologies generally accepted in the relevant field, and may not go further to attempt to determine whether it agrees with the expert's application of those methodologies or whether the expert's conclusions have sufficient factual support. Those are questions for the jury to decide.
>
> Judges typically have no specialized training that qualifies them to weigh in on the expert's resolution of the highly complex issues involved in the determination of the causality of human disease resulting from exposure to specific toxins. By requiring the scientists addressing those issues to utilize generally accepted methodologies, the trial court conducting a Frye hearing ensures that the jury receives scientific opinion that is the result of sound research, while simultaneously leaving sufficient flexibility for new research to arrive at new conclusions previously uncredited.
>
> Based upon our review, we must agree with the Superior Court's assessment that the trial court's Frye inquiry was at times "overly expansive." Walsh, 191 A.3d at 844. For example, the trial court rejected as scientifically unacceptable "animal studies, test-tube studies and studies that include significant limiting language as to the applicability of their results to causation theories." Trial Court Opinion, 10/5/2016, at 12-13. According to the trial court, it is not generally accepted methodology "to select portions of studies that favor a certain outcome while ignoring direct statements against that outcome within the same article." Id. In so ruling, however, the trial court did so unilaterally, without citation to any authority or to the voluminous expert deposition testimony in the certified record. Whether it was in accordance with generally accepted methodology to rely upon animal and/or test tube studies of the sorts cited . . . constituted a scientific judgment that must be guided by the experts, not a trial court. Similarly, whether [an expert] could rely upon articles containing limiting language would depend upon the precise nature of that limiting language and the purpose for which [the expert] was relying upon it. Again, it was not the province of the trial court, but rather the scientists (including [the expert]), to guide this decision. The trial court's role was limited to determining whether [the expert] reached his scientific conclusions by applying generally accepted scientific methodologies.

Walsh, 234 A.3d at 458-459 (Pa. 2020) (bold emphasis added).

[28] This Court does not pass judgment on Counsel's oversight, but reminds all counsel of Rule of Professional Conduct, 3.3(a)(2) Candor Toward the Tribunal, in pertinent part:

> (a) A lawyer shall not knowingly:
> (2) fail to disclose to the tribunal legal authority in the controlling jurisdiction known to the lawyer to be directly adverse to the position of the client and not disclosed by opposing counsel.

In this matter, opposing counsel did disclose Judge Cercone's subsequent Opinion.

[29] In this matter, this Court provides Defense Counsel the benefit of the doubt that Defendants are not asserting that the Frye standard, including the recent Pennsylvania Supreme Court decision in Walsh, infra, should be reversed in favor of Pennsylvania adopting the federal Daubert standard. See Rule of Professional Conduct 3.1. Pa.R.P.C. 3.1 ("A lawyer shall not bring or defend a proceeding, or assert or controvert an issue therein, unless there is a basis in law and fact for doing so that is not frivolous, which includes a good faith argument for an extension, modification or reversal of existing law.") As such, this Court has undertaken an analysis of the federal Daubert cases cited by Defendants on the basis that it is asserting an analogous argument grounded upon

federal court rationale. Henceforth, counsel asserting application or an analysis of the federal Daubert standard in Pennsylvania Frye Motion practice before this Trial Court are precautioned with the potential of running afoul of Pa.R.P.C. 3.1. This Trial Court is constrained by the Frye strictures as pronounced in Walsh, infra, and does not have the temporal judicial luxury or resources to academically parse the jurisprudential nuances of varying federal district and circuit court rationales in the application of the Daubert Standard. A word to the wise is sufficient for future Pennsylvania Frye Motion practice.

[30] At this juncture, it should be clear to the Allegheny County Bar, via our Pennsylvania Supreme Court in Walsh, infra, that Daubert standards are not applicable to a Frye Motion and assertions based in a Daubert analysis will be met with a jaundiced eye. Moreover, this Court shall remain constrained from entertaining any future requested deep-dive analysis related to evaluating and comparing competing expert's use of highly nuanced complex scientific data. In short, this Court shall restrict its Frye Motion evaluations to determine whether an expert applied the proper methodology accepted in the relevant scientific community to reach their opinion conclusion(s) based in scientific data and literature.

[31] This Court also takes judicial notice of the following information in the public domain regarding the scientific interest regarding the association of cancer and noncancer mortality among aluminum smelting workers in Badin, North Carolina. See ES McClure, et al., Cancer and noncancer mortality among aluminum smelting workers in Badin, North Carolina, (American Journal of Industrial Medicine), published 10 July 2020. See also https://onlinelibrary.wiley.com/doi/full/10.1002/ajim.23150 and https://doi.org/10.1002/ajim.23150. The Study results, while imprecise, suggest excess respiratory and bladder cancers among pot room workers in a contemporary cohort of union employees at a US smelter. The Aluminum Smelting Plant in Badin, North Carolina has been identified as a Prebake plant: "Aluminum companies are operating more than 50 different types of prebake (PB) cell technologies at smelters worldwide. . . . Five aluminum smelters are now operating with the Alcoa P-155 170 kA two side-riser, point-feed PB cell technology introduced in 1969, including Badin, Grande Baie, Laterrière, Pt. Henry, and Sebree (Figure 2)." (emphasis added). A. Tabereaux, Prebake Cell Technology: A Global Review, (Journal of The Minerals, Metals & Materials Society, 52 (2) (2000), pp. 22-28)). See also
https://www.tms.org/pubs/journals/JOM/0002/Tabereaux-0002.html#authors.

[32] The irony of the "cherry-picking" argument used by litigants is not lost on this Court. Invariably, and as bore out in this matter, legal advocates – by their very nature – "cherry-pick" case law, citations, testimony, documents, pleadings, exhibits, etc., to summarize their respective positions. For example, Defendants in this matter reference:

- Defendants' Frye General Causation Oral Argument Demonstratives
- Excerpts from Deposition of Dr. David Zhang;
- Excerpt from 2004 US Surgeon General Report on the Health Consequences of Smoking;
- Excerpt from A. Bradford Hill, The Environment and Disease Association or Causation
- Excerpt from Federal Judicial Center Reference Manual on Scientific Evidence;
- Excerpt from Cancer Epidemiology and Prevention (Third Edition), edited by David Schottenfield and Joseph F. Fraumeni, Jr.; and
- Excerpts from Epidemiology in Medicine, by Charles H. Hennekens and Julie E. Buring (1987).

Representative of the summarized nature of the parties' submissions, Defendants reduced 1,416 pages of Cancer Epidemiology and Prevention, Oxford University Press; 3rd edition (August 24, 2006) to two sentences:

> All of these [Bradford Hill] criteria were meant to be applied to evidence related to an already established statistical association; if no association has been observed, these criteria are not relevant. Hill explained how if a given criterion were satisfied it strengthened a causal claim.

Id. at p. 6. (emphasis added).

In the instant matter an association between CTPV-PAHs and cancer has been observed.

The 1,034 pages of the Federal Judicial Center Reference Manual on Scientific Evidence (Third Edition) is reduced to an excerpt from pages 598-599 which contains the following:

> As mentioned in Section I, epidemiology cannot prove causation; rather, causation is a judgment for epidemiologists and others interpreting the epidemiological data. Moreover, scientific determinations of causation are inherently tentative. The scientific enterprise must always remain open to reassessing the validity of past judgments as new evidence develops.

Id. at 598. (emphasis added).

As evaluated herein, Dr. Zhang submitted an epidemiological basis for an established association between CTPV-PAHs and cancer to engage the Bradford Hill criteria. Moreover, a plain-reading of the excerpted texts leaves room to the discretion and judgment of competing experts to battle out the strengthen of a causal claim as applied to the scientific evidence supporting an association "beyond the play of chance."

The trial court does not have the academic luxury as a scientific think tank pining for the next extraneous voluminous submission to philosophically opine on cause and effect. The evaluation of the proper use of excerpted scientific data and literature is for the fact-finder at the time of trial, subjecting the expert to vigorous cross-examination. To preclude a party's expert opinion based upon a professional summarization ("cherry-picking") would further undermine the already perceptively bloated and voluminous submissions accompanying Frye Motion practice. Mindful of William Shakespeare, "therefore, since brevity is the soul of wit, and tediousness the limbs and outward flourishes, I will be brief." Hamlet, Act-2, Scene-2, lines 86-92. Were it so that Frye legal briefs were.

[33] "In thus putting emphasis upon the strength of an association we must, nevertheless, look at the obverse of the coin. We must not be too ready to dismiss a cause-and-effect hypothesis merely on the grounds that the observed association appears to be slight. There are many occasions in medicine when this is in truth so." Hill AB. The Environment and Disease: Association or Causation?, infra at 296.

[34] As stated by our Pennsylvania Supreme Court:

> Extrapolation is commonly used by scientists in certain limited instances ..., for example, when the medical inquiry is

> new or the opportunities to examine a specific cause and effect relationship are limited; when the number of cases limits study of the disease; or ... when ethical considerations prevent exposing individuals to a toxic substance for research purposes. Given the breadth of these definitions of the term, except in those rare circumstances in which a perfectly comparable study supports a direct causal relationship between a particular agent and a disease, virtually every expert opinion on substantial causation will likely contain instances of the use of extrapolation.

Walsh, 234 A.3d at 462-463 (internal citations omitted). See also, Zhang 8/25/2016 Supplemental Report:

> There are a limited number of studies and/or cohorts of PAH exposure in the pre-bake smelting setting, compared to that of the Soderberg process. Therefore, under these circumstances, it is generally accepted methodology to rely upon and extrapolate from studies performed on occupational exposure to PAHs in the Soderberg plants, as well as in other occupations and industries, such as workers exposed to CTPVS/PAHS in coke ovens, gas producers, paving, and roofing in rendering opinions on general causation of PAH exposure even in a pre-bake smelter. Furthermore, Ronneberg et al demonstrated that the bladder cancer incidence increased in workers in a prebake plant (SMR 1.3-1.6) (Mortality and cancer morbidity in workers from an aluminum smelter with prebake carbon anodes-part II: cancer morbidity. Occup Environ Med 1995; 52: 250-254), supporting cancer development in this pre-bake environment.

Zhang 8/25/2016 Supplemental Report at p. 4, ECF 302 Appendix Exh. C at p. 30.

[35] This Court has been tasked to review and analyze notebooks and electronic-formatted copies containing the parties' pleadings, briefs, expert reports, supporting exhibits, and deposition transcripts related to complex scientific issues that have been in legal contention since 2004.

For example, the current round of Defendants' Joint Frye Motion to exclude Dr. Zhang's general causation opinions involves review of:

- Defendants' Joint Motion to Exclude Dr. Zhang's Gen. Causation Opinion, ECF 297 at 1,018 pages;
- Plaintiffs' Brief in Opposition, ECF 301 at 55 pages;
- Plaintiffs' Appendix in Support of Brief in Opposition, ECF 302 at 873 pages; and
- Defendants' Joint Sur-Reply Brief , ECF 303 at 40 pages.

The aforementioned is but a representative slice of the entire body of work presented to this Trial Court including, at current, 305 docket entries excluding Court transcripts.

Albeit this Court whole-heartedly accepts its judicial responsibility with a zeal for discerning jurisprudential challenges and rendering decisions; the time and effort required of this or any other trial court to ascertain the respective positions of the parties, the factual underpinnings, scientific methodologies, and application of law to render a decision related to Frye Motions is not made any easier by the density or voluminous nature of parties' related pleadings and expert reports. Trial courts do not sit nor can function as scientific review boards with litigants presuming any given court's expertise in unraveling the varying complex and nuanced scientific, medical, or technological conclusions in dispute and presented in erudite, if not recondite nomenclature. This is not a critique of expert testimony – it is a confession of the trial court's inherent limitation within the parameters of addressing methodology in the Frye motion context.

To be clear, this Trial Court as a pragmatic arbiter of complex legal issues expects henceforth, that parties submitting expert reports and Frye motion challenges in the Court of Common Pleas of Allegheny County shall abide by and be constrained by our Supreme Court's guidance in Walsh, infra and the parameters set forth herein. Counsel shall be mindful of Rules of Prof. Conduct, Rule 3.2, 42 Pa.C.S.A., Expediting Litigation, wherein, "A lawyer shall make reasonable efforts to expedite litigation consistent with the interests of the client." Egregious conduct exceeding the bounds of advocating a good faith basis for a methodology, failing to clarify a methodology or a challenge thereto, shall subject the offending party to sanction; including but not limited to an award of counsel fees.

Simply stated, expert reports should clearly define the methodology(ies) employed and Frye Motion challenges should clearly define the objection(s) to the proffered methodology(ies). The expert's explanation of method should be clear on its face and ascertainable by the layperson in a separate introductory section. It is the responsibility of experts and learned legal counsel to be concise in defining the proffered methodology. This Court does not have the academic luxury, judicial province, nor scientific credentials to render a Thomist analysis on the complex scientific nuances offered by competing experts dancing opinions on the head of a pin. To expect otherwise, would place a jurist in the position of advocate and flip jurisprudence on its head.

As a prospective admonition, learned counsel is best served to employ their professional legal training to address methodology and not conclusions for purposes of Frye motion challenges. It is the burden of counsel and experts to make clear the methodology employed – the court cannot, as a practical or jurisprudential matter, sift through hundreds, if not, thousands of pages of complex scientific documents – to search, find, and comprehend the analytical basis of an expert's method in the relevant scientific community. This admonition is particularly pertinent in toxic tort cases whereby issues of general and specific causation are essential elements as defined by our Supreme Court. The responsibility to be clear, concise, and readily comprehensible is upon the parties. Frye motions are not the judicial mechanism for challenging an expert's opinion beyond the scope of the proffered methodology(ies) as applied in the relevant scientific community nor to conduct a mini-trial on ultimate factual issues or expert conclusions if granted a hearing on the Frye motion. The parameters for the Frye motion are self-limiting to methodology, not conclusions reached.

The above-stated trial court standard in no manner prejudges whether any expert report or a Frye motion challenge to an expert's methodology will be favorable or unfavorable to any party and is not an indictment of the parties in the case sub judice. In effect, with the guidance provided by our Superior and Supreme Courts in Walsh, infra, this standard applies to the scope of the Frye motion. Moreover, the trial court's limited scope of reviewing the relevant expert report(s) and Frye motion, does not preclude any party from filing motions for summary judgment, limine, or objections at the time of trial related to admissibility or other legal issues pertaining to expert testimony. A word to the wise is sufficient: an expert's methodology or objections thereto should be clear, concise, and comprehensible as applied by the relevant scientific community for purposes of the Frye Test standards.

Casey Joseph and Lacey Joseph v. The Goodyear Tire & Rubber Co., et. al.

General Jurisdiction—Specific Jurisdiction

No. GD17-006580, GD17-006578. In the Court of Common Pleas of Allegheny County, Pennsylvania, Civil Division. Ignelzi, J.—date, 2022.

MEMORANDUM OPINION and ORDER OF COURT
Re: Goodyear's Second Motion for Reconsideration of Jurisdiction

AND NOW, to-wit, this _____ of March, 2022, upon review and consideration of Defendant, The Goodyear Tire & Rubber Company's ("Goodyear") [Second] Motion for Reconsideration and Memorandum of Law dated February 1, 2022 based upon the Pennsylvania Supreme Court's Opinion in Mallory v. Norfolk S. Ry. Co., (Pa. 2021) [ECFs 141, 142]; Plaintiffs' Brief in Opposition [ECF 144]; Goodyear's Reply Brief [ECF 146]; Pennsylvania Superior Court Order dated May 12, 2021 at 35 WDM 2021 [ECF 140](Goodyear's Petition to Appeal Interlocutory Order denied); Court Order dated April 28, 2021 [ECF 134](Goodyear's Motion for Reconsideration denied); Court Order dated April 12, 2021 [ECF 131](Goodyear's Motion to Enable Interlocutory Appeal denied); Court Order dated March 8, 2021 [ECF 119] (Goodyear's Motion for Judgment on Pleadings for lack of jurisdiction denied); Memorandum/Opinion and Order of Court of Judge Colville dated October 24, 2018 [ECF 93]; and the record herein, this Court has reconsidered the issues presented and submits the following Memorandum Opinion and accompanying Order of Court:

Memorandum Opinion

This action concerns a single-vehicle commercial truck accident that occurred on May 8, 2015, on Interstate 79 in West Virginia, four miles south from the Pennsylvania border. The Plaintiff Casey Joseph, a Pennsylvania resident, alleges that while operating the truck on behalf of his Pennsylvania employer, a commercial truck tire blew-out. Plaintiffs allege and identify the commercial truck tire as a Goodyear UniCircle G167 retread. See ECF 141 at 4, ¶¶11-12. As a result of the tire blow-out, Joseph lost control of the truck which rolled over, caught fire, exploded, and thereby caused him injury. The West Virginia Traffic Crash Report identifies two witnesses, both Pennsylvania residents. See ECF 144, Exhibit 1 at 9-10. Mr. Joseph was transported to UPMC Mercy Hospital in Pittsburgh, Pennsylvania for treatment of burns. ECF 144, Exhibit 1 at 2.

I. Jurisdictional Facts and Background

As set forth in Plaintiffs' Brief in Opposition [ECF 144] to Goodyear's Second Motion for Reconsideration [ECF 141], Plaintiffs aver in pertinent part, at the identified paragraphs below:

> 4. Prior to 2013, R.J Wright & Sons owned a 2001 International 4900 tractor with a tanker trailer identified by Vehicle Identification Number (VIN) 1HTSHDR31H361776. Service records produced in discovery confirm that, during the decade culminating in 2013, R.J. Wright & Sons hired Stocker Trucking Company to perform routine service, maintenance, and repair of the tires on the subject truck. See Ex. B attached to Plf's Amd. Complaint. One of these tires had been retreaded with a Goodyear UniCircle G167[1] retread in size 11R22.5 with 9-inch width. See Plf's Amd. Complaint ¶¶ 27-28.
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> 5. In February 2013, R.J. Wright & Sons sold the subject truck to C.H. Bradshaw Co. which, a week later, resold the subject truck and its tire with the defective retread to Pennsylvania company Coen Oil Company LLC in Pennsylvania according to the sale documentation. See Ex. C attached to Plf's Amd. Complaint; see also Plf.'s Amd. Complaint ,¶ 29.
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> 6. Service records produced in discovery confirm that Coen Oil Company had Pennsylvania companies Zappi Oil & Gas and Coen Zappi perform routine service, maintenance, and repair on the subject truck's tires, including the tire with the defective retread. See Ex. D attached to Plf.'s Amd. Complaint. Coen Oil Company made the subject truck available for use to its subsidiary, Coen Markets, Inc., which is also a Pennsylvania company. While Pennsylvania company Coen Oil Company owned the subject truck and its tires, and while Pennsylvania companies Zappi Oil & Gas and Coen Zappi performed service on that truck and its tires, and while Pennsylvania company Coen Markets used the truck and its tires, all of these companies' conduct was regulated by Pennsylvania laws applicable to truck tires and retreads. See, e.g., 34 Pa. Code § 31.28; 67 Pa.Code §§ 171.36, 175.95, 175.110, 175.124, 175.130; Pa. Code 171 App'x A.
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> 7. In 2015, Pennsylvania-resident Casey Joseph worked for Coen Markets in Pennsylvania. See Ex. A attached to Plf.'s Amd. Complaint. It was in Pennsylvania where Joseph came in contact with the defective Goodyear UniCircle G167 retread when he was assigned by his employer to deliver diesel fuel using the subject truck and its tire with the defective retread. See Ex. A attached to Plf.'s Amd. Complaint; see also Plf.'s Amd. Complaint , ¶¶ 25, 26, 36, 39.
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> 8. In the afternoon of May 8, 2015, as Joseph was driving on highway 79 about 4 miles south of the Pennsylvania-West Virginia border, the defective Goodyear UniCircle G167 peeled off the tire casing which caused the subject truck to veer off the road and crash. See Uniform Traffic Crash Report pp. 2, 9-10 (attached as Ex.1). The diesel in the subject truck's tanker burst into flames, and Joseph suffered second-and third-degree bums over most of his body, necessitating life-flight helicopter transport to the University of Pittsburgh Medical Center's Mercy Burn Unit. See id.

Plaintiffs' Brief in Opposition, ECF 144 at 3-5, ¶¶4-7. (footnotes omitted).

In conjunction with the above factual recitation, Plaintiffs have proffered the Affidavit of Jaime D. Jackson, which, inter alia, identifies Goodyear's UniCircle retread technology website pages which have "a dealer locator, and when Goodyear's Pennsylvania customers click on that locator, the customers are redirected to [a Goodyear website page] which is also accessible

from Pennsylvania." See Jackson Affidavit dated 4/26/2018, ECF 144, Exhibit 2 (Plaintiffs' Brief in Opposition, ECF 144, Exhibit 1 at 4, ¶8). Affiant Jackson identifies 70 Goodyear dealers in Pennsylvania. Id. at 6-10, ¶¶10-12. Goodyear's interactive webpage "deliver[s] regular advice to its customers in Pennsylvania . . . . and provides a list of 340 Pennsylvania communities where Goodyear seeks to serve those markets." Id. at 10-11, ¶13. Goodyear "solicits information from Goodyear's customers and also recruits for over 40 different jobs located in Pennsylvania, including tire retreading jobs: [Retread Route Driver and Retread Technician]." Id. at 11-13, ¶14. Pennsylvania residents can "buy Goodyear tires directly from Goodyear from within Pennsylvania and have those shipped to Pennsylvania for installation by a Pennsylvania Goodyear dealer." Id. at 13-15, ¶¶15-17. In Western Pennsylvania, Goodyear owns Goodyear Commercial Tire & Service Center #076 in Cranberry Township; Service Center #080 in Irwin; and advertises to Pennsylvania customers through these service centers. Id. at 17-18, ¶19. Goodyear "has been running Pennsylvania targeting advertisements since 1959." Id.

II. Goodyear's Second Motion for Reconsideration

Goodyear's Second Motion for Reconsideration [ECF 141] resurrects its prior arguments based upon the more recent Pennsylvania Supreme Court Opinion in Mallory v. Norfolk S. Ry. Co., 2021 WL 6067172 (Pa. 2021). Goodyear contends, inter alia, that it is not subject to general personal jurisdiction nor specific personal jurisdiction of this Pennsylvania Court.

Indeed, this Court acknowledges that there are two types of personal jurisdiction: general and specific. Mar-Eco, Inc. v. T & R & Sons Towing & Recovery, Inc., 837 A.2d 512, 515 (Pa. Super. 2003). General jurisdiction "is founded upon a defendant's general activities within the forum as evidenced by continuous and systematic contacts with the state." Id. (quoting Taylor v. Fedra Int'l, Ltd., 828 A.2d 378, 381 (Pa. Super. 2003)). Specific jurisdiction, which is at issue here, "has a more defined scope and is focused upon the particular acts of the defendant that gave rise to the underlying cause of action." Id. (quoting Taylor, 828 A.2d at 381).

Whether a state may exercise personal jurisdiction over a non-resident defendant is tested against both the state's long-arm statute and the Fourteenth Amendment's Due Process Clause. Kubik v. Letteri, 614 A.2d 1110, 1112 (Pa. 1992). Under Pennsylvania's long-arm statute, courts are permitted to exercise personal jurisdiction over a nonresident defendant "to the fullest extent allowed under the Constitution of the United States and may be based on the most minimum contact with this Commonwealth allowed under the Constitution of the United States." 42 Pa.C.S.A. § 5322(b).

This Court addresses general and specific jurisdiction seriatim:

A. General Jurisdiction

Goodyear continues to assert that based upon our Supreme Court's Opinion in Mallory v. Norfolk S. Ry. Co., 2021 WL 6067172 (Pa 2021) that Goodyear's "alleged continuous and systemic affiliations with the Commonwealth of Pennsylvania are irrelevant to the general jurisdiction analysis." ECF 141 at 3, ¶5. This Court disagrees.

Our Pennsylvania Supreme Court in Mallory held a specific section of our Commonwealth's exercise of personal jurisdiction statute, 42 Pa. Cons. Stat. Ann. § 5301(a)(2)(i) unconstitutional as applied.[2] (emphasis added). In Mallory, the plaintiff therein alleged "jurisdiction based exclusively upon Defendant's consent to jurisdiction as manifested by its registration to do business in Pennsylvania." Mallory, at *11. (emphasis added). The Court held that corporate registration under the laws of this Commonwealth does not – of itself – constitute a sufficient basis to enable Pennsylvania courts to exercise general personal jurisdiction over a foreign corporation. "In accord with this jurisprudence, we hold that a foreign corporation's registration to do business in the Commonwealth does not constitute voluntary consent to general jurisdiction[.]" Mallory, at *20. The case sub judice is not based exclusively on Goodyear's compliance with Pennsylvania's now unconstitutional application of the registration statute subsection as a sole basis for jurisdiction.

This Court incorporates herein its previous Orders of April 12, 2021 [ECF 131] and April 28, 2021 [ECF 134], which hold that Goodyear's carrying on of a continuous and systematic part of its general business of marketing and selling tires in this Commonwealth pursuant to 42 Pa.C.S.A. § 5301(a)(2)(iii), and a Goodyear tire being alleged as the identified product subject to Plaintiffs' claims and damages sustained by a Pennsylvanian resident – subjects Defendant Goodyear to Pennsylvania jurisdiction without offending the Due Process Clause.

> As set forth in 42 P.S. § 5301(a)(2)(iii):
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> (a) General rule.--The existence of any of the following relationships between a person and this Commonwealth shall constitute a sufficient basis of jurisdiction to enable the tribunals of this Commonwealth to exercise general personal jurisdiction over such person, or his personal representative in the case of an individual, and to enable such tribunals to render personal orders against such person or representative:
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> (2) Corporations.--
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> (iii) The carrying on of a continuous and systematic part of its general business within this Commonwealth.

In addition to the above-referenced recitation of jurisdictional facts, this Court takes judicial notice from the Allegheny County Department of Court Records that Goodyear has been a named party in 1,875 civil lawsuits in Allegheny County since 2004, which includes 87 cases since 2019.
See https://dcr.alleghenycounty.us/Civil/LoginSearch.aspx

Another example of Goodyear's continuous and systematic part of its general business within Pennsylvania is found at Callender v. Goodyear Tire and Rubber Co., 564 A.2d 180 (Pa. Super. 1989)(plaintiff killed by explosion of a Goodyear bus tire while working in the Goodyear tire workroom at Port Authority of Allegheny County bus maintenance garage). Our Superior Court held that as a Pennsylvania employer, Goodyear "and the exclusivity clause of the Workmen's Compensation Act bars [plaintiff's]

action against Goodyear." Id. at 187. Callender represents an example of Goodyear maintaining its general business of marketing and distributing commercial tires in Pennsylvania but also availing itself of Pennsylvania's legal protections as an employer while placing its commercial products into Pennsylvania's stream of commerce.

This Court has held that Goodyear, at all times material hereto, was carrying on a continuous and systematic part of its general business within this Commonwealth pursuant to 42 P.S. § 5301(a)(2)(iii) and is subject to general jurisdiction. This Court finds Goodyear's commercial activities in Pennsylvania to be a continuous and systematic part of its general business and is "at home" in the Commonwealth inuring to the benefits of its marketplace, citizen-consumers, and the protections of its laws and commerce-related regulations.

B. Specific Jurisdiction

To challenge this Court's prior Orders, Goodyear in its Second Motion for Reconsideration [ECF 141] further asserts "the facts of record do not support the exercise of specific jurisdiction." ECF 141 at 3, ¶7. As such, the Court will reconsider its Orders [ECFs 119, 131, and 134] and the Memorandum/Opinion and Order of Court of Judge Colville dated October 24, 2018 [ECF 93].[3]

As acknowledged in Mallory, at *2:

> This focus on the nature and extent of a corporate defendant's relationship with the forum State led to the recognition of two categories of personal jurisdiction: specific (case-linked) jurisdiction and general (all-purpose) jurisdiction. Ford Motor Co. v. Mont. Eighth Judicial Dist. Court, ___ U.S. ___, 141 S.Ct. 1017, 1024, 209 L.Ed.2d 225 (2021).

As held by the United States Supreme Court in Ford Motor Co. v. Mont. Eighth Judicial Dist. Court, 141 S.Ct. 1017 (2021) the due process test for specific personal jurisdiction does not depend on a strict causation-only approach[4] and a manufacturer's substantial business in forum States can support specific personal jurisdiction under due process principles. "None of our precedents has suggested that only a strict causal relationship between the defendant's in-state activity and the litigation will do . . . . [b]ut again, we have never framed the specific jurisdiction inquiry as always requiring proof of causation –i.e., proof that the plaintiff's claim came about because of the defendant's in-state conduct." Ford, 141 S.Ct. at 1026. (emphasis added).[5]

> A state may exercise personal jurisdiction over a nonresident defendant based upon the specific acts of the defendant which gave rise to the cause of action or based on the defendant's general activity within the state. When a state exercises personal jurisdiction over a non-resident defendant in a suit arising out of or related to the defendant's contacts with the forum, the state is exercising specific jurisdiction.

Kubik v. Letteri, 614 A.2d 1110, 1113 (Pa. 1992) (citing Helicopteros Nacionales de Colombia v. Hall, 466 U.S. 408, 414 n. 8, 104 S.Ct. 1868, 80 L.Ed.2d 404 (1984)).

Section 5322(a) of the Pennsylvania Long–Arm Statute enumerates certain types of contact with Pennsylvania deemed sufficient to warrant the exercise of specific jurisdiction over foreign defendants. See 42 Pa.C.S.A. § 5322. (Bases of personal jurisdiction over persons outside this Commonwealth). Section 5322(b)[6] further provides that "specific jurisdiction may be asserted over non-resident defendants 'to the fullest extent allowed under the Constitution of the United States and may be based on the most minimum contacts with this Commonwealth allowed under the Constitution of the United States.'" Schiavone v. Aveta, 41 A.3d 861, 866 (Pa. Super. 2012) citing Kubik v. Letteri, 614 A.2d 1110, 1113 (Pa. 1992).

"Thus, there are two requirements necessary for Pennsylvania courts to exercise specific jurisdiction over a non-resident defendant: first, jurisdiction must be authorized by the Pennsylvania Long–Arm Statute; and second, the exercise of jurisdiction must comport with constitutional principles of due process." Schiavone v. Aveta, 41 A.3d 861, 866 (Pa. Super. 2012)(citations omitted).

In conjunction with the guidance provided by the United States Supreme Court in Ford, Plaintiff has again proffered jurisdictional facts in response to Goodyear's Second Motion for Reconsideration. See ECF 144 at 8-9, ¶20. "[W]hen deciding a motion to dismiss for lack of personal jurisdiction[,] the court must consider the evidence in the light most favorable to the non-moving party." Sulkava v. Glaston Finland OY, 54 A.3d 884, 889 (Pa. Super. 2012) citing Schiavone v. Aveta, 41 A.3d 861, 865 (Pa. Super. 2012). Reconsideration of these proffered jurisdictional facts in light of Ford and Mallory will also be examined in the context of the cases submitted by Goodyear, namely Wallace v. Yamaha Motors Corp., 2022 WL 61430 (U.S. Dist. Ct. S.C. 2022) and Martins v. Bridgestone, 266 A.3d 753 (R.I. 2022). See Goodyear Reply, ECF 146 at 12-14.

This Court finds that the Rhode Island case of Martins v. Bridgestone has little precedential value or import to this Pennsylvania court. The Rhode Island Supreme Court was "satisfied that there are insufficient indicia in the record to support plaintiff's assertion that her claims arise out of or relate to Bridgestone defendants' contacts with Rhode Island." Id. at 761. (emphasis added). The Rhode Island Court also denied the plaintiff's motion to conduct jurisdictional fact discovery, rationalizing that the Rhode Island Court "lacked personal jurisdiction over the Bridgestone defendants because the injury did not occur in Rhode Island." Id. at 762. In effect, the Rhode Island Court deferred assessing Bridgestone's minimum contacts in favor of a causation-type analysis based on a strict causal relationship founded on the location of the accident. This Court finds that such circular reasoning may be acceptable to Rhode Island in application of its long-arm statute but this Court finds the Rhode Island Supreme Court's rationale unpersuasive and inherently contradictory – finding no minimum contacts and precluding jurisdictional discovery. Moreover, this Court will not evaluate Rhode Island's long-arm statute, nor its off-record judicial assessment

of the lack of minimum contacts.

Suffice it to say, Pennsylvania has a strong interest in protecting its citizens from persons who purposefully avail themselves of this Commonwealth's marketplace notwithstanding the sole factor related to the (in)fortuitous happenstance of the accident location – particularly with products whose inherent function can be reasonably foreseen to be placed in interstate commerce. Under the stream of commerce theory, a state may exercise personal jurisdiction over a manufacturer or distributor who has not entered the forum if the manufacturer or distributor "seek[s] to serve" the state's market. J. McIntyre Mach., Ltd. v. Nicastro, 564 U.S. 873, 881–82 (2011) (quoting World-Wide Volkswagen, 444 U.S. at 295) ("[A] defendant's placing goods into the stream of commerce 'with the expectation that they will be purchased by consumers in the forum State' may indicate purposeful availment." (quoting World-Wide Volkswagen, 444 U.S. at 298)). In the instant matter, Goodyear has "entered the forum" and does seek to serve Pennsylvania's market. See also, e.g., Callender v. Goodyear Tire, infra. (Goodyear serving Allegheny County municipal agency's bus tire market for public transportation).

Goodyear also relies upon Wallace v. Yamaha Motors Corp., 2022 WL 61430 (4th Cir. 2022) for the proposition that "[t]he [plaintiff's] residence does not dictate whether . . . . courts can properly exercise personal jurisdiction over Yamaha; rather, 'the relationship must arise out of contacts that the 'defendant himself' creates with the forum State.'" Id. at *4 (citing Walden, 471 U.S. at 284)[7]. See Goodyear Reply, ECF 146 at 13-14.

The holding in Wallace has been distinguished by Dodd v. Textron, Inc., 2022 WL 392442 (U.S. Dist. W.D. Wash. 2022). In Dodd, plaintiffs argued that the defendants were subject to personal jurisdiction because they regularly conducted business in the state, were registered in the state, and advertised there. The United States District Court stated:

> While the place of injury is undoubtedly relevant to the specific jurisdiction analysis, it is not always the only forum that can exercise personal jurisdiction over a defendant in a particular suit. Specific jurisdiction is premised on "two sets of values—treating defendants fairly and protecting interstate federalism." Ford Motor Co., 141 S. Ct. at 1025 (internal quotation omitted). Subjecting TSV to personal jurisdiction in a state where they market and sell the exact product at issue here is not unfair. TSV had "fair warning" that it may be subject to suit in the state of Washington for its activities here. See id. Similarly, this Court exercising personal jurisdiction over TSV raises no issue of interstate federalism. Washington is the state with the strongest nexus to TSV, the Dodds, and the Dodds' injuries.
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> Even considering the place of injury and the Fourth Circuit's holding in Wallace, this case is more in line with Ford than Bristol-Myers Squibb. The Dodds are Washington residents, they purchased the [off-road vehicle] based on TSV's advertising of the exact same product in Washington, they test drove the product here, and they use and store the [off-road vehicle] in Washington; they just happened to suffer injuries while on a trip out-of-state. See Dkt. 11. Ford makes clear that the fact that the [off-road vehicle] was designed and manufactured elsewhere is not dispositive.

Dodd at *4. (emphasis added). This Court finds the reasoning employed in Dodd to be persuasive. Plaintiff Casey Joseph similarly just happened to suffer injuries while on a trip out-of-state. Akin to the analysis of Dodd, this Court finds the instant matter more in line with Ford than Bristol-Myers Squibb. "Courts must resolve the question of personal jurisdiction based on the circumstances of each particular case." Gaboury v. Gaboury, 988 A.2d 672, 675 (Pa. Super. 2009)(citing Burger King Corp. v. Rudzewicz, 471 U.S. 462, 105 S.Ct. 2174, 85 L.Ed.2d 528 (1985)).

Ford ascribes little weight to where the product was purchased. In addition to Goodyear's contacts with Pennsylvania herein identified, the Goodyear commercial tire mounted on the commercial truck was maintained by Pennsylvania companies and the product was used in regional interstate commerce by a Pennsylvania company. The commercial roundtrip was to begin and end in Pennsylvania. The truck was registered in Pennsylvania and subject to Pennsylvania regulations. The accident occurred just across the West Virginia border. There is no allegation that West Virginia or Interstate 79 in West Virginia "caused" the accident or the injury. Simply put, commercial tires can – by their very nature – be reasonably expected to travel on regional interstate highways and byways.

"[T]he relationship between the plaintiff's claims and the defendant's contacts does not need to be causal. Rather it is sufficient for the plaintiff's claims to simply 'relate to' the defendant's contacts with the forum." Ford, 141 S.Ct. at 1026. Herein, the Plaintiffs' claims relate to Defendants' contacts with Pennsylvania in regard to the sale, marketing, repair, and/or advertising of commercial truck tires. Goodyear purposefully avails itself of the Pennsylvania commercial truck tire market.

The above factual analysis is in stark contrast to Goodyear's competing jurisdictional rationale:

> GOODYEAR'S COUNSEL: Your Honor, I would like to address Plaintiff's Counsel's issue related to the stream of commerce. We heard a lot about the stream of commerce. We heard a lot what Goodyear does in Pennsylvania. But the fact of the matter is, Judge Colville found that while Goodyear may have been those minimum contacts, it's missing that huge piece. So, right? We need three pieces to find specific jurisdiction. We need the stream of commerce. Purposeful availment. Whatever you want to call that. Minimum contact bucket. But we also need relatedness. Plaintiff claims it must arise out of a relatedness to Defendant's conduct. And that's what we don't have here. And that's what Plaintiffs don't address. And that's what Judge Colville found. There was no specific jurisdiction in this case.
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> THE COURT: Can I ask you this question?
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> GOODYEAR'S COUNSEL: Sure.

> THE COURT: If they filed this case in Morgantown [West Virginia], would you even be arguing?
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> GOODYEAR'S COUNSEL : Your Honor, I am here to tell you that we would not be here, and we would not be having this conversation. Because that's where the place of the injury occurred. And, obviously, Your Honor has seen that that's where relatedness -- that's that criteria for relatedness would certainly be met in that case.

Motions Hearing Transcript dated January 27, 2021 at p. 64, I. 1 to p. 65, I. 7.

It is no stretch of common sense that Pennsylvania has a greater jurisdictional basis supported by Goodyear's established minimum contacts with Pennsylvania than the incidental occurrence of a commercial tire blow-out four miles into West Virginia. Simply stated, this case relates to a Goodyear commercial retread tire which was placed into the stream of commerce in a foreseeable regional area: the neighboring states of Pennsylvania, Ohio, and West Virginia.

Due process "is satisfied when the defendant has (1) purposefully established minimum contacts with the forum state, (2) such that the maintenance of the suit does not offend traditional notions of fair play and substantial justice." Schiavone v. Aveta, 41 A.3d 861, 869 (Pa. Super. 2012).

> A defendant purposefully establishes minimum contacts where its contacts with the forum state [are] such that the defendant could reasonably anticipate being called to defend itself in the forum...Random, fortuitous, and attenuated contacts cannot reasonably notify a party that it may be called to defend itself in a foreign forum and, thus, cannot support the exercise of personal jurisdiction. That is, the defendant must have purposefully directed its activities to the forum and conducted itself in a manner indicating that it has availed itself of the forum's privileges and benefits such that it should be subjected to the forum state's laws and regulations.

Id. (citing Aventis Pasteur, Inc. v. Alden Surgical Co., Inc., 848 A.2d 996, 1000 (Pa. Super. 2004). See also Hanson v. Denckla, 357 U.S. 235 (1958) (defendant should reasonably anticipate out-of-state litigation where it "purposefully avails itself of the privileges of conducting activities within the forum State.").

As cited herein, Goodyear is no stranger to Pennsylvania. As a legal entity, employer, and vendor of commercial products (and specifically commercial truck retread tires) marketed, directed, and sold to Pennsylvanians – Goodyear is and has historically been afforded the protections of the Commonwealth's laws and regulations. This Court finds no reasonable basis offered by Goodyear to suggest that it does a minimal amount of business in Pennsylvania or that defending this lawsuit in the Commonwealth would be overly burdensome on it.[8] To the contrary, the record establishes that historically Goodyear is a well-established interstate enterprise legally represented in Pennsylvania to protect its commercial interests in Pennsylvania. In parallel fashion to the reasoning set forth in Ford, this Court finds that a commercial tiremaker regularly marketing tires in Pennsylvania has clear notice that it will be subject to jurisdiction when the product malfunctions there[9] (regardless where it was first sold). See Ford, 141 S.Ct. at 1030. In conducting so much business in Pennsylvania, Goodyear "enjoys the benefits and protection of [Pennsylvania's] laws – the enforcement of contracts, the defense of property, the resulting formation of effective markets." See Id. at 1029-1030 citing International Shoe v. Washington, 326 U.S. 310, 319 (1945).

"Once it has been decided that a defendant purposefully established minimum contacts within the forum State, these contacts may be considered in light of other factors to determine whether the assertion of personal jurisdiction would comport with 'fair play and substantial justice.'" Burger King Corp. v. Rudzewicz, 471 U.S. 462, 476 (1985). This analysis is conducted on a case-by-case basis, see J.C. Snavely & Sons, Inc. v. Springland Assoc., 600 A.2d 972, 974 (Pa. Super. 1991), based on appropriate factors such as:

> (1) the burden on the defendant, (2) the forum state's interest in adjudicating the dispute, (3) the plaintiff's interest in obtaining convenient and effective relief, (4) the interstate judicial system's interest in obtaining the most efficient resolution of controversies and (5) the shared interest of the several states in furthering fundamental substantive social policies.

Schiavone v. Aveta, 41 A.3d 861, 869 (Pa. Super. 2012) citing Kubik v. Letteri, 532 614 A.2d 1110, 1114 (Pa. 1992) (citing Burger King, supra at 478, 105 S.Ct. 2174).

The exercise of jurisdiction by Pennsylvania in the instant action comports with notions of fair play and substantial justice. Applying the factors enumerated by the United States Supreme Court in World–Wide Volkswagen and adopted by our Supreme Court in Kubik; jurisdiction weighs in favor of Pennsylvania.

The first factor weighs in favor of jurisdiction in Pennsylvania because the burden on Goodyear in litigating in Pennsylvania is small -- if non-existent. Goodyear regularly operates and maintains a headquarter in the neighboring state of Ohio (Summit County); has conceded that the neighboring state of West Virginia has minimum contacts based on the sole (in)fortuitous location of the accident (Monongalia County); that Pennsylvania (including Allegheny and Washington County) is geographically closer to Summit County, Ohio than Monongalia County, West Virginia;[10] and Goodyear has a considerable history of litigation in the Commonwealth being represented by competent local counsel. As such, Goodyear can/could reasonably anticipate being called to Court in Pennsylvania as related to a Goodyear commercial truck tire used in regional interstate commerce based upon the factors addressed herein.

The second and third factors also support jurisdiction in Pennsylvania as Pennsylvania has an interest in protecting its citizens from tortious conduct of third parties. The bulk of evidence related to the maintenance and/or repair of the commercial tire involves Pennsylvania companies and witnesses; and while the accident did occur four miles into West

Virginia, the two identified eyewitnesses are Pennsylvania residents, and Plaintiff Casey Joseph's medical care occurred in the Commonwealth. Moreover, Pennsylvania is the most convenient forum for Plaintiffs, as Pennsylvania residents, to obtain relief.

Finally, the fourth and fifth factors weigh in favor of jurisdiction in Pennsylvania because litigating the case in the forum based upon the factors outlined above would promote an efficient resolution of the controversies and the shared interests of the several regional neighboring states involved, namely Pennsylvania, West Virginia, and Ohio. Neither West Virginia nor Ohio have more comparative factors to overcome the convenience and efficiency of this Pennsylvania forum, and Goodyear asserted cross-claims against the Pennsylvania companies. See Goodyear Answer, New Matter, and Cross-Claims to Plaintiffs' Amended Complaint, ECF 34 at 20, ¶¶424-426.

This Court may properly exercise personal jurisdiction over The Goodyear Tire and Rubber Company in this suit as it comports with the constitutional principles of due process as set forth herein as Goodyear has (1) purposefully established minimum contacts with Pennsylvania, and (2) the maintenance of the suit does not offend traditional notions of fair play and substantial justice.

WHEREAS, the following ORDER of this same date is entered and incorporated herein.

BY THE COURT:
/s/Ignelzi, J.

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[1] See two photos of retread tire carcass averred to have been recovered from the crash scene. Affidavit of Jaime D. Jackson dated 4/26/2018. Photos attached therein as Exhibit O.

[2] Incorporation under or qualification as a foreign corporation under the laws of this Commonwealth. 42 P.S. § 5301(a)(2)(i). Notwithstanding Goodyear's registration in Pennsylvania, this Court did not apply section 5301(a)(2)(i) as the sole basis to establish jurisdiction. Cf. 42 P.S. § 5301(a)(2)(iii).

[3] This Court acknowledges Goodyear's assertion of the "law of the case doctrine." See ECF 141 at 11-12, ¶¶44-45. However, this Court cannot disregard the application of Ford upon reconsideration as a well-established exception to the law-of-the-case doctrine. The United States Supreme Court's March 25, 2021 Opinion in Ford presents an intervening change in the controlling law. See Goodyear ECF 141 at 12, n4 (citing Commonwealth v. Starr, 664 A.2d 1326, 1332 (Pa. 1995)) and Plaintiffs' ECF 144 at 11-13, ¶¶24-26 (citing Ashbaugh v. Ashbaugh, 627 A.2d 1210, 1216 (Pa. Super. 1993). In the first instance, this Court does not and did not find Judge Colville's October 24, 2018 Opinion and Order [ECF 93] and a plain reading of the Opinion at page 9 including, inter alia, "I am inclined . . . ." and "I will defer a ruling on jurisdiction . . . ." to be a final ruling on jurisdiction in this case. Moreover, Judge Colville was "cognizant of the Superior Court's recent decision in Webb-Benjamin, LLC v. International Rug Group LLC[.]" Op. at 9. See also ECF 144 at 11, ¶24. In addition, on January 4, 2019, Judge Colville stayed this case pending the appeal in Murray v. Am. LaFrance, LLC, (Pa. Super 2018). See Order at ECF 100. As asserted by Goodyear, the Pennsylvania Supreme Court subsequently "gutted Webb-Benjamin." See Goodyear ECF 141 at 8, ¶31. As such, there was no finality to Judge Colville's Opinion and Order related to jurisdiction – at best it was dicta, as it deferred a ruling on jurisdiction pending other future events and developing appellate case law.

[4] This Court notes Goodyear's assertion that "Plaintiffs fail to demonstrate that the claim arises from an injury caused in the forum state . . . . and the accident allegedly caused by the Tire at Issue occurred in West Virginia. ECF 146 at 12. (italics added, bold in original). The State of West Virginia Uniform Traffic Crash Report, Record No. C15-0011745, at page 1 of 12 identifies the crash location on Route 079 at Milepost 156.00. See ECF 144, Exhibit 1. The subject vehicle was traveling Southbound. Id. at 2. The posted speed limit at the location was 70 mph. Id. at 4. The Court takes judicial notice that a vehicle traveling southbound on Interstate 79 which originated its travel from Pennsylvania and crashed on Interstate 79 at Milepost 156 is four miles away from the Pennsylvania border.

See https://transportation.wv.gov/highways/interstate_interchanges/Pages/InterstateInterchanges.aspx.

As a general logistic proposition, Morgantown, West Virginia is approximately 46 miles driving distance from Washington, Pennsylvania.

Washington, Washington County, Pennsylvania to Morgantown, Monongalia County, West Virginia:
Straight line distance: 41 miles
Driving distance: 46 miles

See https://www.mapdevelopers.com/distance_from_to.php. See also n.10, infra.

As a mathematical formulation, where the duration (time) of a trip can be calculated knowing the distance and average speed (time = distance / velocity); the Court takes judicial notice that a vehicle traveling the average minimum speed of 45 mph would have traveled the four mile distance in West Virginia for approximately five minutes. 4 miles / 45 mph = 0.089 of an hour. The fraction 0.09 of an hour approximates five minutes of travel. See https://www.bls.gov/tus/Conversion_chart.pdf. A standard online time calculator with the same input parameters concludes the travel time as five minutes and twenty seconds (00:05:20). See https://www.timecalculator.net/speed-distance-time-calculator. Common sense acknowledges that 60 mph translates to one mile a minute.

To be clear, this Court is not establishing a mathematical "time-related" formula for minimum contacts. The above "time-related" calculation provides relative perspective to Goodyear's West Virginia causation theory for purposes of identifying the factors related to minimum contacts and competing theories of jurisdiction. The subject vehicle was traveling for a longer duration in Pennsylvania than in West Virginia. See Motions Hearing Transcript dated January 27, 2021 at p. 64, l. 1 to p. 65, l. 7, infra.

[5] Goodyear herein asserts that "The Plaintiffs failed to meet their burden that Goodyear is subject to specific [sic] because '[t]he Plaintiffs' specific claims regarding the specific retread in this case … have no connection to Goodyear's contacts with Pennsylvania because there is no evidence that the specific retread in this case was manufactured, sold, or installed in Pennsylvania.' (citing J. Colville, October 24, 2018 Memorandum Opinion and Order, ECF 93 at 5. See Goodyear Reply, ECF 146 at 6-7. J. Colville's 2018 analysis is contrary to the holding and guidance provided by the United States Supreme Court in Ford (2021), infra. As noted by Plaintiffs herein, "an intervening change in the controlling law" is an exception to the law-of-the-case doctrine. Pltfs. Brief Opp., ECF 144 at 3 citing S.G. v. R.G., 233 A.3d 903, 907 (Pa. Super. 2020). Moreover, this Court notes that Judge Colville did find Goodyear has adequate minimum contacts with Pennsylvania, but improperly analogized the averred jurisdictional facts of the instant matter to Walden v. Fiore, 561 U.S. 277, 291 (2014). Cf. Ford at 1031, wherein defendant "Ford falls back on Walden as its last resort" and Justice Kagan for the majority contrasted the facts of Walden with Ford stating with pun-intended, "Ford [defendant] has a veritable truckload of contacts with Montana and Minnesota[.] As put by Justice Alito in concurrence:

> That standard [of minimum contacts] is easily met here. Ford has long had a heavy presence in Minnesota and Montana. It spends billions on national advertising. It has many franchises in both States. Ford dealers in Minnesota and Montana sell and service Ford vehicles, and Ford ships replacement parts to both States. In entertaining these suits, Minnesota and Montana courts have not reached out and grabbed suits in which they "have little legitimate interest." Bristol-Myers Squibb Co. v. Superior Court of Cal., San Francisco Cty., 582 U. S. ——, —— (2017) (slip op., at 6). Their residents, while riding in vehicles purchased within their borders, were killed or injured in accidents on their roads. Can anyone seriously argue that requiring Ford to litigate these cases in Minnesota and Montana would be fundamentally unfair?

Ford, 141 S.Ct. at 1032 (J. Alito concurrence).

Similarly, this Court herein examines the contacts Goodyear has with Pennsylvania.

[6] Exercise of full constitutional power over nonresidents.--In addition to the provisions of subsection (a) the jurisdiction of the tribunals of this Commonwealth shall extend to all persons who are not within the scope of section 5301 (relating to persons) to the fullest extent allowed under the Constitution of the United States and may be based on the most minimum contact with this Commonwealth allowed under the Constitution of the United States. 42 P.S. § 5322(b).

[7] Specific jurisdiction permits a district court to exercise jurisdiction over a nonresident defendant for conduct that "create[s] a substantial connection with the forum State." Walden v. Fiore, 571 U.S. 277, 284 (2014). However, this Court finds the averred jurisdictional facts of Walden to be distinct and thread-bare in comparison to the jurisdictional facts herein. The defendant in Walden had never formed any contact with the forum State. In contrast, Goodyear herein has a host of forum connections. See also Ford, 141 S.Ct. at 1031-1032 (emphasis added):

> But Walden has precious little to do with the cases before us. In Walden, only the plaintiffs had any contacts with the State of Nevada; the defendant-officer had never taken any act to "form[ ] a contact" of his own. 571 U.S., at 290, 134 S.Ct. 1115. The officer had "never traveled to, conducted activities within, contacted anyone in, or sent anything or anyone to Nevada." Id., at 289, 134 S.Ct. 1115. So to use the language of our doctrinal test: He had not "purposefully avail[ed himself] of the privilege of conducting activities" in the forum State. Hanson, 357 U.S., at 253, 78 S.Ct. 1228. Because that was true, the Court had no occasion to address the necessary connection between a defendant's in-state activity and the plaintiff 's claims. But here, Ford has a veritable truckload of contacts with Montana and Minnesota, as it admits. See supra, at 1027 – 1028. The only issue is whether those contacts are related enough to the plaintiffs' suits. As to that issue, so what if (as Walden held) the place of a plaintiff 's injury and residence cannot create a defendant's contact with the forum State? Those places still may be relevant in assessing the link between the defendant's forum contacts and the plaintiff's suit—including its assertions of who was injured where. And indeed, that relevance is a key part of Bristol-Myers' reasoning. See 582 U. S., at ——, 137 S.Ct., at 1782 (finding a lack of "connection" in part because the "plaintiffs are not California residents and do not claim to have suffered harm in that State"). One of Ford's own favorite cases thus refutes its appeal to the other.
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> * * *

In factual distinction from Bristol-Myers Squibb, but in conjunction with a key part of the Supreme Court's analysis, Plaintiffs herein (the Josephs) are Pennsylvania residents.

[8] In extreme contrast, Goodyear's purposeful availment of the Pennsylvania market does not by any stretch of reason pertain to an "isolated or sporadic transaction" as referenced in Ford, regarding the hypothetical "retired guy in a small town in Maine" who "carves decoys" and "uses a site on the internet to sell them." Ford, 141 S.Ct. at 1028, n4. As stated by Justice Kagan for the majority, "[t]he differences between that case and the ones before us virtually list themselves. (Just consider all our descriptions of Ford's activities outside its home bases.)." Id.

[9] This Court will not split metaphysical causation hairs on the head of a jurisdictional pin as related to the "malfunction" occurring in Pennsylvania [here] or four miles into West Virginia [there]. By logical inference, if Goodyear concedes it has minimum contacts with West Virginia because of the location of the accident, then it must concede that Goodyear has equally significant -- if not more significant contacts with this Commonwealth based upon the factors set forth herein. See 1/27/2021 Mtn. Hrg. Tr. 64-65, infra.

[10] This Court takes judicial notice of the following approximate distances:

Akron, Summit County, Ohio to Pittsburgh, Allegheny County, Pennsylvania:
Straight line distance: 68 miles
Driving distance: 107 miles

Akron, Summit County, Ohio to Washington, Washington County, Pennsylvania:
Straight line distance: 92 miles
Driving distance: 132 miles

Akron, Summit County, Ohio to Morgantown, Monongalia County, West Virginia:
Straight line distance: 130 miles
Driving distance: 178 miles

See https://www.mapdevelopers.com/distance_from_to.php