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IN THE SUPREME COURT OF THE STATE OF DELAWARE

Wendolyn Tumlinson, Jake Albert Tumlinson, Jillveh Ontiveros and Paris Ontiveros, by her natural mother and next friend Jillveh Ontiveros, Plaintiffs Below, Appellants, v. Advanced Micro Devices, Inc., Defendant Below, Appellee.	)	No.: 672,2012D PUBLIC VERSION FILED: 4/12/13

PLAINTIFFS BELOW-APPELLANTS' REPLY BRIEF

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INTRODUCTION

AMD's opposition is noteworthy for what it fails to say. It does not dispute the finding that Linda Frazier M.D. M.P.H. ("Frazier") is qualified. It does not deny that her misconduct testimony was stricken without analysis, or that such a ruling is an abuse of discretion.

Nor does AMD deny that Delaware law governed the hearing below. Indeed, AMD does not seriously challenge Plaintiffs' showing that they satisfied *Daubert*. AMD's contrary "argument" (pp. 19-20) spans a page, ***cites not a single Delaware case***, and quickly pivots to Texas law.

AMD's failure to engage with Delaware law is not accidental. Dr. Frazier's credentials and testimony clearly satisfy *Daubert*. Her methods are accepted in science and in law. The intellectual rigor of her analysis is equal to that displayed in her dozens of publications and decades of academic work. While epidemiology is not required to opine on causation in Delaware, Dr. Frazier cited many such studies. Their findings on the reproductive hazards AMD's chemicals pose are consistent with myriad government, industry, and toxicology studies.

Undeterred, AMD simply ignores this Court's holdings in favor of its own reading of Texas law. That attempt fails for several independent reasons. First, AMD does not demonstrate (and appears to deny) that a conflict of law exists which could even trigger a choice of law analysis. Nor has AMD shown that substantive Texas law should control this case. AMD is a California-based corporation, incorporated in Delaware. Uncontroverted evidence showed that AMD's grave misconduct occurred in California, and caused similar harm worldwide.

Second, even if substantive Texas law applied, Delaware law

controls *Daubert* hearings. AMD's effort to substitute foreign law is transparent and misguided. As explained in Plaintiffs' Opening Brief, it rests on the false claim that evidence is "irrelevant" unless it is an epidemiological study identical to the plaintiff's case in every conceivable respect. Thus, AMD suggests that no evidence would be "relevant" to the Tumlinson case other than a study exposing pregnant women to precisely the same chemicals, in precisely the same amounts, with precisely as many spills, and precisely the same ventilation, on precisely the same gestational days, producing precisely the same birth defects Jake has, in twice the number present in an identical control population. Plaintiffs addressed the scientific invalidity of that claim in their Opening Brief and Joint Expert Affidavit [A470-739]. Legally, AMD also misstates what it means to be relevant. Thus, federal diversity courts have rejected AMD's approach, including in the very case it emphasizes on appeal. This Court should do the same.

AMD's characterization of Texas law is also incorrect. Yet, even if that were not so, Dr. Frazier's qualified opinions, unchallenged by any competent expert, satisfy AMD's extreme reading of Texas law, including referencing epidemiological studies showing a doubling of the risk, with exposures comparable to those at AMD. In claiming otherwise, AMD cannot escape Plaintiffs' showing that the Superior Court repeatedly overlooked or misstated key evidence, and substituted its opinions for those of qualified and credible experts. The unfortunate effect was to deny seriously injured children their right to present credible, compelling and well-supported claims to a jury. The law of this State and the interests of justice mandate reversal.

ARGUMENT

I. AS AMD ESSENTIALLY CONCEDES, EXCLUSION OF DR. FRAZIER'S TESTIMONY ABOUT ITS MISCONDUCT WITHOUT ANALYSIS WAS AN ABUSE OF DISCRETION

Dr. Frazier opined on misconduct as well as causation. She demonstrated that AMD knew or should have known of the reproductive hazards its process chemicals posed, and explained how AMD failed to adequately protect its workers and their offspring therefrom [A748-774; A788-811]. As detailed *infra*, extensive evidence supported her opinions, including government warnings, chemical supplier warnings, scholarly literature, and AMD documents [Id.; A816-866; A1095-1154].

Despite that showing, AMD's motion to strike Dr. Frazier was granted in its entirety. AMD admits that no findings were made before Dr. Frazier's testimony on misconduct was excluded. AMD also cannot dispute that this violates the requirement that jurists supply reasons for their rulings. *Holden v. State*, 23 A.3d 843, 846-847 & n.8-10 (Del. 2011). Nor does AMD dispute that Dr. Frazier's explanation of how it mistreated its workers was accurate.

Yet, rather than concede error, AMD advances a cursory argument that this testimony was "neither admissible nor material" to the action (Ans.: 33).[1] Untrue. Whether and how AMD breached a duty is highly material to Plaintiffs' negligence claims. Moreover, Dr. Frazier's explanation of why supposed protections in place at AMD were inadequate bears on key issues, including the amount of dermal absorption of hazardous chemicals the parents experienced [*E.g.*, A748; A793-795]. Nor can AMD deny the admissibility of Dr. Frazier's

[1] References to AMD's Answering Brief on appeal are designated "Ans." References to Plaintiffs' Opening Brief are designated "Op.".

misconduct opinions, since it challenged neither her qualifications, nor the methods she employed in reaching them.

In essence, AMD is asking this Court to overlook an abuse of discretion by characterizing it as harmless error. That application lacks merit. This Court has clearly stated that "it is part of a trial judge's adjudicative responsibilities to state the reasons for his action." *Holden*, 23 A.3d at 846-847, n.8 (citation omitted). Moreover, in this case, it was essential for the Court to address Dr. Frazier's testimony on AMD's misconduct, both because it bore on the harmful exposures Plaintiffs experienced, and because Dr. Frazier was not the only causation expert in this action.[2] Furthermore, the Superior Court appreciated that an appeal would follow its *Daubert* ruling. However, its ruling deprived the parties and this Court of the benefit of its reasoning concerning a major portion of Dr. Frazier's testimony.

Finally, the failure to make findings concerning a significant component of Dr. Frazier's reports is noteworthy because it is not an aberration from an otherwise thorough decision. Rather, this omission is indicative of the opinion as a whole, which repeatedly overlooks or misapprehends the record evidence and pertinent law as demonstrated *infra* at Points II-IV, and in Plaintiffs' Opening Brief.

In sum, Dr. Frazier's qualified and well-founded testimony as to AMD's misconduct was improperly stricken without analysis.

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[2] The *Daubert* ruling did not address or exclude Plaintiffs' remaining experts, including James Stewart, Ph.D., Cynthia Bearer M.D. Ph.D., Shira Kramer Ph.D., M.H.S., and Robert Harrison, M.D. The stipulation to dismiss was not reached until after Plaintiffs' petition to file an interlocutory appeal from the ruling excluding Dr. Frazier was denied. It expressly preserved all appellate rights [A1686].

II. AMD ADMITS THAT DELAWARE LAW GOVERNED THE *DAUBERT* PROCEEDINGS, AND MAKES NO SERIOUS ATTEMPT TO CHALLENGE PLAINTIFFS' SHOWING THAT DR. FRAZIER'S TESTIMONY SATISFIES DELAWARE LAW

AMD admits, as it must, that "the admissibility of expert opinion is determined by the Delaware Rules of Evidence" (Ans.: 12). Plaintiffs' Opening Brief explained in detail why Dr. Frazier's testimony satisfied Delaware law, and thus was wrongly excluded (Op.: 3-15; 19-26). On appeal, AMD advances a point entitled, "Plaintiff's Proof Does not Satisfy *Havner* or *Daubert*" (Ans.: 19). Thus, AMD initially appears to be asserting that Plaintiffs' expert proofs fail under Delaware law -- a claim the Superior Court never accepted.[3]

AMD's point heading is misleading. Its strategy on appeal, as below, is to pay lip service to Delaware law, while asking this Court to adopt and impose AMD's extreme reading of Texas law (Ans.: 12-32). As demonstrated *infra* at Points III-IV, that application rests on a mischaracterization of the law and the record, and should be denied.

Nonetheless, it is instructive to examine the "*Daubert*" point, because doing so reveals the illogical and self-contradictory nature of AMD's position. As noted above, AMD's "*Daubert*" argument is one page, followed by a lengthy discussion of Texas law (Ans.: 19-20). Significantly, that page includes no Delaware authorities. Instead, it cites *Milward v. Acuity Specialty Prods. Group, Inc.*, 639 F.3d 11 (1st Cir. 2011), without discussion, and promptly returns to Texas law.

Milward is a First Circuit *Daubert* opinion Plaintiffs cited

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[3] *See* 2012 Opinion, p.5 (writing that "the threshold for admitting expert testimony is significantly higher in Texas than it is in Delaware"); *id.* at p.6 (adding that "the same expert testimony might be accepted as reliable in Delaware, and found unreliable in Texas").

because it reaffirms the soundness of Dr. Frazier's weight-of-the-evidence methodology, and debunks AMD's critique thereof. The First Circuit explained why an "atomistic" approach of considering each piece of scientific evidence in isolation, and dismissing it if it fails to establish causation standing alone, is improper, and held that a District Court's contrary ruling was an abuse of discretion. *Id.* at 17-19, 22-23, 26. As *Milward* explained, the District Court "erred in reasoning that because no one line of evidence supported a reliable inference of causation, an inference of causation based on the totality of the evidence was unreliable." *Id.* at 23. Not only was certiorari denied, but *Milward* is consistent with *Daubert* case law nationwide.[4] Yet, despite referencing Plaintiffs' discussion of this case, AMD makes no attempt to distinguish *Milward* (Ans.: 19).

The remainder of AMD's "*Daubert*" analysis consists of two *Texas* cases followed by a footnote citing a few Vermont and federal court decisions (Ans.: 19-20, n.11). AMD cites them to support its view that Texas law "is not out of step" with Delaware's *Daubert* jurisprudence (Ans.: 20). In other words, AMD is arguing that to determine whether Dr. Frazier's testimony satisfies *Delaware law*, this Court should look to *Texas law*, because they are the same (*Id.* at 15-16, 20).

That argument does not withstand scrutiny. First, asserting that Delaware and Texas law are in harmony is completely at odds with AMD's

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[4] *See, e.g., Kuhn v. Wyeth, Inc.*, 686 F.3d 618, 632 (8th Cir. 2012)(while studies were "not perfect, they provide[d] useful information that, along with [another] study, provide[d] an adequate foundation" for expert opinion); *In re Chantix (Varenicline) Prods. Liab. Litig.*, 889 F. Supp. 2d 1272, *62-63 (N.D. Ala. 2012)(finding weight-of-the-evidence analysis of Plaintiffs' expert, Shira Kramer, Ph.D. "persuasive").

invocation of foreign law, as explained *infra* at Point III. Second, there is no reason or need to look to foreign decisions to determine whether Dr. Frazier's testimony satisfies Delaware law.

While one might suspect otherwise from AMD's brief, this State has its own *Daubert* jurisprudence, which expressly rejects the rigid and irrational litmus test AMD seeks to impose. AMD would require experts to cite epidemiological studies mirroring the case at hand in every conceivable respect to opine on causation. That ignores this Court's clear language that "***there is no a priori requirement that an expert opinion be based on epidemiology in order to be admissible.***" *GMC v. Grenier*, 981 A.2d 531, 539 (Del. 2009) (emphasis added).[5] It follows that experts need not cite two epidemiological studies to testify, let alone two studies proving causation without reference to any other evidence. Instead, an expert can draw an opinion based upon a body of scientific evidence, as the *Grenier* experts did by evaluating the size, shape, and morphology of chrysotile fibers, coupled with reports showing comparable fibers lodged in the lung tissue of individuals who had worked with friction products. *Id.* at 538. *See Long v. Weider Nutrition Group, Inc.*, 2004 Del. Super. LEXIS 204, *18, n.20 (Del. Super. Ct. June 25, 2004)("As a matter of public policy, courts should not be hampered in the search for truth by the rigid proposition that no expert, however qualified, can reliably opine on the causal link between a toxic substance and injury without epidemiological studies conducted according to strict guidelines").

[5] *See also Milward*, 639 F.3d at 24; *Lakie v. Smith-Kline Beecham*, 965 F. Supp. 49, 56 (D.D.C. 1997) (citing cases); *Ambrosini v. Labarraque*, 101 F.3d 129, 138 (D.C. Cir. 1996).

AMD's failure to discuss Delaware law is telling. AMD avoids this Court's holding -- cited in Plaintiffs' Opening Brief -- because it recognizes that it has no objection to Dr. Frazier's qualifications, methodologies, or intellectual rigor under Delaware law.

Significantly, Plaintiffs do not cite *Grenier*, *Milward*, or *Long* to defend fanciful opinions or unreliable methods. The compelling nature of the proofs deserves emphasis. Testimony and documentary evidence established parental exposure to ten specific "causation" chemicals, notably including ethylene glycol ethers [A611-627; A748-763; A788-806; A966-1035; A1505-09]. The duration, intensity and timing of their exposures were extensively documented and quantified [A966-1035; A1063-1094] and then compared with the levels of exposures in various studies which showed adverse outcomes. The parental exposures equaled or exceeded those documented in the cited studies [Id.; A1474-1480; A1542-1544]. The offspring Plaintiffs' diagnoses were also established, and alternative explanations for their injuries carefully ruled out [A746-47; A774-77; A786-88; A811-13].

Importantly, dozens of animal studies, in species after species, confirmed that these causation chemicals cause birth defects [A487-502]. This included studies showing that exposing rats, mice and guinea pigs to even a single dose of ethylene glycol ethers produced fetal death, birth defects, and disrupted sperm development [A488-491]. Multiple studies also established a dose-response relationship between exposures to the causation chemicals and reproductive harm, such that increasing exposures resulted in increasing levels of infertility, malformations, DNA damage, and loss of testicular

function [A494]. Plaintiffs also identified studies exposing animals to the causation chemicals at AMD, producing the very birth defects Paris and Jake have, including kidney defects, anal atresia, spina bifida, and heart defects [A495-502; 1255-56; A1278]. Further, genotoxicity studies of humans, and *in vitro* comparisons of both human and animal tissue, demonstrated the common harms these chemicals inflict on humans and animals [A503-506].

Plaintiffs likewise proffered studies by officials in California and the federal government [A837-842; 1255]. They led to warnings by both levels of government that the ethylene glycol ethers at AMD created risks of birth defects in offspring of exposed workers [Id; A1095-1131]. Warnings that these chemicals could cause reproductive harm were likewise issued by their own manufacturers [A1132-1154].

Finally, Dr. Frazier and her colleagues presented many peer-reviewed epidemiological studies [*e.g.*, A244-279; A509-49]. As the Opening Brief explained, they evaluated the causation chemicals at AMD, the industry in which the parents worked, and Jake and Paris' injuries from numerous perspectives, and overwhelmingly supported causation [Id.]. Dr. Frazier evaluated evidence using each of the Bradford-Hill criteria, explaining how the studies "fit" in terms of exposure and outcome [A1381-1391]. She employed the clinical approach of differential diagnosis or etiology, which allowed her to rule out alternative explanations while considering evidence showing that chemical exposures were the cause of the Plaintiffs' injuries [A1314-

1317]. These methods are well-accepted in science and law.[6]

Faced with that showing, AMD merely takes issue with the conclusions reached, not the methods employed. As detailed at Point IV, *infra*, its arguments are laden with inaccuracies and omissions.

Moreover, AMD's complaints -- unendorsed by a single expert -- at most identify areas of possible cross-examination, rather than a basis for exclusion. While there is nothing "shaky" about Dr. Frazier's analysis, "'[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.'" *Rodriguez v. State*, 30 A.3d 764, 770 (Del. 2011)(*quoting Daubert v. Merrell Dow Pharms.*, 509 U.S. 579, 595-96 (1993)). *See also New Haverford P'ship v. Stroot*, 772 A.2d 792, 799-800 (Del. 2001).

In sum, expert witnesses are contemplated to help juries reach factual decisions. *Daubert* was designed to weed out junk science, not strike credible analysis that could assist juries with their fact-finding responsibilities. Plaintiffs proffered highly qualified and credible experts, who employ proper methods to explain the significance of a rich body of scientific literature. At the end of the day, it must be the jury that weighs and balances that evidence.[7]

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[6] *See, e.g., Milward*, 639 F.3d at 17; *Granfield v. CSX Transp., Inc.*, 597 F.3d 474, 486 (1st Cir. 2010); *Westberry v. Gislaved Gummi AB*, 178 F.3d 257, 262-66 (4th Cir. 1999).

[7] It is also noteworthy that AMD does not share the Superior Court's concern that Dr. Frazier's testimony would confuse the jury, or assert that it should be excluded because the causation chemicals sound sinister. That makes perfect sense for reasons addressed in Plaintiffs' Opening Brief (Op.: 25-26).

III. AMD HAS NOT DEMONSTRATED THAT A CONFLICT OF LAW EXISTS, LET ALONE THAT IT CAN AVOID RESPONSIBILITY FOR ITS GRAVE MISCONDUCT, OCCURRING IN CALIFORNIA AND CAUSING HARM WORLDWIDE, BY INVOKING SUBSEQUENTLY-ISSUED TEXAS CASES IN A DELAWARE COURT

AMD's entire argument rests on the application of Texas law. Yet, "the court will not engage in a choice of laws analysis unless a true conflict can be shown to exist" [A201-202 (*citing Shook & Fletcher Asbestos Settlement Trust* v. *Safety Nat'l Cas. Corp.*, 909 A.2d 125, 128 (Del. 2006); *Williams v. Stone*, 109 F.3d 890, 893 (3d Cir. 1997)); Op.: 28, n.40]. AMD made no such showing. To the contrary, it asserts that Texas and Delaware law are in harmony (Ans.: 15-16, 20).

Having failed to establish a conflict, Delaware law governs. Because AMD did not address this State's law, let alone Plaintiffs' showing that it is satisfied (Op.: 19-26), its opposition fails.

Beyond that, AMD's analysis essentially invokes the discarded *lex loci* test,[8] by ignoring evidence Plaintiffs presented. As shown, the parents worked with chemicals, including ethylene glycol ethers, posing reproductive hazards well known to the semiconductor industry [A833-842]. Chemical suppliers [A1132; A1154], the federal government [A1108-1131] and AMD's home State, California, issued warnings [A1095-1107]. California AMD executives commissioned epidemiological studies on their reproductive hazards from the University of California, along with other industry members. These scientists were able to evaluate 14 semiconductor facilities -- including AMD's -- precisely because semiconductor fabs nationwide were substantially similar [A842-844; A958-964]. Their findings of reproductive hazards were consistent with

[8] *Travelers Indem. Co. v. Lake*, 594 A.2d 38, 46 (Del. 1991).

government and supplier warnings [Id; A245-258]. Only after the Plaintiffs' births did AMD begin to phase out ethylene glycol ethers.

With that in mind, California is where AMD made key decisions affecting thousands of AMD employees and their offspring. AMD's submicron development center, located in California, made chemical process decisions which were globally implemented [A335; A338-39]. Deficient policies on hazard communication, health, engineering, and industrial hygiene were promulgated in California [A325-329; A342-345; A348; A350]. California AMD executives signed its health and safety policy statement, and inspected Texas fabs [A346-47; A349; A352]. AMD's belated decision to phase out ethylene glycol ethers also was made by executives centered in California. As its representative admitted, AMD did so because ethylene glycol ethers were associated with "negative reproductive outcomes" and "birth defects" [A338-342].

Accordingly, the misconduct producing Plaintiffs' injuries flowed from California headquarters of a Delaware corporation, not local acts of neglect. AMD advances no basis for a company, misbehaving in California and incorporated in Delaware, to escape liability under Texas law.[9] That conclusion is reinforced by the fact that AMD's argument rests on Texas cases ***written years after Paris and Jake's births***, on which AMD executives plainly did not rely in misbehaving.[10]

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[9] *Pena v. Cooper Tire & Rubber Co.*, 2010 Del. Super. LEXIS 155 (Del. Super. Ct. Apr. 15, 2010)(applying Delaware law, rather than the law of where the injury occurred, furthered interests in deterrence, compensation, ease in determination, and uniformity of result).

[10] AMD's complaint that Plaintiffs do not evaluate California law also lacks merit. Like Delaware, California law offers no basis for excluding Dr. Frazier. *E.g., People v. Superior Court*, 155 P.3d 259,

IV. AMD'S ARGUMENT THAT PLAINTIFFS DID NOT SATISFY *HAVNER*, AND ITS CLAIM THAT SUCH A FAILURE WARRANTS EXCLUSION UNDER *DAUBERT*, ARE LEGALLY AND FACTUALLY DEVOID OF MERIT

1. *Daubert* controls *Daubert* Proceedings

Regardless of what substantive law governs this case, *Daubert* governs *Daubert* hearings (Op.: 19-25). As noted, AMD ostensibly agrees, writing that "the admissibility of expert opinion is determined by the Delaware Rules of Evidence" (Ans.: 12). Yet, AMD attempts to reintroduce Texas law through the back door, by arguing that evidence is "irrelevant" unless it satisfies AMD's reading of Texas law (Ans.: 13). That argument has no basis in logic or law.

Logically speaking, AMD would have this Court dismiss as "irrelevant" decades of toxicology research concerning the chemicals the parents used at AMD [A488-502]. AMD so argues even though exposing multiple species to one dose of ethylene glycol ethers disrupted sperm production, and increased fetal death rates and malformations, as explained above [A488-91]. It likewise deems "irrelevant" evidence about the dose-response effects of AMD's chemicals, where as exposures increased, there were corresponding elevations in malformations, growth retardation, fetal death, infertility, and DNA breaks [A494]. AMD further deems "irrelevant" literature showing that exposing animals to chemicals at AMD, including ethylene glycol ethers, n-butyl acetate, and xylene, produces the very birth defects from which Jake and Paris suffer, including kidney defects, bladder defects, spina bifida, skeletal malformations, anal atresia, and heart anomalies

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267 (Cal. 2007). More fundamentally, because *Daubert* hearings are procedural in nature, they are governed by Delaware law.

[A495-502]. AMD also deems "irrelevant" *in vitro* comparisons of human and animal tissue, showing common harms these chemicals inflict on humans and animals [A503-506]. AMD would then have this Court deem "irrelevant" every epidemiological study, unless it exposed pregnant women to precisely the same chemicals, in precisely the same quantities, with precisely as many spills, and precisely the same ventilation, on precisely the same gestational days, producing precisely the same birth defects Jake has, in twice the number present in an identical control group. Bizarrely, AMD seems to assert that one such study is "irrelevant" -- unless a second study also exists.

Not so. Assuming *arguendo* the applicability of Texas law to this action, Delaware has adopted *Daubert* as the proper procedure for determining which expert proofs are admissible. Even if Texas prefers a different standard - a proposition AMD denies - the law of the forum controls evidentiary matters (Op.: 30-33 (*citing Lofton v. McNeil Consumer & Specialty Pharms.*, 682 F. Supp. 2d 662, 669 (N.D.Tx. 2010); *Taylor v. Bristol Myers Squibb Co.*, 2004 U.S. Dist. LEXIS 30805, *3 (N.D.Tx. Sept. 15, 2004)). Thus, the Superior Court should have applied *Daubert* to admissibility questions.[11]

AMD's response is to emphasize *Wells v. SmithKline Beecham Corp.*, 601 F.3d 375 (5th Cir. 2010). That four-page opinion does not remotely hold what AMD suggests. *Wells* involved a frivolous claim that Parkinson's Disease medication exacerbated the plaintiff's gambling

[11] Moreover, even if *Havner* were substantive law, it would at most bear on evidentiary sufficiency, not relevance. In that regard, Plaintiffs explained the impropriety of making a summary judgment motion cloaked as a *Daubert* challenge in their Opening brief (Op.: 32-33), explaining how it undermines the Seventh Amendment. AMD declined to respond.

addiction, causing him to lose millions of dollars in Las Vegas. *Id.* at 377. The District Court in diversity assumed the admissibility of the plaintiff's experts, but found that the claim did not survive summary judgment. *Id.* at 378. On appeal, the Fifth Circuit used a traditional *Daubert* (not *Havner*) analysis. It held that the experts should have been stricken, because all three of them "admitted that no scientific basis existed to confirm their conclusions," testifying, *e.g.*, that they had "not come to a conclusion that there is a causal relationship between Requip and pathological gambling." *Id.* at 378-380. Also in sharp contrast to Dr. Frazier, the *Wells* experts relied on unpublished case studies, untested by peer-review. *Id.* at 380.

The language which AMD excerpts (Ans.: 2, 15) reads: "Our conclusion that the trial court did not abuse its discretion is an unremarkable sustaining of the district court's gatekeeping role under *Daubert*. In finding the evidence scientifically unreliable -- and thus insufficient to prove causation under Texas law -- it follows that the experts' testimony was also deficient under *Daubert* given its overlap with Texas questions of scientific sufficiency." *Wells*, 601 F.3d at 381. Yet, critically, footnote 32, explicating this point, cites to those parts of *Havner* that ***illustrate Texas' use of the flexible Daubert criteria***. *Id.* at 381, n.32. In short, *Wells* gives no comfort to AMD. Indeed, the Fifth Circuit expressly wrote "that in epidemiology hardly any study is ever conclusive," adding, "we do not suggest that an expert must back his or her opinion with published studies that unequivocally support his or her conclusions." *Id.* at 380

(citations omitted).[12] This is consistent with the *Grenier*, *Long*, and *Milward* in rejecting AMD's unsound approach to scientific evidence.[13]

2. AMD's *Havner* argument rests on a distortion of the fact record

Assuming *arguendo* that Texas law applied to the *Daubert* hearings, AMD misstates its requirements. *Havner* was meant to apply to opinions, like those involving Bendectin, for which "there is no obvious reason . . . why [it] should be so." *Stafford v. Weight Watchers Inc.*, 478 F. Supp. 2d 624, 633 (S.D.N.Y. 2007). The converse is true here. It is biologically plausible and readily believable that AMD's chemicals caused the Plaintiffs' birth defects, in light of extensive toxicology and *in vitro* literature [A488-506]. Indeed, scientists paid by AMD wrote that semiconductor chemicals "are easily absorbed by all routes of exposure, including dermal[,]" "are known to cross the placenta readily" and are "associated with congenital defects" [A939]. AMD declined to address *Stafford* on appeal.

In any event, even if *Havner* imposed a rigid epidemiology rule this Court rejects, it is satisfied here. The semiconductor industry has been the subject of extensive scientific study [*See* A244-279]. The same is true for the causation chemicals at AMD [*See, e.g.*, A280-91; A1047-62, A1274-77]. AMD's claim that this literature does not satisfy

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[12] That language in *Wells* belies AMD's claim that its reading of *Havner* is so "inescapably interwoven" with AMD's "substantive rights" that it supplants *Daubert* (Ans.: 14 n.10). Moreover, as argued *supra*, it is senseless to claim that a Delaware corporation, misbehaving in California headquarters, has a "substantive right" to avoid liability by invoking Texas cases written years after the Plaintiffs' births.

[13] AMD's reliance on *City of San Antonio v. Pollock*, is likewise misplaced, as that case addressed bare, unsupported expert opinions. 284 S.W.3d 809, 816-17 (Tex. 2009). Here, Dr. Frazier's opinions are anything but conclusory, as her reports employed reasoned analysis, carefully supported by extensive citations to scholarly literature.

Havner rests on a pattern of misrepresenting and omitting evidence.

First, AMD claims that Dr. Frazier did not correlate exposures with those in the cited literature [Ans.: 21]. In fact, Dr. Frazier quantified the parental exposures in three ways: using AMD's own data [A751-52; A792-93], relying on the industrial hygiene analysis of Dr. Stewart [A966-1035], and relying on the computational fluid dynamic analysis of Mr. Reynolds [A1063-94]. Their exposures exceeded levels in the cited studies [A1474-80], and Dr. Stewart averred that AMD's fabs were substantially similar to those studied [A953-65; A1530-37].[14]

Second, AMD tries to dismiss Lin's study (Ans.: 24). This peer-reviewed study of birth defects in offspring of male semiconductor workers measured heart anomalies, a perfect fit with Ontiveros. It found dramatic odds ratios of 4.15 [A1036]. That Lin studied mortality records strengthens his findings, as they did not include children like Paris, whose anomalies were not fatal [A1365-66]. Sworn proof from Dr. Stewart, Dr. Lin's consultant, confirms that the exposures were comparable to those at AMD [A1530-37]. The best AMD can manage is to cite another study of females (where children were not born with birth defects due to miscarriage). This hardly detracts from Paris' claims; her father is male. AMD's citation to language indicating that Lin did not know the mechanism of injury is misplaced [Ans.: 25]. One need not know how cigarettes cause cancer to show that they do.

Third, AMD dismisses Dr. Sung's findings, virtually identical to

[14] AMD's Texas cases also state that "a study need not match the claimant's [exposures] exactly," instead asking if they are "substantially similar." *Merck & Co. v. Garza*, 347 S.W.3d 256, 266 (Tex. 2011). Dr. Stewart's and Dr. Frazier's analysis meet that test.

Lin's, because they addressed male microelectronics workers (Ans: 26). Yet, as Dr. Frazier explained, consistency of results in large, peer-reviewed epidemiological studies of sister industries using comparable chemicals, is powerful causation proof [A1372; A1381]. The electronics and semiconductor industries are commonly classified by the Bureau of Labor Statistics and in occupational medicine due to their similarity [A1372]. Nor is there anything "inconclusive" about Sung's findings – increased risk of over 5.0 with strong statistical power [Id.; A1041].

Fourth, AMD argues that the Court did not ignore relevant studies because they were in the body of proofs presented (Ans.: 27). Yet, its opinion failed to discuss, let alone analyze, the overwhelming body of literature presented. This included dozens of toxicological and genotoxicity studies [A488-505], as well as Dr. Cordier's 1992 and 2001 glycol ether publications, finding increases in multiple anomalies, digestive, and urinary anomalies, all of which Jake has [A282; A289; A519-20]. The opinion's cursory, often inaccurate review of certain studies hardly suggests that other proofs were considered.

Fifth, AMD claims that Dr. Frazier lacked a proper basis for ruling out maternal weight as a cause of the Tumlinson injuries (Ans.: 27). To the contrary, Dr. Frazier, a qualified physician, well-versed in epidemiology and differential diagnosis, considered meta-analyses of studies addressing weight and birth defects. They showed that diabetes (which Ms. Tumlinson did not have) is associated with birth defects, not obesity *without* diabetes [A774-77; A1313-16]. AMD also ignores that even if obesity were a predisposing factor, hazardous exposures at AMD were a concurrent proximate cause [A1316]. Here, as

elsewhere, Dr. Frazier was unchallenged by any competent expert.[15]

Sixth, AMD claims that studies relating to the glycol ether family of chemicals "are not probative" (Ans.: 28). That is untrue. The reproductive toxicity of glycol ethers are well established, and the specific ethylene glycol ethers to which Plaintiffs were exposed are the most toxic of the group [A228-229; A292-94; A642-43; A749-51; A789-91; A1255-65; A1460 (123:17-19)]. Thus, Dr. Cordier's publications, which AMD vainly seeks to discredit [A282; A289; A519-20], are ***more powerful*** proof of causation, because they show that birth defects occur even when women are exposed to less toxic iterations [Id.; A1047-63]. Dr. Frazier also explained, without contradiction, the pathways by which ethylene glycol ethers are transformed to the same harmful metabolites, providing a strong biochemical basis for their common consideration [A1345-46; A906].[16]

Seventh, AMD wrongly discounts semiconductor industry-funded studies (Ans.: 29). These peer-reviewed studies all found associations between cleanroom exposures and miscarriage [A244-258; A755; A894-99]. The accepted dose-response relationship between miscarriage at higher and birth defects at lower doses was supported by standard texts and scientific studies [A1234-69; A1353-56]. AMD had no contrary proof.

Eighth, AMD asserts that Plaintiffs' analysis of individual chemicals must have been considered since they were in the record [Ans.: 30]. Yet, the opinion's brief description of the parents' work

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[15] AMD does not even challenge the differential diagnosis as to Paris. By its silence, AMD admits that this analysis was sound.

[16] *Ruff v. Ensign-Bickford Indus., Inc.*, 168 F. Supp. 2d 1271, 1281 n.10 (D. Utah 2001) (it was "chemically logical" to consider compounds together where they produce the same substance once metabolized).

omitted many exposures including photoresist, ethylene glycol, n-Butyl acetate, and 2-methoxy ethanol [A1474-80; A1505-09; A1538-44].[17] This certainly suggests that it overlooked chemical-specific proofs.

Ninth, AMD claims that Plaintiffs do not satisfy *Havner* [Ans.: 30]. In fact, dozens of peer-reviewed epidemiological studies were cited, with odds ratios over 2 and p-values of .5 [A509-49]. The only competent experts proffered explained why they fit [A217-321; A1381-94]. Thus, while every article can be distinguished in some fashion, AMD has no principled argument that any study, let alone all of them, is irrelevant. Simply put, AMD has offered no basis for removing these compelling and well-supported cases from a jury.

CONCLUSION

For the foregoing reasons, Plaintiffs respectfully request that the July 23, 2010 and January 6, 2012 orders be reversed, and the Superior Court be directed to enter an order denying AMD's motions to exclude Dr. Frazier and apply Texas law, and reinstating the action.

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[17] Notably, AMD's fact statement also fails to mention most of the chemicals to which the parents were exposed at AMD (Ans.: 5-6).