

STATE OF MICHIGAN
IN THE COURT OF APPEALS
PEOPLE OF THE STATE OF MICHIGAN,
Plaintiff-Appellee

L.C (WAYNE) Case No. 2015-376-01-FC
DOCKET NO.

v.
SIERRA TANKERSLEY,
Defendant-Appellant

_____/
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DEFENDANT-APPELLANT 'S SIERRA TANKERSLEY'S
APPLICATION FOR LEAVE TO FILE INTERLOCUTORY APPEAL AND
BRIEF IN SUPPORT OF APPLICATION

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STATEMENT OF QUESTIONS PRESENTED

1. Did the court’s preclusion of the testimony of a biomechanical engineer, testifying about force in a short height fall that could result in fatal skull fracture, deprive the defendant of her 6th amendment right to present a defense and due process of law under the 6th and 14th amendments?

Trial court answered “No.”.

Plaintiff-Appellee answers “No.”

Defendant-Appellant answers “Yes.”

STATEMENT OF JURISDICTION

Defendant-Appellant, Sierra Tankersley, appeals an order granting the Prosecution's Motion to Preclude the testimony of Dr. Steve Rundell, a Biomechanical engineer, who testified at a Daubert hearing that a short height fall (from the standard 36 inch kitchen counter) could cause the skull fractures sustained by the 13-month old decedent, Maliyah Tankersley. (TR, Jury Trial, Daubert Hearing, 02/11/2016,p. 12, lines 13-25). Sierra Tankersley is charged with Felony Murder, a capital offense carrying a mandatory term of imprisonment for life without eligibility for parole, and First-Degree child abuse, a capital offense carrying a penalty of life or any term of years. This is a retrial of a trial that commenced on October 19, 2015, ending in a deadlocked jury, and a mistrial on November 6, 2015.

The second trial in this case began on February 10, 2016. The jury was selected but was not sworn. **Opening statements are scheduled to be made on Tuesday, February 16, 2016.** In interim, a Daubert Hearing was held on February 11, 2016, regarding the admission of expert testimony by the defense expert, Biomechanical engineer, Dr. Steve Rundell. After oral arguments were made on February 12, 2016, the trial judge granted the Prosecutor's Motion, ruling that it would preclude the testimony of Dr. Steve Rundell.

Jurisdiction is conferred upon this court by *MCR 7.203(B)*, *MCR 7.205(F)*, and *MCR 7.213(C)(1)*.

STATEMENT OF FACTS AND OF THE CASE

Defendant-Appellant, Sierra Tankersley, appeals an order granting the Prosecution's Motion to Preclude the testimony of Dr. Steve Rundell, a Biomechanical engineer, who testified at a Daubert hearing that a short height fall (from the standard 36 inch kitchen counter) could cause the skull fractures sustained by the 13-month old decedent, Maliyah Tankersley. (TR, Jury Trial, Daubert Hearing, 02/11/2016,p. 12, lines 13-25).

Sierra Tankersley is charged with Felony Murder, a capital offense carrying a mandatory term of imprisonment for life without eligibility for parole, and First-Degree child abuse, a capital offense carrying a penalty of life or any term of years. This is a retrial of a trial that commenced on October 19, 2015, ending in a deadlocked jury, and a mistrial on November 6, 2015. On January 22, 2016, the defense filed an amended witness list, including a biomechanical engineer, Steven Rundell. Steven Rundell, Ph.D., P.E., a biomechanical engineer, had offered his services *pro bono* to investigate Ms. Tankersley's case and to testify as an expert in his field of expertise, as a biomechanical engineer. Dr. Steve Rundell filed a report, which stated, the following, inter alia:

“I have ***personally performed numerical calculations*** to determine the impact force ***associated with Ms. Maliyah Tankersley's head*** striking the floor after a fall from a height of approximately 36 inches. The results from this analysis indicate that the fall provided sufficient force to cause skull fracturing (Yoganandan & Pintar, 2004). Further, skull fracturing has been documented to occur as a result of falls from similar heights in both ***infants*** and adults (Gurdjian, Webster, & Lissner, 1953; Powell, Passalacqua, Baumer, Fenton, & Haut, 2012; Powell, Passalacqua, Fenton, & Haut, 2013; Weber, 1984). (Emphasis added.)”

This report was testified to by Dr. Rundell during the 02/11/2016 Daubert hearing.

The prosecution filed a Motion to Exclude the testimony of Dr. Rundell. The second trial in this case began on February 10, 2016. The jury was selected but was not sworn. Opening statements are scheduled to be made on Tuesday, February 16, 2016. In interim, a Daubert Hearing was held on February 11, 2016, regarding the admission of expert testimony by the defense expert, Biomechanical engineer, Dr. Steve Rundell. After oral arguments were made on February 12, 2016, the trial judge granted the Prosecutor's Motion, ruling that it would preclude the testimony of Dr. Steve Rundell. (TR, Daubert Hearing, 02/12/2016, pp. 19-21). See also Order Granting the Prosecution Motion to Preclude the testimony of Dr. Rundell.

The testimony of biomechanical engineer, Dr. Steve Rundell, was based on his scientific, technical, or other specialized knowledge, and was proffered by the defense to assist the finder of fact, the jury, in understanding the evidence *or to determine a fact in issue*, that the child suffered the injuries as a result of an accidental short fall from a kitchen countertop. *A videotaped interview of Sierra Tankersley's interview with the Officer in Charge of the case, Detective Shea was the basis for the defense theory that this was an accidental short fall from the kitchen counter.* That videotaped interview was referred to extensively by Steve Rundell when he was cross-examined by the court. Upon information and belief, the court (the 3rd judge Presiding on the case) was completely unfamiliar with the record. Even though defense counsel informed the court that Dr. Rundell based his testing and opinion on the extensive videotaped interview between Sierra Tankersley and 2 detectives, the court never reviewed the video in coming to its conclusion to exclude the testimony of the defense biomechanical engineer. (TR, Daubert Hearing, 02/11/2016, pp.52, 53).

Dr. Rundell testified that the majority of his work as a forensic biomechanical engineer encompassed determining how injuries happened in accidents. (TR, Daubert Hearing, 02/11/2016, pp. 5,6). He described the functioning of the forensic biomechanical engineer as follows:

“Q. And do biomechanical engineers also engage in criminal investigation?

A. Yes. So I don't work for a car company, I don't work for a helmet company. What I do specifically is I work as a forensic biomechanical engineer. *So in cases like this where there's stories related to how an injury happened, I will apply those mechanical engineering principles in context of also looking at all the different literature and the studies that have been performed in the past to determine the validity of that description.*”

(TR, Jury Trial/Daubert Hearing, 02/11/2016, p. 6, lines 7-16).

Steve Rundell's educational background included a Master's in Engineering Mechanics and a Ph.D., or doctorate in biomechanical engineering. (TR, Jury Trial/Daubert Hearing, 02/11/2016, p. 6.). His publications, both from academic and professional research are peer-reviewed. (Id., p. 7). Even though Dr. Rundell's fee for in-court testimony was usually \$400, he was offering his services in this case *pro bono*. (Id., p. 7, lines 8-23).

Dr. Rundell testified that he had reviewed trial transcripts from the previous trial, an autopsy report with autopsy photos, an interrogation video, medical records, Dr. Dragovic's report, a Detroit Police Department follow-up report, Sierra Tankerley statement from Oakwood Hospital, 57 digital photographs, including photographs of the apartment where the injuries were sustained, and references provided as a bibliography that in his report. (TR, Daubert Hearing, 02/11/2016, pp. 8, 9). Additionally, Dr. Rundell

testified that he had worked in the field since 2005 and had acquired general knowledge. (TR, Daubert Hearing, 02/11/2016, p. 12).

Dr. Rundell testified that he performed an injury-analysis causation to determine the plausibility of the account provided by Sierra Tankersley, and determined that a short-height fall, specifically from 36 inches, would have enough energy to cause a skull fracture, and further that multiple skull fractures could occur from a single impact. (TR, Daubert Hearing, 02/11/2016, p. 12). Following is an excerpt of Dr. Rundell's testimony:

“Q. What did you do in this case, what were you asked to do?

A. I was asked to essentially do what I refer to as an injury causation analysis and was to determine if the story provided by Ms. Tankersley, specifically the falls could be responsible for the documented injuries, specifically the skull fractures.

Q. And what did you determine?

A. I determined that, and this is a relative term, but *a short-height fall, specifically something from 36 inches certainly would have enough energy to cause a skull fracture and that the previous literature demonstrates and shows definitively that skull fractures, multiple, can occur from a simple impact.*”

(TR, Daubert Hearing, 02/11/2016, p. 12, lines 13-25).

Likewise, during cross-examination, Dr. Rundell testified as follows:

“At the end of this day this is a study where they dropped infant skulls and they documented multiple locations of fracture. My opinion in this case isn't going to be how likely it is or how unlikely it is. It's simply going to be that a fall from a short height, specifically 36 inches provides enough force and enough energy to fracture both an infant's skull and an adult's skull. That's it.”

(TR, Daubert Hearing, 02/11/2016, p. 45, lines 9-16).

Dr. Rundell testified that Sierra Tankersley described a fall from the kitchen countertop in the interrogation video. (TR, Daubert Hearing, 02/11/2016, p. 12, lines 1-5). He indicated that he also saw the kitchen countertop of the apartment from the photographs. (Id., p. 12).

Dr. Rundell testified that he used the guidelines set forth by the Federal Judicial Center in the Reference Manual on Scientific Evidence as to the steps to be used in reaching a conclusion that *a specific event caused a specific causation*, to wit, “the event being the fall from the countertop and the condition being the multiple skull fractures, specifically the left parietal and the right basilar skull fracture.” (TR, Daubert Hearing, 02/11/2016, p. 13). Rundell identified the 4-step analysis he used as follows: (1.) **Step 1, Characterizing the Medical condition**—Dr. Rundell testified that he relied heavily on the autopsy photographs and on the medical examiner’s descriptions. (Id., p. 13). (2.) **Step 2, Characterizing the Exposure**—He indicated that this step was “*the most critical step for a biomechanical engineer.*” He testified that he characterized the exposure, by “**determining the mechanical forces that were caused from the fall.**” (Id., p. 14). Dr. Rundell testified that part of his “analysis involved **the basic laws of physics to determining the speed at impact, the acceleration associated, with the impact and ultimately the force associated with the impact.**” (TR, Daubert Hearing, 02/11/2016, p. 14, lines 5-14). (3.) **Step 3.** Dr Rundell identified the third step as establishing causation. He indicated that he looked to the literature to see whether a short-height fall had been associated with multiple skull fractures. (TR, Daubert Hearing, 02/11/2016, p. 15). **Step 4.** Dr. Rundell testified that the 4th step was the specific causation step “which it to take into

consideration all the facts and everything, the specific injury pattern, everything associated with this case along with the forces that were calculated in the exposure determination and reach an opinion as to whether or not that event could be responsible for that condition.” (TR, Daubert Hearing, 02/11/2016, p. 15).

Dr. Rundell identified the injuries at issue as follow:

“Now, there’s still some markings on here but basically fractures to the left parietal which basically attached to suture lines here, and then there was a separate fracture in what we call the base of the skull and the occipital bone that connected from this lamboid suture here to where the – - it’s in the cranial facet to where the spinal cord attached to the brain, so basilar skull fracture.”

(TR, Daubert Hearing, 02/11/2016, p. 15, lines 10-16).

Dr. Rundell talked about skull fractures from a direct impact, characterizing fractures in 2 ways - -“in-bending” and “out-bending”. (TR, Daubert Hearing, 02/11/2016, pp. 15, 16). Dr. Rundell described the “in-bending fractures” as “the more obvious direct application of force, the skull bends in where the force is applied and fractures occur along that bend.” (TR, Daubert Hearing, 02/11/2016, p. 15, lines 21-25, p. 16, lined 1-2). He described “out-bending” as follows: The “indirect or out-bending mode is areas away from the direct impact where the skull bends out. If you’ve ever seen a golf ball hit in slow motion or a tennis ball, or watch a watermelon hit the ground it will bend a lot, it will deform, it will turn into an oval and so that area where it’s bending towards the periphery you can also have fractures from out-bending.” (TR, Daubert Hearing, 02/11/2016, p. 16, lines 3-9). He indicated that the fractures could occur from a short height or a 36 inch fall as follows:

“ Q. Can these sorts of fractures occur from a short height or a 36" fall?

A. Yes.”

(TR, Daubert Hearing, 02/11/2016, p. 16, lines 12-14).

Dr. Rundell produced a copy number of slides and references contained in Exhibit 1. (TR, Daubert Hearing, 02/11/2016. p. 16). *Notably, Exhibit 1 and reference manuals referred to by Dr. Rundell as Exhibits 2 and 3 were admitted into evidence, without objection.* (Id., p. 17).

Dr. Rundell pointed to the highlighted text in the slides contained in exhibit 1 (TR, Daubert Hearing, 02/11/2016, p. 17). Dr. Rundell pointed to photographs of the kitchen counter top supplied by the police in the instant case, a few excerpts from websites showing the standard height of kitchen cabinetry reflecting the standard 35-inch to 36-inch height (Id., pp. 18, 19). Dr. Rundell pointed to another slide contained in Exhibit 1 regarding the Laws of Physics Conservation of Energy/ Dr. Rundell indicated that he provided a handwritten derivation of the law of the conservation of energy showing how he determined the formula for the speed at impact. (TR, Daubert Hearing, 02/11/2016, pp. 19, 20). Following is an excerpt of Dr. Rundell’s testimony:

“Since this is a Daubert hearing and I am responsible for justifying all of my methodology. I have provided a handwritten derivation of the law of the conservation of energy showing how I determined the formula for the speed at impact.

Energy is conserved. Therefore, the potential energy of an object at 36 inches equals the kinetic energy at the time that it strikes the ground. That's essentially what this derivation is showing, therefore the speed of impact

equals the square root of two times gravity times the height of the fall. That is a standard physics calculation. I have provided the derivation for any scrutiny.”

(TR, Daubert Hearing, 02/11/2016, p. 19, lines 20-25, p. 20, line 1-7).

Dr. Rundell testified that he ranged the speed of the fall at the time of impact at 9.5 miles per hour to 10.9 miles per hour, as follows:

“The next slide indicates the actual numbers that were fed in just to show what the speed of impact would be at anywhere between 36 and 48 inches. Now 36 inches is the height of the counter. However, for someone seated on the counter, that height would be greater than 36 inches, the total fall height. So I ranged the speed between 9.5 miles per hour and 10.9 miles per hour at the time of impact.”

(TR, Daubert Hearing, 02/11/2016, p. 20, lines 9-16).

Dr. Rundell then pointed to an excerpt from a study that was performed at the University of Pennsylvania, Children’s Hospital of Philadelphia involving the use of anthropometric infants, dummies, shaped and weighted to be a 12-month old dummy, dropped from various heights onto various surfaces as follows:

“The next slide is an excerpt from a study that was performed at the University of Pennsylvania, I think in -- yeah, with the Children's Hospital of Philadelphia. This particular study used anthropometric infants, dummies that are shaped and weighted to be a 12-month old dummy, and dropped from various heights onto various surfaces, carpet, foam and concrete specifically.”

(TR, Daubert Hearing, 02/11/2016, p. 20, lines 17-23).

With respect to the application of the study performed at Children’s Hospital of Philadelphia, to the instant case, Dr. Rundell testified as follows:

“So, the duration of impact is what we pulled -- what I pulled from this particular study which shows that for a head striking either carpet or concrete you have a duration of impact of somewhere around five milliseconds. So the impact time is very short.

So delta V over delta T is how we get the acceleration.

Force equals mass times acceleration. So in order to get the mass of Mayliah's head I referenced the 12-month old, it's called CRABI, C-R-A-B-I dummy, as a starting point for the head weight. That's what you see on this slide here as far as the head weight for a 12-month old that weighs 22 pounds, so two pounds off from Mayliah's weight, according to the autopsy report. And I also referenced a peer-reviewed generally accepted study where they gave a ratio of head to body weight head masses to come up with a range of approximately five pounds for the weight of her head. And again, the slide after that is an excerpt from the autopsy report showing her documented weight.”

(TR, Daubert Hearing, 02/11/2016, p. 21, lines 7-25).

Notably, Dr. Rundell testified that he referenced a **“peer-reviewed generally accepted study where they have a ratio of head to body weight head masses to come up with a range of approximately five pounds for the weight of her head.”** Dr. Rundell then pointed to the next slide in Exhibit 1 which was essentially “an excerpt from the autopsy report” showing the documented weight of Maliyah Tankersley. Dr. Rundell further testified about his calculation of the force associated with the impact between the head and the ground. (TR, Daubert Hearing, 02/11/2016, p. 22). The next slide in Exhibit one showed that there was enough force in a fall from 36 to 48 inches for an adult skull to

fracture with a fall from 36 to 48 inches. (Id., p. 22). Likewise, the next slide in Exhibit 1 showed another study where “they dropped adult skulls at speeds of approximately ten miles per hour and actually documented multiple areas of fracture in the skull, so multiple lines of fracture at impact speeds around ten - - anywhere from 8.3 to 12.2 miles per hour for adult skulls.” (Id., p. 22). Dr. Rundell testified about a slide in Exhibit 1 which showed that “impacts to the back of the head specifically resulted in basilar skull fractures that in many cases connected through the cranial fossa and the area where the spinal cord connects to the brain.” (Id., p. 22).

Additionally, Dr. Rundell pointed to the slide contained in Exhibit 1, specific to skull fractures in infants, where they performed drop “**tests using cadaveric infants from a fall height of 82 centimeters which is less than what we have in the subject incident and basically documented**” cadaveric fractures in all of the tested specimens. (Emphasis added). (TR, Daubert hearing, 02/11/2016, pp. 22, line 25, p. 23, lines 1-6). Dr. Rundell pointed out the fact that the next slide showed some of the “fracture patterns either being single lines of fracture or multiple lines of fracture for the infant skulls that were struck.” (Id., p. 23, lines 7-10). Finally, as to Exhibit 1, Dr. Rundell testified that the last slide which depicted data from elite level boxing showing. Based on his calculations shown, a punch would actually result in le force than a fall from 36 to 48 inches.” (TR, Daubert Hearing, 02/11/2016, p. 23).

Dr. Rundell testified that he could not say whether the fractures in Maliyah’s skull

PRIOR TRIAL TESTIMONY OF DR DRAGOVIC WAS MISCHARACTERIZED BY THE PROSECUTION IN ITS ARGUMENT TO THE COURT

The prosecution mischaracterized Dr. Dragovic's testimony regarding the existence of a depressed skull fracture. Dr. Dragovic's characterization of the skull fracture was similar to that of Dr. Rundell. Following is an excerpt of Dr. Dragovic's testimony during cross-examination by the prosecution:

“Q. Would you agree, Doctor, the fracture that started, I believe, on the left side and went across on the top of her head, that was a depressed skull fracture, is that correct?”

A. This was a linear fracture *with the minimum elevation of one side. This is not a true depressed of the skull where there are both sides of a fracture caving into the covering onto the brain. So, there is no evidence in this child of a depressed skull fracture* creating additional damage to the surface of the brain.”

(TR, Jury Trial, 10/29/2015, p. 83, lines 7-16).

ARGUMENT

I. STANDARD OF REVIEW AND ISSUE PRESERVATION

Issues of law and constitutional issues are reviewed de novo. *US v Griffith*, 17 F3d 865 , 877 (CA6, 1994), cert den 513 US 850 (1994); *People v Carpentier*, 446 Mich 19 , 60 n19 (1994).

The issue was preserved by way of Motions filed and Responses to the prosecution's motions as well as oral argument on Motions in the trial court and at a Daubert hearing held on February 11 and 12, 2016. See lower court Register of Actions.

DISCUSSION

Defendant-Appellant Sierra Tankersley incorporates by reference her written arguments filed in the trial court and her oral arguments made during prior hearings, as well as in the Daubert hearing of February 11, 2016 and February 12, 2016.

MRE 702 has adopted the federal *Daubert* standard of the equivalent *FRE 702*.

See *Daubert v Merrell Dow Pharm., Inc*, 509 US 579, 580; 113 S Ct 2786, 2790; 125 L

Ed 2d 469 (1993). *MRE 702* provides in pertinent part:

If the court determines that scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by *knowledge, skill, experience, training, or education* may testify thereto in the form of an opinion or otherwise if (1) the testimony is based on sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

Defendant-Appellant states that the trial court in precluding the testimony of biomechanical engineer, Steve Rundell, did not so under the standards set for the in *Daubert supra* for the following reasons and *MRE 702*.

TESTIMONY OF DEFENSE FORENSIC PATHOLOGIST, DR. DRAGOVIC, ESTABLISHES THE NEED FOR A BIOMECHANICAL EXPERT IN SCENE RE-ENACTMENT

The defendant's asserts the defense of accident in the case sub judice. There was a protracted interview of the defendant involving the detective and officer in charge of the case, Detective Shea. During that interview defendant Sierra Tankersley continuously asserted that her baby fell off of the kitchen counter. At a trial which culminated in a deadlocked jury and a mistrial, defense expert Dragovic testified that the Wayne County medical examiner omitted to use a scientific account in support of its erroneous conclusion that the fatal injuries were intentionally inflicted. Dr. Dragovic testified that a biomechanical engineer was necessary to test force:

“Q. Is it an important consideration, Doctor, the amount of force that is used?

A. The amount of force is basically reflected by the outcome. If there is little force, there is relatively a smaller injury. If there is greater force, there is greater injury. That’s simple for common sense application. ***However, there are people who can test the force in any given situation. They are called biomechanics, and they can be involved in assessment in a case like that.***”

(TR, Jury Trial, 10/29/2015, p. 82, lines 21-25, p. 83, lines 1-6).

Additionally, in his report Dr. Dragovic wrote:

“...no effort has been made to try to establish evidence of healing in the scalp, or the fractured bones by sampling these tissues for microscopic examination, **neither had there been any defined demonstrable result of a purposeful act in the autopsy of this toddler to substantiate the manner of death as *homicide*.**

There is no information available if any re-enactment at the scene has been carried out in light of the account the mother of the deceased toddler provided in her interview by the police.” See Defense Exhibit, Report of Dr. Dragovic.

ABSENCE OF SCENE RE-ENACTMENT BY THE PROSECUTION WITNESSES

In fact, the Wayne County Medical Examiner Dr. Hlavaty, acknowledged under cross-examination that she had not engaged in any re-enactment of the scene, even though their office employed people to re-enact scenes. (TR, Jury Trial, 10/21/2015, p. 117), nor had she used any investigators, independent of the Detective Shea in gathering information, and in coming to her conclusions. (TR, Jury Trial, 10/21/2015, p. 117). Hlavaty herself acknowledged that short falls have the potential to be fatal, but she characterized that as

occurring “in less than one in a million.” (TR, Jury Trial, 10/21/2015, p. 136). Following is the testimony of Hlavaty acknowledging that *short falls could result in fatal injuries*:

Q. (By Ms. Barnwell) You would agree that short falls have potential for fatality—yes or no?

A. Yes. Actually they have determined that the risk of death in a short fall, again with a strict criteria that I’ve said, is less than one in one million. So, yes, it is possible, but the odds would be extraordinarily slim.”

When questioned as to whether the statement she had parroted about “one in one million” was based on actual testing, Dr. Hlavaty gave the following response:

“Q. But they didn’t do the testing to reach the conclusion in those one in a million. You don’t know how they are reaching that conclusion.

A. Again, there is no testing that you are referring to, so I don’t know what you are referring to.

Q. You are repeating. You are repeating, but you don’t know the basis for what you are saying. The repetition of the one in a million, where did you get that from?

A. That is the title of one of the review articles that did not just an extensive review themselves, but a review of all the literature of short falls.

Q. Did you just say all the literature or the one that were favorable to the position that you are taking?

A. I believe that there are several hundred references for that one particular article. Since I did not go through all one hundred before walking into court, I could not tell you that.”

(TR, Jury Trial, 10/21/2015, p. 136, lines 10-25, p. 137, lines 1).

During the Daubert hearing, Dr. Rundell testified that he performed an injury-analysis causation to determine the plausibility of the account provided by Sierra Tankersley, and determined that a short-height fall, specifically from 36 inches, would have enough energy to cause a skull fracture, and further that multiple skull fractures could occur from a single impact. (TR, Daubert Hearing, 02/11/2016, p. 12). The court's ruling limits the jury only to the prosecution's theory that this injury was a result of an intentional blow by a fist. The court's ruling deprives the defendant of a defense.

DR. RUNDELL'S TESTIMONY DIRECTLY ADDRESSES THE ISSUE OF FORCE, A MATERIAL QUESTION IN SIERRA'S TANKERSLEY'S DEFENSE AND DIRECTLY COUNTERS DR. HLAVATY'S PRIOR TESTIMONY

Dr. Hlavaty (who performed the autopsy of Maliyah Tankersley) testified at the prior trial as follows as to force:

“Q. ...Doctor you indicated that this particular skull fracture was depressed?

A. Yes.

Q. What do that indicate to you, if anything?

A. What that indicates is that it was a - - **it takes more force then to cause a simple linear fracture. *There's no number that I can put to quantitate to the force other than to say it would take - - it would take significantly more force to impact, not just to break the skull but to force part of the break to go down into that, or be depressed.***”

(TR, Jury Trial, 10/21/2015, p. 51, line 3-13).

Dr. Hlavaty testified further that there would not be depression if the fall was from a short-height fall; rather, there would be a simple fracture. (TR, Jury Trial, 10/21/2015, pp. 51, 52). Following is an excerpt of Dr. Hlavaty's testimony:

“Q. And do you ever see depressed skull fractures as the result of a - - when you say fall, what do you mean?”

A. Well, a fall, at least in terms of children, we delineate between a short distance fall, and then all other falls meaning from a greater height or distance. **If this was from a short distance, meaning below four-and-a half to five feet, we would see a simple fracture, meaning that two portions of the bones would be lined up. It would not be depressed. If this was due to a fall from several stories, or if this fracture was inflicted onto her, meaning she was beaten, then we would see a depressed skull fracture. But in a short fall, you do not see a depressed fracture in a child’s head.**” (Emphasis added).

(TR, Jury Trial, 10/21/2015, p. 51, lines 24-25, p. 52, lines 1-12).

DR. Hlavaty then concluded that the injuries were inflicted and were not the result of a short fall, (TR, Jury Trial, 10/21/2015, p. 52), as follows:

“Q. So, Doctor based on the autopsy that you performed, can you render an opinion on how this child would have sustained this particular injury?”

A. Just looking at the depressed fracture in isolation from everything else, I know that *it could not have been due to a short distance fall*, that either there was *something more to the story like a car accident* that I was not told of, or that *these injuries were inflicted upon her.*” (Emphasis added).

(TR, Jury Trial, 10/21/2015, p. 52, lines 13-21).

Dr. Hlavaty testified definitively that she could not quantify the amount of force needed to sustain the particular injury, as follows:

“Q. Now, **you say you can’t comment regarding the amount of force that would have been needed to cause this particular injury, is that correct?**

A. **Right.**” (Emphasis added).

(TR, Jury Trial, 10/21/2015, p. 52, lines 22-25).

In her prior trial testimony, prosecution witness, Dr. Hlavaty further acknowledged that there was disagreement in the medical literature that a person could sustain this type of fatal injury in a short fall, as follows:

“Q. You did not review our literature that said to the contrary that a person can sustain that type of injury in a short fall?

A. Correct. I only am familiar with the literature that we are currently using as standards in the field.

Q. But, **there is other literature because there is disagreement in the field about that?**

A. **Correct.**

Q. **The trauma in a short fall, correct?**

A. **Correct.**”

(TR, Jury Trial, 10/21/2015, p. 135).

The testimony of Dr. Rundell underscores Sierra Tankersley’s defense that the injuries were sustained in an accidental short fall as is expressed in the opposing medical literature acknowledged by Dr. Hlavaty in her testimony under cross-examination. (TR, Jury Trial, 10/21/2015, p. 135).

Dr. Rundell’s testimony as a biomechanical expert is central to the defense of Sierra Tankersley as testified to by Dr. Dragovic. Additionally, Rundell’s testimony directly addresses the unanswered question as to force and enables Sierra Tankersley to

assert her defense that the child fell off of the countertop accidentally and sustained the injuries.

Contrary to the prosecution witnesses headed by Dr. Hlavaty, Dr. Rundell cited to multiple sources in reaching his conclusion. This prior testimony, taken in conjunction with the testimony of Dr. Dragovic underscores that Dr. Rundell's testimony will assist the trier of fact in the instant case.

Dr. Rundell testified that his major practice area involves the scientific investigation of accidents resulting in traumatic injury. He further testified that he holds a B.S. and M.S. in Mechanical Engineering from Michigan State University and a Ph.D. in Biomedical Engineering from Drexel University. Dr. Rundell is a licensed Professional Engineer and has published numerous peer reviewed journal articles and abstracts. He testified that he has presented scientific findings at both medical and engineering conferences. (See Exhibit A.)

Dr. Rundell's analysis in this case comports to the standards laid out in the Federal Judicial Center's *Reference Manual on Scientific Evidence* (the "*Reference Manual*"). The *Reference Manual* is a document written jointly by the National Academies of Science and the Federal Judicial Center to assist judges in understanding the basic tenets of key scientific fields. "The Reference Manual on Scientific Evidence, here in its third edition, is formulated to provide the tools for judges to manage cases involving complex scientific and technical evidence." *Reference Manual*, p. xv.

DR. RUNDELL HAS SATISFIED THE DAUBERT STANDARDS TO BE QUALIFIED AS A BIOMECHNAICAL ENGINEER IN THIS CASE

EDUCATIONAL BACKGROUND AND EXPERIENCE

As the defense argued during the Continued Daubert hearing on February 12, 2016, Dr. Rundell is qualified in his field of biomechanical engineering, and his opinion was based on reliable data, principle and methodologies. Dr. Rundell testified that the majority of his work as a forensic biomechanical engineer encompassed determining how injuries happened in accidents. (TR, Daubert Hearing, 02/11/2016, pp. 5,6). He described the functioning of the forensic biomechanical engineer as follows:

“Q. And do biomechanical engineers also engage in criminal investigation?

B. Yes. So I don't work for a car company, I don't work for a helmet company. What I do specifically is I work as a forensic biomechanical engineer. *So in cases like this where there's stories related to how an injury happened, I will apply those mechanical engineering principles in context of also looking at all the different literature and the studies that have been performed in the past to determine the validity of that description.*”

(TR, Jury Trial/Daubert Hearing, 02/11/2016, p. 6, lines 7-16).

Steve Rundell's educational background included a Master's in Engineering Mechanics and a Ph.D., or doctorate in biomechanical engineering. (TR, Jury Trial/Daubert Hearing, 02/11/2016, p. 6.). His publications, both from academic and professional research are peer-reviewed. (Id., p. 7). Even though Dr. Rundell's fee for in-court testimony was usually \$400, he was offering his services in this case *pro bono*. (Id., p. 7, lines 8-23).

DR. RUNDELL'S TESTIMONY IS BASED ON EXTENSIVE REVIEW OF DATA AND MATERIALS RELATING TO THIS CASE

Dr. Rundell testified that he had reviewed trial transcripts from the previous trial, an autopsy report with autopsy photos, an interrogation video, medical records, Dr. Dragovic's report, a Detroit Police Department follow-up report, Sierra Tankerley

statement from Oakwood Hospital, 57 digital photographs, including photographs of the apartment where the injuries were sustained, and references provided as a bibliography that in his report. (TR, Daubert Hearing, 02/11/2016, pp. 8, 9). Additionally, Dr. Rundell testified that he had worked in the field since 2005 and had acquired general knowledge. (TR, Daubert Hearing, 02/11/2016, p. 12).

INJURY-ANALYSIS CAUSATION PERFORMED BY DR. RUNDELL AND RELIANCE ON SCIENTIFIC DATA AND LITERATURE INCLUDING THE REFERENCE MANUAL ON SCIENTIFIC EVIDENCE

The prosecutor's claim that Dr. Rundell has not used as the basis of his report any sources based on human infant skulls is patently false. As noted in the portion of his report excerpted above, and in his 02/12/2016 testimony at the Daubert hearing, Dr. Rundell *personally* performed numerical calculations to determine the impact force associated with the *actual decedent's head* striking the floor after a fall of approximately 36 inches and he then consulted studies on skull fracturing in both *infants* and adults.

Additionally as acknowledged during his testimony, three of the studies Dr. Rundell, consulted specifically utilize or simulate human infant skulls. These studies are titled:

- a. "Experimental Studies of Skull Fractures in Infants" (Weber 1984);
- b. "Anthropomorphic simulation of falls, shakes, and inflicted impacts in infants" (Prange *et al.*, 2003); and
- c. "Finite element modeling of pediatric head impact: Global validation against experimental data." (Roth *et al.*, 2010) (*See* "Affidavit of Steven Anthony Rundell" attached hereto as Exhibit A and made a part hereof.)

Dr. Rundell testified that he performed an injury-analysis causation to determine the plausibility of the account provided by Sierra Tankersley, and determined that a short-height fall, specifically from 36 inches, would have enough energy to cause a skull fracture,

and further that multiple skull fractures could occur from a single impact. (TR, Daubert Hearing, 02/11/2016, p. 12). Following is an excerpt of Dr. Rundell's testimony:

“Q. What did you do in this case, what were you asked to do?”

A. I was asked to essentially do what I refer to as an injury causation analysis and was to determine if the story provided by Ms. Tankersley, specifically the falls could be responsible for the documented injuries, specifically the skull fractures.

Q. And what did you determine?

A. I determined that, and this is a relative term, but *a short-height fall, specifically something from 36 inches certainly would have enough energy to cause a skull fracture and that the previous literature demonstrates and shows definitively that skull fractures, multiple, can occur from a simple impact.*”

(TR, Daubert Hearing, 02/11/2016, p. 12, lines 13-25).

Likewise, during cross-examination, Dr. Rundell testified as follows:

“At the end of this day this is a study where they dropped infant skulls and they documented multiple locations of fracture. My opinion in this case isn't going to be how likely it is or how unlikely it is. It's simply going to be that a fall from a short height, specifically 36 inches provides enough force and enough energy to fracture both an infant's skull and an adult's skull. That's it.”

(TR, Daubert Hearing, 02/11/2016, p. 45, lines 9-16).

Dr. Rundell testified that Sierra Tankersley described a fall from the kitchen countertop in the interrogation video. (TR, Daubert Hearing, 02/11/2016, p. 12, lines 1-5). He indicated that he also saw the kitchen countertop of the apartment from the photographs. (Id., p. 12).

Dr. Rundell testified that he used the guidelines set forth by the Federal Judicial Center in the Reference Manual on Scientific Evidence as to the steps to be used in reaching a conclusion that *a specific event caused a specific causation*, to wit, “the event being the fall from the countertop and the condition being the multiple skull fractures, specifically the left parietal and the right basilar skull fracture.” (TR, Daubert Hearing, 02/11/2016, p. 13). Rundell identified the 4-step analysis he used as follows: (1.) **Step 1, Characterizing the Medical condition**—Dr. Rundell testified that he relied heavily on the autopsy photographs and on the medical examiner’s descriptions. (Id., p. 13). (2.) **Step 2, Characterizing the Exposure**—He indicated that this step was “the most critical step for a biomechanical engineer.” He testified that he characterized the exposure, by “determining the mechanical forces that were caused from the fall.” (Id., p. 14). Dr. Rundell testified that part of his “analysis involved **the basic laws of physics to determining the speed at impact, the acceleration associated, with the impact and ultimately the force associated with the impact.**” (TR, Daubert Hearing, 02/11/2016, p. 14, lines 5-14). (3.) **Step 3.** Dr. Rundell identified the third step as establishing causation. He indicated that he looked to the literature to see whether a short-height fall had been associated with multiple skull fractures. (TR, Daubert Hearing, 02/11/2016, p. 15). **Step 4.** Dr. Rundell testified that the 4th step was the specific causation step “which it to take into consideration all the facts and everything, the specific injury pattern, everything associated with this case along with the forces that were calculated in the exposure determination and reach an opinion as to whether or not that event could be responsible for that condition.” (TR, Daubert Hearing, 02/11/2016, p. 15).

Dr. Rundell identified the injuries at issue as follow:

“Now, there’s still some markings on here but basically fractures to the left parietal which basically attached to suture lines here, and then there was a separate fracture in what we call the base of the skull and the occipital bone that connected from this lamboid suture here to where the – - it’s in the cranial facet to where the spinal cord attached to the brain, so basilar skull fracture.”

(TR, Daubert Hearing, 02/11/2016, p. 15, lines 10-16).

Dr. Rundell talked about skull fractures from a direct impact, characterizing fractures in 2 ways - -“in-bending” and “out-bending”. (TR, Daubert Hearing, 02/11/2016, pp. 15, 16). Dr. Rundell described the “in-bending fractures” as “the more obvious direct application of force, the skull bends in where the force is applied and fractures occur along that bend.” (TR, Daubert Hearing, 02/11/2016, p. 15, lines 21-25, p. 16, lined 1-2). He described “out-bending” as follows: The “indirect or out-bending mode is areas away from the direct impact where the skull bends out. If you've ever seen a golf ball hit in slow motion or a tennis ball, or watch a watermelon hit the ground it will bend a lot, it will deform, it will turn into an oval and so that area where it's bending towards the periphery you can also have fractures from out-bending.” (TR, Daubert Hearing, 02/11/2016, p. 16, lines 3-9). He indicated that the fractures could occur from a short height or a 36 inch fall as follows:

“ Q. Can these sorts of fractures occur from a short height or a 36" fall?

B. Yes.”

(TR, Daubert Hearing, 02/11/2016, p. 16, lines 12-14).

DEFENSE EXHIBITS 1, 2 AND 3 ADMITTED INTO EVIDENCE ESTABLISH THE RELIABILITY OF THE DATA AND SCIENTIFIC TESTS AND CALCULATIONS USED BY DR RUNDELL INCLUDING PEER-REVIEWED STUDIES

Dr. Rundell produced a copy of slides (TR, Daubert Hearing, 02/11/2016, p. 16, Defendant's Exhibit 1. *Notably, Exhibit 1 and reference manuals referred to by Dr. Rundell as Exhibits 2 and 3 were admitted into evidence, without objection.* (Id., p. 17).

Dr. Rundell pointed to the highlighted text in the slides contained in exhibit 1 (TR, Daubert Hearing, 02/11/2016, p. 17). Dr. Rundell pointed to photographs of the kitchen counter top supplied by the police in the instant case, a few excerpts from websites showing the standard height of kitchen cabinetry reflecting the standard 35-inch to 36-inch height (Id., pp. 18, 19). Dr. Rundell pointed to another slide contained in Exhibit 1 regarding the Laws of Physics Conservation of Energy/ Dr. Rundell indicated that he provided a handwritten derivation of the law of the conservation of energy showing how he determined the formula for the speed at impact. (TR, Daubert Hearing, 02/11/2016, p. 19). Following is an excerpt of Dr. Rundell's testimony:

“Since this is a Daubert hearing and I am responsible for justifying all of my methodology. I have provided a handwritten derivation of the law of the conservation of energy showing how I determined the formula for the speed at impact.

Energy is conserved. Therefore, the potential energy of an object at 36 inches equals the kinetic energy at the time that it strikes the ground. That's essentially what this derivation is showing, therefore the speed of impact equals the square root of two times gravity times the height of the fall. That is a standard physics calculation. I have provided the derivation for any scrutiny.”
(TR, Daubert Hearing, 02/11/2016, p. 19, lines 20-25, p. 20, line 1-7).

Dr. Rundell testified that he ranged the speed of the fall at the time of impact at 9.5 miles per hour to 10.9 miles per hour, as follows:

“The next slide indicates the actual numbers that were fed in just to show what the speed of impact would be at anywhere between 36 and 48 inches. Now 36 inches is the height of the counter. However, for someone seated on the counter, that height would be greater than 36 inches, the total fall height. So I ranged the speed between 9.5 miles per hour and 10.9 miles per hour at the time of impact.”

(TR, Daubert Hearing, 02/11/2016, p. 20, lines 9-16).

Dr. Rundell then pointed to an excerpt from a study that was performed at the University of Pennsylvania, Children’s Hospital of Philadelphia involving the use of anthropometric infants, dummies, shaped and weighted to be a 12-month old dummy, dropped from various heights onto various surfaces as follows:

“The next slide is an excerpt from a study that was performed at the University of Pennsylvania, I think in -- yeah, with the Children's Hospital of Philadelphia. This particular study used anthropometric infants, dummies that are shaped and weighted to be a 12-month old dummy, and dropped from various heights onto various surfaces, carpet, foam and concrete specifically.”

(TR, Daubert Hearing, 02/11/2016, p. 20, lines 17-23).

With respect to the application of the study performed at Children’s Hospital of Philadelphia, to the instant case, Dr. Rundell testified as follows:

“So, the duration of impact is what we pulled -- what I pulled from this particular study which shows that for a head striking either carpet or concrete you have a

duration of impact of somewhere around five milliseconds. So the impact time is very short.

So ΔV over ΔT is how we get the acceleration.

Force equals mass times acceleration. So in order to get the mass of Mayliah's head I referenced the 12-month old, it's called CRABI, C-R-A-B-I dummy, as a starting point for the head weight. That's what you see on this slide here as far as the head weight for a 12-month old that weighs 22 pounds, so two pounds off from Mayliah's weight, according to the autopsy report. And I also referenced a peer-reviewed generally accepted study where they gave a ratio of head to body weight head masses to come up with a range of approximately five pounds for the weight of her head. And again, the slide after that is an excerpt from the autopsy report showing her documented weight.”

(TR, Daubert Hearing, 02/11/2016, p. 21, lines 7-25).

Notably, Dr. Rundell testified that he referenced a “**peer-reviewed generally accepted study where they have a ratio of head to body weight head masses to come up with a range of approximately five pounds for the weight of her head.**” Dr. Rundell then pointed to the next slide in Exhibit 1 which was essentially “an excerpt from the autopsy report” showing the documented weight of Maliyah Tankersley. Dr. Rundell further testified about his calculation of the force associated with the impact between the head and the ground. (TR, Daubert Hearing, 02/11/2016, p. 22). The next slide in Exhibit one showed that there was enough force in a fall from 36 to 48 inches for an adult skull to fracture with a fall from 36 to 48 inches. (Id., p. 22). Likewise, the next slide in Exhibit 1 showed another study where “they dropped adult skulls at speeds of approximately ten

miles per hour and actually documented multiple areas of fracture in the skull, so multiple lines of fracture at impact speeds around ten - - anywhere from 8.3 to 12.2 miles per hour for adult skulls.” (Id., p. 22). Dr. Rundell testified about a slide in Exhibit 1 which showed that “impacts to the back of the head specifically resulted in basilar skull fractures that in many cases connected through the cranial fossa and the area where the spinal cord connects to the brain.” (Id., p. 22).

DR. RUNDELL RELIED ON STUDIES USING CADAVERIC INFANTS

Additionally, Dr. Rundell pointed to the slide contained in Exhibit 1, specific to skull fractures in infants, where they performed drop “**tests using cadaveric infants from a fall height of 82 centimeters which is less than what we have in the subject incident and basically documented**” cadaveric fractures in all of the tested specimens. (Emphasis added). (TR, Daubert hearing, 02/11/2016, pp. 22, line 25, p. 23, lines 1-6). Dr. Rundell pointed out the fact that the next slide showed some of the “fracture patterns either being single lines of fracture or multiple lines of fracture for the infant skulls that were struck.” (Id., p. 23, lines 7-10). Finally as to Exhibit 1, Dr. Rundell testified that the last slide which depicted data from elite level boxing showing. Based on his calculations shown, a punch would actually result in le force than a fall from 36 to 48 inches.” (TR, Daubert Hearing, 02/11/2016, p. 23).

DIMAMBRO

The defense also argued *People v Dimambro*, Michigan Court of Appeals Docket number 323251, Lower Court (Macomb Circuit court) case number 2013-004215-FC (May 22, 2015). In *Dimambro* this court granted the defense Motion to Remand so that

the Defendant-Appellant could file a Motion for a New Trial. In *Dimambro*, a Ginther Hearing was held after the case was remanded by the Michigan Court of Appeals. The central issue was defense counsel's failure to investigate then use of experts to support the defendant's defense of accident. In *Dimambro* the defendant attached an affidavit from the Oakland County Medical Examiner, Dr. Dragovic, and a declaration from Dr. Chris A. Van Ee, a biomechanical engineer specializing in pediatric head injury. As he did in the case *sub judice* involving his analysis of the Baby Tankersley autopsy photographs, Dr. Dragovic in the *Dimambro* case indicated that the autopsy did not go far enough to ascertain how old the brain injuries were. Additionally, Dr. Dragovic stated that the doctors "failed to correlate the set circumstances that they believed produced the blunt force head trauma with the injury depicted in the autopsy. Dr. Dragovic believed that the doctors "bridged the gap of unknown by opinion that the manner of the toddler's death was homicide." Dr. Dragovic further concluded in *Dimambro* that the child's head injury was accidentally caused by his fall from a bar stool onto ceramic tile a day before his hospitalization. *Di Mambro*.

In *Dimambro*, the trial court noted in its opinion that "Dr. Van Ee's findings also supported the possibility that a short fall with the wrong combination of fall dynamics could accidentally cause a fatal head trauma in a toddler." The court noted that Dr. Van Ee "further opined that Dr. Angelilli lacked the expertise to testify Damian's fall from the bar stool could not have cause his fatal injuries." See *People v Ronald Anthony Di Mambro Jr, Macomb case number 2013-4215-FC, dated January 11, 2016*. See also the Supplemental Affidavit of Dr. Rundell regarding his consultation with Chris Van Ee.

The facts of *Dimambro* which necessitated the defense employment of Dr. Dragovic as the forensic pathologist and Dr. Van Ee, as the biomechanical engineer strikingly similar to those necessitating both Dr. Dragovic and Dr. Steve Rundell, a biomechanical engineer. See *People v Ronald Anthony Di Mambro Jr, Macomb case number 2013-4215-FC, dated January 11, 2016.*

In re YARBROUGH & MATHEWS V. ELRIDGE

In *In re Yarbrough (for publication January 19, 2016, Court of Appeals Docket 326170 and 326171)*, the Department of Human Services had filed a petition alleging that one or both parents had abused their 5-month old son. The respondent parents denied hurting their child and requested funding from the court to consult a medical expert regarding the alternate causes for his injury. The circuit court rejected the parents' request, ruling that the respondents *had not established a reasonable probability that an expert would assist their defense.* The issue in that case was whether the decision denied the respondents due process of law. Even though *Yarbrough* arose in the context of a case for terminating parental rights, the issue of that an expert's assistance in the defense is substantially similar to the issue of the court's erroneous preclusion of the testimony of Dr. Steve Rundell in the *case sub judice.* In *Yarbrough*, a Children's Hospital radiologist concluded that the St. John MRI revealed an "infra and supratentorial bilateral subdural hematoma" suggestive of prior trauma, among other things. A Children's Hospital ophthalmologist examined the child in *Yarbrough* and reported the child had bilateral retinal hemorrhages. The physicians at Children's Hospital concluded that the child was "a severely injured baby with subdural hemorrhages, bilateral retinal hemorrhages, skull fracture from abusive trauma." The court in *Yarbrough* vacated the order terminating

parental rights and remanded the case to the trial court holding that the proper inquiry weighed the interest at stake under *the due process* framework established in *Mathews v Elridge*, 424 US 319, 335; 96 S Ct 893; 47 L Ed 2d 18 (1976). Similarly, in the instant case the right to present the expert testimony of Dr. Steven Rundell falls both under Due Process and the Six Amendment of the United States Constitution. *Mathews v Elridge supra*. *Yarbrough supra*. The courts in *Yarbrough supra* cited its reliance on *Mathews v Elridge supra* and pointed to the fact that *Elridge* relied on *Ake v Oklahoma*, 470 US 68, 77; 105 S Ct 1087; 84 L Ed2d 53 (1985), a case from the United States Supreme Court involving criminal law.

AKE v OKLAHOMA

In *Ake v Oklahoma*, 470 US 68, 77; 105 S Ct 1087; 84 L Ed2d 53 (1985), the United States Supreme Court declared, “a criminal trial is fundamentally unfair if the State proceeds against an indigent defendant without making certain that he has access to the raw materials integral to building of an effective defense.” *Ake v Oklahoma*, at 76. In *Ake*, the “basic tool” referred to was the assistance of a consulting psychiatrist. In footnote 11, of *Yarbrough*, the Michigan Court of Appeals indicated that a number of courts have applied *Ake*’s reasoning to a defendant’s request for expert assistance in areas other than psychiatry. See *Giannelli, Ake v Oklahoma: The Right to Expert Assistance in a Post-Daubert, Post-DNA World*, 89 Cornell L Rev 1305, 1367-1368 (2004) and *Moore v State*, 390 Md 343, 409 n 12; 889 A2d 325 (2005)(“The majority of courts have concluded that *Ake* extends beyond psychiatric experts.”)

TRIAL COURT WAS UNFAMILIAR WITH THE RECORD

It is the defense contention, inter alia, that the court revealed through its own admissions that it was completely unfamiliar with the record of the case which included several volumes of trial testimony of medical experts and a videotaped interrogation. The court in rendering its decision did not acknowledge that it looked at the video. The contents of the video were never transcribed. Rather during the prior trial, the redacted videotape. This redacted videotaped interview was played to the jury in the trial which commenced on October 19, 2015. It is the defense's contention that the basis for the defense of accident was included in Sierra Tankersley's responses during the videotaped interview. Following is an excerpt of the colloquy between defense counsel and the court during which the court eventually acknowledged its lack of familiarity with the case:

“THE COURT: Where did you get the concept that the child fell from a countertop?

THE WITNESS: From the interrogation video.

THE COURT: And who gave the interrogation video?

THE WITNESS: What do you mean?

THE COURT: Who was interviewed?

THE WITNESS: The defendant.

THE COURT: Well, how do you know if she was telling the truth?

THE WITNESS: I don't.

THE COURT: So the entire basis of your analysis -- what's the matter now?

MS. BARNWELL: We'll make a record.

THE WITNESS: Well, be my guest, make your record.

MS. BARNWELL: *The witness is not here to accept -- the witness is here to show that it's plausible. It's a part of our defense. She was interviewed by the police, she made a statement, he's our witness and he's assuming what she said, therefore --*

THE COURT: Okay. Sit down and now I'll tell you why I asked the question. I know nothing about the case. I knew nothing about a countertop. I knew nothing about a fall by the child from the countertop, that's why I asked the question.

MS. BARNWELL: It's an extensive interview, your Honor and --

THE COURT: What difference does that make?

MS. BARNWELL: But the witness is here -- the witness is here to opine as to whether it is possible, which he said from a biomechanical standpoint, doing all the tests, doing all the tests, looking at all the studies together that yes it is.

THE COURT: How would I know --

MS. BARNWELL: Regardless.

THE COURT: How would I know that the defense's theory was that the child fell from a 36-inch high countertop; how would I know that?

MS. BARNWELL: You know, your Honor, I do believe that the Judge who accepts the case to continue on in the second trial should be familiar with the record. There have been many transcripts that have been produced.

THE COURT: So you're not going to answer my question.

MS. BARNWELL: That's how you would know, by looking at the transcripts, by looking at the exhibits that were admitted, in some way to familiarize yourself with the record.

THE COURT: Candidly, I got the case yesterday --

MS. BARNWELL: Okay, thank you, your Honor.

THE COURT: -- after a trial that lasted, by your rendition to me, several days; isn't that true?

MS. BARNWELL: That is true, your Honor.

THE COURT: *Well, no, I didn't look at the transcript. I looked at -- I happened to have read Dr. Dragovic's testimony and that's as far as I got.*

MS. BARNWELL: Thank you, your Honor.

THE COURT: So in order to evaluate this case, you accepted the fact that the child was on a countertop, true?

THE WITNESS: I accepted that in terms of performing my analysis.”

(TR, Daubert Hearing, 02/11/2016, p. 52, lines 2-25, p. 53, lines 1-15).

In granting the prosecutor’s motion, the trial court erroneously relied on the Michigan Supreme Court’s recent opinion in *Elher v Misra*, ___ Mich ___; ___ NW2d ___ (2016) (Docket No. 150824). In *Elher*, the plaintiff sued the doctor who removed her gallbladder. *Id.* at ___; slip op at 2. During the gallbladder removal surgery, the doctor had clipped the plaintiff’s common bile duct and plaintiff had to undergo emergency surgery. *Id.* at ___; slip op at 3. Plaintiff had signed a consent form that specifically mentioned a risk of injury to the common bile duct. *Id.*

Plaintiff sued for medical malpractice. *Elher* at ___; slip op at 3. As part of the suit, Plaintiff retained Priebe, a board certified general surgeon and professor, as her sole standard of care expert. *Id.* Priebe was deposed. *Id.* At the deposition, Priebe testified that, in his opinion, it was always malpractice to injure the common bile duct during gallbladder removal, absent inflammation or scarring. *Id.* He considered plaintiff’s injury to be a breach of the standard of care, but did not provide any supporting authority for his opinion. *Id.* *Priebe* admitted there was no authority supporting his opinion regarding the standard of care, he was not aware of anyone who agreed with his opinion, and he could not cite any medical literature supporting his beliefs. *Id.* at ___; slip op at 6.

Elher is readily distinguishable from the case at bar. Firstly, *Elher* is a civil case and the standard of review for the circuit court’s decision to preclude Priebe from testifying was abuse of discretion. This is *not* a civil case. This is a capital criminal case. The defendant is on trial for her life. The trial court’s preclusion of Dr. Rundell deprives Ms.

Tankersley of her federal and state constitutional rights to present and defense and to call witnesses in her favor. The standard of review is not abuse of discretion. This is a preserved constitutional issue and the standard of review is de novo.

Also, because *Elher* was a civil medical malpractice case, the Court considered *MCL 600.2955* in its decision. *Elher at ___; slip op at 5. MCL 600.2955* governs civil actions, not criminal ones.

600.2955 Scientific or expert opinion or evidence; admissibility.

Sec. 2955.

(1) In an action for the death of a person or for injury to a person or property, a scientific opinion rendered by an otherwise qualified expert is not admissible unless the court determines that the opinion is reliable and will assist the trier of fact. In making that determination, the court shall examine the opinion and the basis for the opinion, which basis includes the facts, technique, methodology, and reasoning relied on by the expert, and shall consider all of the following factors:

(a) Whether the opinion and its basis have been subjected to scientific testing and replication.

The court in the case judge not only was completely unfamiliar with the record, but also relied on a totally inapposite case, *Elher*. Indisputably, Dr. Rundell's testimony was thorough. Not only did he testify, but he produced the materials, scientific literature and data he relied upon in reaching his conclusion as to the plausibility of the decedent's accidental fall from the kitchen counter. The trial court's decision precluding the testimony of biomechanical engineer, Dr. Rundell essentially deprived Sierra Tankersley of her defense in the instant case. See *Ake v Oklahoma*, 470 US 68, 77; 105 S Ct 1087; 84 L Ed 2d 53(1985). The United States Supreme Court declared in *Ake v Oklahoma* that "a criminal trial is fundamentally unfair if the state proceeds against an indigent defendant without making certain that he has access to the raw materials integral to the building of

an effective defense.” Notably, earlier on, Judge Roberson had denied Sierra Tankersley’s Motion to Appoint an Expert Biomechanical engineer at County expense. The defense was then able to secure the services of biomechanical engineer Steve Rundell, pro bono. The question of appointment of Dr. Rundell is not being appealed here even though the issue is preserved. However, the situation for Sierra Tankersley is substantially similar to the situation of the defendant in Ake. The court is depriving Sierra Tankersley of her defense contrary to the 6th and 14th amendments of the United States constitution. *Dimambro supra. In re Yarbrough supra. Elridge supra. US Const, Am VI and US Const, Am XIV.*

CONCLUSION AND RELIEF REQUESTED

WHEREFORE, Defendant-Appellant Sierra Tankersley, respectfully requests that this honorable court grant this Application for Leave to File Interlocutory Appeal, Stay the proceedings while the Application is pending in the Court of Appeals, and reverse the court’s order precluding the testimony of the biomechanical engineer, and remand the case to the trial court to allow for the testimony of the defense biomechanical engineer.

Respectfully submitted,

BY: /S/Wendy Barnwell
Wendy Barnwell(P42505)

Dated: February 16, 2016

**STATE OF MICHIGAN
IN THE COURT OF APPEALS**

**PEOPLE OF THE STATE OF MICHIGAN,
Plaintiff-Appellee**

**L.C (WAYNE) Case No. 2015-376-01-FC
DOCKET NO.**

v.
**SIERRA TANKERSLEY,
Defendant-Appellant**

_____/

**WENDY BARNWELL (P42505)
KATHY MURPHY (P51422)
Attorney for Defendant-Appellant
PO BOX 44107
Detroit, MI 48244
(313)333-3407**

_____ /

PROOF OF SERVICE

I, WENDY BARNWELL, Attorney-At-Law, P42505, do hereby swear and affirm that on February 16, 2016, I did send by electronic mail to the Wayne County Prosecuting Attorney Appeals Division, e-mail address through the True Filing system: **vsteer@waynecounty.com**. a copy of the following: **DEFENDANT-APPELLANT SIERRA TANKERSLEY APPLICATION FOR LEAVE TO FILE INTERLOCUTORY APPEAL AND BRIEF IN SUPPORT OF APPLICATION.**

Respectfully Submitted,

BY: /S/ Wendy Barnwell
Wendy Barnwell (P42505)