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STATE OF MICHIGAN
IN THE MICHIGAN SUPREME COURT

PEOPLE OF THE STATE OF MICHIGAN,
Plaintiff-Appellee,

-v-

MILTON LEE LEMONS,
Defendant-Appellant.

Supreme Court No. _____
Court of Appeals No. 348277
Trial Court No. 06-004818-01-FC

DEFENDANT-APPELLANT'S APPLICATION FOR LEAVE TO APPEAL

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JUDGMENT APPEALED FROM, GROUNDS FOR RELIEF, AND RELIEF SOUGHT

Defendant-Appellant Milton Lemons appeals from the November 18, 2021, unpublished Court of Appeals opinion affirming the trial court's denial of her[1] motion for relief from judgment from her felony murder conviction for allegedly causing her infant daughter's death by Shaken Baby Syndrome. *People v Lemons*, No. 348277 (Mich App Nov 18, 2021) (Appendix A). That opinion was issued after this Court remanded to the Court of Appeals for consideration on leave granted. *People v Lemons*, 505 Mich 1084; 943 NW2d 139 (2020). This Court should either grant leave to appeal or summarily reverse the Court of Appeals opinion and remand for a new trial.

The Court of Appeals opinion below involves legal principles of major significance to the state's jurisprudence. MCR 7.305(B)(3). The decision below is also clearly erroneous and will cause a material injustice, MCR 7.305(B)(5)(a), because Ms. Lemons presented significant newly-discovered evidence that she is actually innocent, yet the Court of Appeals affirmed the denial of her motion for relief from judgment.

Ms. Lemons' conviction was upheld despite **the retraction of the Shaken Baby Syndrome (SBS) diagnosis by the only physician to testify for the prosecution at trial and new testimony from five eminently qualified experts** that confirmed that the child likely died from choking on formula and called into question whether it is even possible to inflict the symptoms Nakita Lemons had through shaking. The Court of Appeals erred by relying heavily on an unrecorded statement made by Ms. Lemons, which the trial court only mentioned once in passing in its 25-page opinion denying relief, as if it somehow outweighed the retraction of the SBS diagnosis and all of the new medical evidence supporting Ms. Lemons' innocence. And the Court of Appeals erred even further by upholding the trial court's decision to exclude Ms. Lemon's

[1] Milton Lemons now identifies as female and will be referred to throughout this Application as "Ms. Lemons." Pronouns referring to Ms. Lemons will also reflect that change.

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eminently qualified expert in biomechanics on the patently unreasonable ground that the field of biomechanics is inherently flawed because it uses biofidelic dummies instead of real babies to determine the forces imparted by impacts and shaking.

The Court of Appeals opinion also merits review because it conflicts with decisions of this Court. MCR 7.205(B)(5)(b). First, contrary to the approach this Court adopted in *People v Johnson*, 502 Mich 541; 918 NW2d 676 (2018), the Court of Appeals usurped the role of the factfinder in unilaterally determining that a statement from a grieving Ms. Lemons and circumstantial evidence of her behavior while frantically seeking help for her infant would outweigh the probative value of the new medical and scientific evidence on retrial. In fact, the retracted SBS diagnosis and the new experts both heavily undermine Ms. Lemons' purported confession by showing that the symptoms displayed by the child are consistent with choking on formula, not shaking. This newly discovered medical evidence easily creates a reasonable probability of a different outcome upon retrial, and thus warrants relief.

Second, the Court of Appeals' exclusion of biomechanical evidence is contrary to MRE 702 because it is relevant and reliable to model the forces of shaking in a human infant. *See, e.g.*, *People v Kowalski*, 492 Mich 106, 120; 821 NW2d 14 (2012). By excluding the newly discovered biomechanical evidence in this case, the Court of Appeals undermined this Court's ruling in *People v Ackley* because it prevents defendants from demonstrating the "prominent controversy within the medical community regarding the reliability of the SBS/AHT diagnoses." 497 Mich 381, 391-92; 870 NW2d 858 (2015).

Therefore, this court should grant leave to appeal or reverse the Court of Appeals' decision and remand for a new trial.

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STATEMENT OF JURISDICTION

This Court has jurisdiction over this application for leave to appeal pursuant to MCR 7.303(B)(1). This Application is timely under MCR 7.305(C)(2)(a) because it is filed within 56 days of November 18, 2021, the date of the Michigan Court of Appeals opinion affirming the denial of Ms. Lemons' motion for relief from judgment.

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STATEMENT OF QUESTIONS INVOLVED

I. Did Court Of Appeals Err In Holding That The New Evidence Presented By Ms. Lemons, Including The Retraction Of The State's Sole Expert Witness From Trial, Was Insufficient To Create A Reasonable Probability Of A Different Outcome And Warrant Relief Under *Cress*?

The Court of Appeals would answer, "No."

Ms. Lemons answers, "Yes."

II. Did The Court of Appeals Err In Holding That The Trial Court's Error In Refusing To Consider Ms. Lemons' *Strickland* Claim Was Harmless?

The Court of Appeals would answer, "No."

Ms. Lemons answers, "Yes."

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STATEMENT OF FACTS AND PROCEDURAL HISTORY

Introduction to the Case

In 2006, Ms. Lemons was convicted of first-degree murder for the death of her infant daughter, Nakita, based on the theory that Nakita had died of Shaken Baby Syndrome (SBS). In 2017, Dr. Bader Cassin, the only medical expert who provided diagnostic testimony for either side at Ms. Lemons' trial, **testified that he no longer stood by his SBS diagnosis** and that he would no longer declare the death to be homicide. Ms. Lemons presented five new expert witnesses at the 2017 evidentiary hearing who agreed with Dr. Cassin that SBS diagnoses are often unreliable, that his original SBS diagnosis was wrong, and/or that Nakita actually choked to death on formula.

The trial court denied relief in an opinion holding that this Court's unanimous decision in *People v Ackley*, 497 Mich 381; 870 NW2d 858 (2015), was not binding on the question of whether there is a substantial debate as to the reliability of SBS diagnoses. The trial court also rejected Dr. Cassin's changed opinion after treating it with the same skepticism accorded to lay recantations. The trial court went even further, holding that, contrary to *Ackley*, SBS diagnoses are so reliable that all of Ms. Lemons' highly qualified new experts would be excluded from testifying at a retrial under MRE 702. Trial Court Opinion, Appendix B.

The Court of Appeals agreed that the trial court abused its discretion in treating Dr. Cassin's retraction as if it were a lay recantation, and the Court of Appeals agreed that the trial court erred in disregarding the testimony of all but one of Ms. Lemons' new experts. Court of Appeals Opinion, Appendix A. Yet the Court of Appeals ruled that a new factfinder need not consider all of this new evidence because Ms. Lemons' statement to the police, which was extracted after she was confronted with Dr. Cassin's original diagnosis of SBS, trumped all of the scientific and medical evidence, even when that scientific and medical evidence strongly indicates that Nakita could not have died from shaking.

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A. Nakita Lemons' Multiple Health Complications, Emergency Hospitalization, and Death

Nakita Lemons was born on July 24, 2005, to Milton and Lori Lemons. TT 8/3/06 at 9. When she was one week old, Nakita experienced difficulty breathing shortly after being fed. *Id.* at 8. She began gasping and her face "started to turn colors." *Id.* Lori used a bulb syringe to clear her airway and nose, and Nakita started breathing normally. *Id.*

Nakita had "another one of her episodes" at around five weeks old. *Id.* at 10. Because this was the second time Nakita had visibly struggled with her breathing, her parents took her to a pediatrician. *Id.* at 9-10. Nakita improved for several weeks, but she began "acting fussy" again on October 8 and remained fussy up to October 10. TT 8/3/06 at 19, 33. On that day, Lori left Nakita and Milton Lemons, Jr. ("MJ"), the couple's 18-month old son, in Ms. Lemons' care. *Id.* at 17. Ms. Lemons put Nakita to bed after Lori's departure, though she could hear Nakita fussing while trying to sleep around 4:00 p.m. TT 8/7/06 at 61. At around 5:30 p.m., Ms. Lemons woke, fed, and burped Nakita, and then put her back down to sleep in her bedroom. *Id.*

MJ, who shared a room with Nakita, began banging on the wall shortly thereafter. *Id.* When Ms. Lemons reentered the bedroom, Nakita was struggling to breathe. *Id.* Frantic, Ms. Lemons rushed to the neighbor's home and pleaded for help. TT 8/3/06 at 100. The neighbor, Renee Zdyb, saw Ms. Lemons cradling Nakita as formula poured out of her mouth. *Id.*

Ms. Lemons immediately called Lori and Lori's mother, Pamela Van Meter, to tell them that Nakita had stopped breathing again. *Id.* at 100-01. Ms. Lemons had her neighbor Renee call 911, then placed Nakita on the couch and administered CPR. *Id.* at 101. Nakita continued to spit up formula from her mouth and nose, but she was otherwise unresponsive. *Id.* at 109.

Emergency responders soon arrived, moved Nakita to the floor, and continued to try and revive her through CPR. TT 8/3/06 at 63-65. By the time Lori arrived, Ms. Lemons was

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despondent, a "basket case," eventually leading to a full-blown emotional breakdown. *Id.* at 39.

Nakita was placed on advanced life support and transported by ambulance to Annapolis Hospital. *Id.* at 20. She was then "life-flighted" to the University of Michigan's C.S. Mott Children's Hospital, where Ms. Lemons again told medical personnel that such issues had occurred "twice before." *Id.* at 55. Nakita passed away the following morning. *Id.* at 20-21.

B. Death Investigation

Dr. Bader Cassin, a forensic pathologist, conducted Nakita's autopsy on October 11, 2005, the same morning she died. TT 8/7/06 at 5. Based on Dr. Cassin's findings, Nakita appeared well fed and well cared for and did not exhibit any external signs of trauma or abuse. *Id.* at 7-8. During his internal examination, however, Dr. Cassin found bleeding on the surfaces of the brain, swelling in the brain itself, and bleeding behind the eyes. *Id.* at 8-9. He concluded that these symptoms, alone, were consistent with Shaken Baby Syndrome. *Id.* at 8.

Given Dr. Cassin's preliminary findings, the police investigation quickly focused on Ms. Lemons, the last adult with Nakita before her fatal episode. On the evening of October 11, the same day her daughter died, Ms. Lemons was arrested and transported to the local police precinct. TT 8/7/06 at 56. The next morning, Ms. Lemons was interviewed by Sgt. Williams. *Id.* at 56-57.

During the interview, Ms. Lemons explained that Nakita had been fussy leading up to the fatal episode, and that after feeding her, Ms. Lemons burped her, put her down for a nap, and reentered the room to find her struggling to breathe. *Id.* at 61. Ms. Lemons described administering CPR, and she wondered if she had shaken Nakita too hard while trying to revive her. *Id.* at 62. Sgt. Williams stopped Ms. Lemons and informed her of the autopsy, suggesting that a different sequence of events occurred. *Id.* Ms. Lemons confronted with an apparently certain medical diagnosis, changed her account and stated that she shook Nakita three or four times because she could not get her to stop crying. *Id.* at 62-63. Based on this statement and Dr. Cassin's unequivocal

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conclusion of Shaken Baby Syndrome, Ms. Lemons was charged with first-degree murder.

C. Trial and Conviction

Ms. Lemons' bench trial began August 3, 2006. The prosecution called six witnesses (most of whom described the events leading up to Nakita's death), as well as Dr. Cassin and Sgt. Williams. Dr. Cassin testified about his autopsy findings. TT 8/7/06 at 8. He maintained his initial belief that only an external force could have caused Nakita's injuries. *Id.* at 15-16. Even without a subjacent skull fracture or any hemorrhaging to Nakita's neck or scalp, Dr. Cassin was firm in his SBS diagnosis. *See id.* at 36 (excluding such collateral injuries when describing "essential findings in shaking").

Ms. Lemons' trial counsel did not call a medical expert to support an alternative theory or to refute Dr. Cassin's definitive SBS diagnosis. Instead, trial counsel relied solely on cross-examining Dr. Cassin, and focused much of his cross-examination on whether SBS could occur unintentionally. *See* TT 8/7/06 at 34 (questioning whether shaking can be done "naively"); *see also id.* at 49. The factfinder was thus left with only one mechanism of death: Shaken Baby Syndrome.

The prosecution's other main witness, Sgt. Williams, testified about what Ms. Lemons had told him during his interrogation. Specifically, he testified that Ms. Lemons first said she had found Nakita unable to breathe properly after she was fed and put down for a nap, but that she later admitted to shaking her "three or four times" after being "confronted" with Dr. Cassin's determination that Nakita had died as a result of shaking. *Id.* at 61, 63.

The trial court deliberated for two days, TT 8/8/06 at 51, before finding Ms. Lemons guilty of first-degree murder. TT 8/11/06 at 11. The court emphasized Dr. Cassin's medical testimony in rejecting Ms. Lemons' primary defense of accident, finding instead that Nakita was shaken intentionally and repeatedly. *See id.* at 5 ("according to Dr. Cassin's testimony, the brain damage

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that was caused, the subdural hematoma, shaking of the brain, the severing of the nerve sheaths in the brain, is reflective of both [sic] a repeated shaking multiple times."). Ms. Lemons was sentenced to life without parole. ST 9/5/06 at 4.

D. Prior Appellate and Post-Conviction History

Ms. Lemons' appellate counsel raised two issues on direct appeal: (1) the trial court committed reversible error in denying a motion to quash the information because the prosecution failed to establish probable cause, and (2) the evidence at trial was insufficient to find Ms. Lemons guilty of felony murder. The Court of Appeals affirmed the conviction, *People v Lemons*, No. 273058 (Mich App Feb 26, 2008), and this Court denied leave to appeal. *People v Lemons*, 482 Mich 895, 895; 753 NW2d 169 (2008).

In 2010, Ms. Lemons filed a *pro se* motion for relief from judgment under MCR 6.500, which the trial court denied a few months later without a hearing. That motion did not raise the issues presented in the current motion.

E. The Current Motion and the Evidentiary Hearing

Ms. Lemons, represented by the Michigan Innocence Clinic, filed the instant motion for relief from judgment on March 18, 2016. The motion primarily argued, citing this Court's 2015 decision in *Ackley*, that the recognition that SBS diagnoses may be unreliable was new evidence that Ms. Lemons had not discovered at the time of her prior motion. The motion was supported by affidavits from several eminent physicians who concluded that Nakita likely died from natural causes. The motion argued, in the alternative, that if the challenges to the SBS diagnosis were available in 2006, then trial counsel was ineffective for failing to present an expert at trial.

The trial court granted an evidentiary hearing on the claim that the shift in scientific understanding of SBS diagnoses was new evidence but ruled erroneously that the ineffective assistance claim was procedurally barred under MCR 6.502(G) because the motion was

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successive. The evidentiary hearing was held on multiple dates in 2017.

1. Dr. Cassin Retracted His Prior SBS Diagnosis

At the evidentiary hearing in 2017, Dr. Cassin retracted his previous diagnosis of SBS and, therefore, his trial testimony. He testified that he had previously been taught that brain swelling, subdural bleeding, and retinal hemorrhages—which were called the "triad of findings at autopsy"—should, in the absence of another obvious cause of death, "evoke the diagnosis of shaken baby syndrome." EH 7/19/2017 at 26-27. Dr. Cassin was read a portion of a book chapter written by Dr. Jeffrey Jentzen, which stated that the triad "cannot be fully explained by any other medical entity." *Id.* at 29. He testified that this passage fairly reflected the near-universal view of pathologists at the time of Ms. Lemons' trial in 2006. *Id.* at 29.

However, since the time of trial, Dr. Cassin and other forensic pathologists have changed their view on the validity of SBS: "My thinking has changed, I think consistent with the community of forensic scientists around the world. That, first of all, the triad of findings is not . . . exclusively diagnostic of . . . what was called at the time, the Shaken Baby Syndrome" and that "the findings of the triad are explainable by diseases and other abnormalities . . ." *Id.* at 32. He testified that this change was based in part on challenges to the notion that the "forces necessary to produce the injuries that are described in this case . . . [can be] produced by shaking and only shaking . . ." *Id.* at 32. Dr. Cassin testified that the majority of forensic pathologists now agree that non-traumatic events can cause subdural hemorrhages and retinal hemorrhages. *Id.* at 46.

Dr. Cassin testified that he would now characterize Nakita Lemons' manner of death as "indeterminate, meaning it's unable to be determined." *Id.* at 33. He agreed that choking on formula, or an "aspiration event," was a plausible explanation for Nakita's death. *Id.* at 34.

Consistent with his trial testimony, Dr. Cassin testified that CPR was a possible cause of the alleged acromion fracture in the shoulder. *Id.* at 36. The fracture did not influence his

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conclusions at trial in 2016 nor did it affect his findings at the 2017 evidentiary hearing. *Id.* at 37.

Dr. Cassin testified that he could not recall whether he knew about Ms. Lemons' police interrogation at the time of trial, but that, in any event, it "does not contribute to my investigation of the death . . . it does not indicate anything with regard to the cause of death." *Id.* at 37. When asked why he agreed to testify in Ms. Lemons' favor at the evidentiary hearing, Dr. Cassin explained that he had made a mistake in his original diagnosis, and "I believe that I owe [the trial court] and you an explanation." *Id.* at 38.

2. New Defense Experts Challenged SBS And Testified To Other Causes of Death

In addition to Dr. Cassin's retraction, Ms. Lemons presented testimony from five medical and biomechanical experts at the evidentiary hearing:

- Dr. John Galaznik (a board certified pediatrician with extensive knowledge of the scientific literature on infant head injury);
- Dr. Patrick Barnes (a board certified pediatric radiologist and pediatric neuroradiologist for over 40 years, professor of radiology at Stanford University, and co-founder of the Northern California Child Abuse Task Force);
- Dr. George Nichols (a board certified pathologist who served for 20 years as the chief medical examiner for the State of Kentucky and has conducted over 5,000 autopsies in his career);
- Dr. Chris Van Ee (a Ph.D. biomechanical engineer with extensive experience researching head injuries and devising safety measures to prevent injury in collisions); and
- Dr. Roland Auer (a neuropathologist and brain researcher who has participated in thousands of autopsies and published over 100 peer-reviewed articles about brain neuropathology).

All were qualified as experts in their fields without objection. All of them testified *pro bono*. The testimony of the defense experts fell generally into two categories: (1) explaining the problems with the SBS diagnosis in general; and (2) offering an alternative explanation for Nakita's death.

As to the SBS diagnosis in general, the defense experts testified to the following:

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- The SBS "triad" of symptoms was once thought by many, including the defense experts themselves, to be caused exclusively by shaking. EH 4/19/17 at 22 ("It was almost a religious canon"); 4/20/17 at 24; 7/19/17 at 11.[2]

- More recently, significant controversy surrounding the SBS diagnosis has been fueled by a recognition that other diseases and processes can cause the triad of symptoms. EH 4/6/17 at 51, 54; 4/19/17 at 21, 29; 9/18/17 at 21-22.

- No biomechanical study has been able to establish that shaking alone (without impact) is capable of generating forces sufficient to cause the triad of symptoms. EH 4/6/17 at 45, 47, 54-55, 59, 118; EH 9/13/17 at 21, 29-32, 36, 39, 42, 69.

- However, shaking does generate forces sufficient to injure the highly vulnerable infant neck. EH 9/13/17 at 29-32, 36, 39 (shaking generates "forces in the neck that are at about the level of injury, but they are way below the levels that are associated with bridging vein failures and getting subdural hematomas.")

- The literature base allegedly supporting SBS is insufficient to establish that abusive shaking alone can cause the triad, or that shaking can be reliably distinguished from other causes. EH 4/6/17 at 56, 58, 61; 4/19/17 at 24; 9/18/17 at 31.

As to an alternative theory of death in this case, the experts offered the following opinions:

- There is ample evidence in the medical records indicating that Nakita choked on formula prior to her collapse. EH 4/6/17 at 62-63, 71; 4/19/17 at 33-34.

- Hypoxia-ischemia (lack of oxygen to the brain), brought on by a choking event, can explain each of the neurological symptoms in this case, and this pathway is well supported by the literature. EH 4/6/17 at 72-74, 111; EH 4/19/17 at 29, 33-34; 9/18/17 at 21-22.

- Given that the acromion was never physically inspected at autopsy, it is impossible to know if the acromion defect is indeed a fracture, rather than an anatomical variant. Even if it is a fracture, it is not possible to say it was caused by abuse. EH 4/6/17 at 78-79; 4/19/17 at 37-39; 4/20/17 at 52-56; 7/19/17 at 5

- There is no medical evidence from which to conclude that Nakita was shaken, and several findings contradict that diagnosis—including the lack of external injuries and the fact that there is no evidence of an injury to the neck or spinal cord. EH 4/6/17 at 62-63, 79; 4/19/17 at 25, 35, 36, 42.

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[2] *See also* American Academy of Pediatrics (2001), *Shaken Baby Syndrome: Rotational Cranial Injuries—Technical Report*, p. 206, "Although physical abuse in the past has been a diagnosis of exclusion, data regarding the nature and frequency of head trauma consistently support the need for a presumption of child abuse when a child younger than 1 year has suffered an intracranial injury."

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3. New Prosecution Experts

The prosecution called four new experts at the evidentiary hearing to defend the theory of abuse that Dr. Cassin, the only prosecution expert to testify at trial, now repudiates. These experts, like Ms. Lemons' experts, addressed the SBS controversy in general and this case in particular. As to the SBS controversy in general, the prosecution's new experts testified that:

- The SBS diagnosis is well accepted in the medical community. EH 7/20/17 at 62; 7/25/17 at 45; 7/26/17 at 30; 7/19/17 at 86. The controversy about SBS is illegitimate and is limited to defense attorneys and "denialists." EH 7/20/17 at 61; Defense Exh. 31, p. 13, 18.

- The concept of a diagnostic "triad" is a "straw man" invented to manufacture controversy. EH 7/25/17 at 25; Defense Exh. 31, p. 18. Neither the medical literature nor the pediatric and child abuse communities ever subscribed to a diagnostic triad. Defense Exh. 31, p. 18.

- Shaking alone can cause the injuries commonly described as the triad. EH 7/25/17 at 15-21; 9/11/17 at 33-34. Biomechanical research to the contrary is not convincing because it cannot completely simulate infant anatomy. EH 7/19/17 at 83; 7/25/17 at 32-34; 7/26/17 at 20-22.

As to the cause of death in this specific case, the new prosecution experts testified:

- Shaking alone was the cause of death in this case. EH 7/25/17 at 41-45; 7/26/17 at 64.

- The acromion fracture is unequivocal and highly specific for abuse. EH 7/20/17 at 16, 36, 38, 41.

- Hypoxia-ischemia, brought on by choking, does not explain the injuries. EH 7/25/17 at 40-41; 7/26/17 at 49-54.

The trial court denied Ms. Lemons' motion in a written opinion dated October 5, 2018 (Appendix B). Ms. Lemons filed an application for leave to appeal to the Court of Appeals on April 1, 2019. After the Court of Appeals denied that application, this Court remanded the case to the Court of Appeals on leave granted on May 27, 2020.

The Court of Appeals heard oral arguments on March 2, 2021. Following the death of Judge Tukel, a two-judge panel affirmed the denial of Ms. Lemon's motion in an opinion on November 18, 2021 (Appendix A). That opinion will be discussed in the Argument section below.

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ARGUMENT

I. The Court Of Appeals Erred In Holding That The New Evidence Presented By Ms. Lemons, Including The Retraction Of The Only Medical Evidence Presented At Trial And New Medical And Biomechanical Testimony Supporting The Defense, Did Not Warrant Relief.

Introduction

As explained in the sections that follow, there are two aspects to Ms. Lemons' newly-discovered evidence claim: (1) the only expert witness at trial supporting the original diagnosis of SBS has now retracted that diagnosis, and (2) five eminently qualified experts (four physicians and a biomechanical engineer) testified at the evidentiary hearing that the scientific evidence does not support a diagnosis of abuse. Whether viewed individually or cumulatively, both aspects of Ms. Lemons' claim create a reasonable probability of a different outcome and warrant a new trial.

The Court of Appeals erred by discounting the significance of both the retraction of the prosecution's sole medical expert from trial and the new expert testimony. The court also erred by unilaterally weighing that new evidence against the only remaining inculpatory evidence (a statement Ms. Lemons made after she was confronted with the prosecution's pathologist's original diagnosis). This function is reserved for the factfinder upon retrial: Given the retraction of the original diagnosis and the mountain of new scientific evidence in her favor, Ms. Lemons has satisfied the standard to obtain a new trial. *See People v Johnson*, 502 Mich 541, 571-79; 918 NW2d 676, 693 (2018) (new trial warranted where new evidence sufficiently undermined prosecution's case from trial).

The Court of Appeals agreed that the trial court abused its discretion in holding that all of Ms. Lemons' new expert testimony challenging SBS would be excluded under MRE 702. However, it then clearly erred in upholding the trial court's decision to disregard the biomechanical expert testimony (which concluded that shaking *could not* cause the injuries associated with SBS),

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upon the spurious belief that the field of biomechanics is unreliable because biomechanical engineers use dummies and animals to simulate the forces inflicted on humans.

But this is absurd reasoning: so many things in our everyday lives that are created to protect us from impact injuries (helmets, child-safety seats, seat belts, etc.) are regularly tested in the field of biomechanics through the use of dummies and animals. The Court of Appeals' conclusion excluding the biomechanical testimony here would also mean excluding relevant and routinely admitted biomechanics testimony in many kinds of cases, such as auto liability and consumer product tort litigation. Moreover, by excluding the biomechanical expert testimony in this case, the Court of Appeals would prevent Ms. Lemons from being able to fully explain why the SBS diagnosis is controversial, in direct contradiction with this Court's holding in *Ackley*.

Standard of Review

A defendant is entitled to relief from judgment on the basis of newly discovered evidence where: (1) the evidence itself, not merely its materiality, is newly discovered; (2) the newly discovered evidence is not cumulative; (3) the party could not, using reasonable diligence, have discovered and produced the evidence at trial; and (4) including the new evidence creates a reasonable probability of a different outcome upon retrial. *People v Cress*, 468 Mich 678, 692; 664 NW2d 174 (2003); *see also People v Tyner*, 497 Mich 1001; 861 NW2d 622 (2015).

A trial court's decision denying a new trial is reviewed for abuse of discretion. *Johnson*, 502 Mich at 564. Findings of fact supporting the ruling are reviewed for clear error. *Id.* Underlying questions of law are reviewed *de novo*. *People v Washington*, 468 Mich 667, 670–671; 664 NW2d 203 (2003).

A trial court abuses its discretion when it chooses an outcome that "falls outside the range of reasonable and principled outcomes." *Johnson*, 502 Mich at 564 (citation omitted). In reviewing a ruling on a motion for new trial, this Court "examine[s] the reasons given by the trial court. . . .

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Where the reasons given by the trial court are inadequate or not legally recognized, the trial court abused its discretion." *People v Leonard*, 224 Mich App 569, 580; 569 NW2d 663 (1997) (citation omitted). Where a trial court fails to apply the correct legal standard, it commits per se abuse of discretion. *See People v Duncan*, 494 Mich 713, 723; 835 NW2d 399 (2013); *People v Grissom*, 492 Mich 296, 321; 821 NW2d 50 (2012).

"Decisions concerning the admission of evidence often involve preliminary questions of law that are reviewed de novo. These preliminary questions of law include questions involving the interpretation of rules of evidence." *Duncan*, 494 Mich at 723; 835 NW2d 399 (2013). Courts also exercise de novo review of constitutional questions. *People v Shafier*, 483 Mich 205, 211; 768 NW2d 305 (2009).

A. The Court Of Appeals Agreed That The Trial Court Abused Its Discretion In Treating Dr. Cassin's Retraction As A Lay Recantation And In Excluding Ms. Lemons' Multiple Qualified Experts Who Supported A Non-Abusive Diagnosis; This Satisfies The *Cress* Standard And Warrants A New Trial Where A Jury Can Weigh All Of The Evidence, Old And New, To Decide Whether Ms. Lemons Is Guilty.

1. As The Court Of Appeals Correctly Found, The Trial Court Abused Its Discretion In Treating Dr. Cassin As A Lay Witness.

A defendant seeking a new trial on the basis of newly discovered evidence must show that the evidence creates a reasonable probability of a different outcome, when considered as a whole. *Johnson,* 502 Mich at 579. In analyzing Dr. Cassin's retraction of his trial testimony and his original diagnosis of SBS, the trial court determined that Dr. Cassin's "change in opinion does not cause this court to believe that a different result would be probable at a retrial." Trial Court Opinion at 13 (Appendix B). In coming to this conclusion, the trial court reasoned that "courts have viewed recanted testimony with skepticism...Although the present case does not involve the recantation of a civilian witness, the principle of skepticism toward recanted testimony still applies." *Id*. at 11. The trial court further asserted that the basis for Dr. Cassin's change in opinion was "vague" and

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claimed that he "could not cite any specific authority, scientific studies or scientific journals or developments that have caused him to change his opinion." *Id*. at 12. The trial court then declared that Dr. Cassin's change in opinion was "merely a speculative opinion." *Id*.

The Court of Appeals correctly held that the trial court's assertion that recantations are generally viewed with skepticism has "little application in this context." Court of Appeals Opinion at 9 (Appendix A). Dr. Cassin's "new testimony centers on his change of professional opinion… Dr. Cassin's change of opinion came about because of developments in scientific research." *Id.* The Court of Appeals also correctly held that Dr. Cassin's testimony was not "rendered unreasonably vague merely because he was unable to cite specific authority for his change of opinion." *Id*. Thus, the Court of Appeals correctly held that the trial court incorrectly viewed Dr. Cassin's testimony with the skepticism usually accorded to lay witness recantations and that the trial court erred in asserting Dr. Cassin's testimony was unreasonably vague.

However, the Court of Appeals then itself erred in holding that Dr. Cassin's new testimony would not create a reasonable probability of a different outcome on retrial. Dr. Cassin's retraction and new testimony are crucial. As the Court of Appeals stated, "**Dr. Cassin performed the autopsy, he was the only medical expert to testify at defendant's trial, and his original testimony regarding SBS was crucial to defendant's conviction.**" Court of Appeals Opinion at 10 (emphasis added). His retraction clearly satisfies the *Cress* standard because it negates the only expert testimony presented at the initial trial.

The Court of Appeals nevertheless concluded that the statement Ms. Lemons made to police outweighs Dr. Cassin's retraction. But Ms. Lemons' statement bore all the hallmarks of a false confession; upon retrial, the jury would hear multiple experts say that shaking could not have caused the symptoms that Nikita experienced, and there is a reasonable probability that the jury would acquit despite the statement. Even if the Court of Appeals believed that Ms. Lemons'

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statement would lead to her conviction at retrial, there can be little doubt that she has satisfied the standard for obtaining that retrial. *See Ackley*, 497 Mich at 397 (retrial warranted in SBS case even where the new evidence would not "have ensured the defendant's acquittal").

2. As The Court Of Appeals Correctly Found, The Trial Court Abused Its Discretion In Holding That All Of Ms. Lemons' Expert Shaken Baby Syndrome Witnesses Would Be Excluded Under MRE 702.

The Court of Appeals correctly found that the trial court abused its discretion in its "decision to exclude the defense experts' opinions regarding the validity of SBS diagnoses, reliance on the triad as a diagnostic tool, and the possibility of choking as an alternative cause of death." Court of Appeals Opinion at 9 (Appendix A).

MRE 702 governs the admissibility of expert testimony:

> 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.

The reliability of proposed expert testimony turns on several factors, including "whether the theory has been or can be tested, whether it has been published, and peer-reviewed, its level of general acceptance, and its rate of error if known." *Kowalski*, 492 Mich at 131 (citing *Daubert v Merrell Dow Pharmaceuticals*, 509 US 579, 593-594; 113 S Ct 2786 (1993)). As the Court of Appeals explained, "the proper role of the trial court is to filter out expert evidence that is unreliable, not to admit only evidence that is unassailable. The inquiry is not whether an expert's opinion is necessarily correct or universally accepted. The inquiry is into whether the opinion is rationally derived from a sound foundation." Court of Appeals Opinion at 6, (quoting *Chapin v A & L Parts, Inc*, 274 Mich App 122, 139; 732 NW2d 578 (2007) (opinion by Davis, J)). "An expert's opinion is admissible if it is based on the 'methods and procedures of science' rather than

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'subjective belief or unsupported speculation.'" *Id.* (citing *Daubert*, 509 US at 590).

Based on these standards, the Court of Appeals correctly found that the trial court abused its discretion by excluding Ms. Lemons' medical expert witnesses. The Court of Appeals explained that the trial court's reasoning for exclusion was troubling and that "**the [trial] court was attempting to assess which of the competing views regarding HIE (hypoxic-ischemic encephalopathy) was correct**." Court of Appeals Opinion at 8 (emphasis added) (Appendix A). The Court of Appeals went on to state that "the defense theory is…apparently disputed within the medical community, and the court should have focused on the reliability of the underlying scientific methods, rather than attempting to resolve the dispute." *Id.* (citing *People v Unger*, 278 Mich App 210, 217; 748 NW2d 272 (2008)).

The trial court, in excluding the testimony, emphasized a study that "revealed that less than 5% of the members of the medical community surveyed believed choking or hypoxic-ischemic encephalopathy caused subdural hemorrhages." Trial Court Opinion at 21 (Appendix B). The trial court stated that this survey result led to the conclusion that the defense's choking theory was not supported by "the vast majority of medical experts and represents an opinion not generally accepted in the medical community." *Id.* As the Court of Appeals correctly explained, however, "general acceptance of an opinion is but one factor in assessing reliability." Court of Appeals Opinion at 8.

The Court of Appeals correctly explained, "the mere fact that many or even most practitioners do not agree with these opinions does not make them automatically unreliable." *Id.* The other factors to be considered, as per *Daubert*, lead to the conclusion that the defense experts were reliable and that the trial court erred in excluding their testimony. *Daubert*, 509 US at 593-594. "The defense experts cited published articles, reports, and studies that supported their opinions." Court of Appeals Opinion at 7. The defense experts relied on "medical literature,

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general understanding of anatomical and physical processes, personal clinical experience, etc." to support their opinions on HIE. *Id.* at 8. Importantly, the Court of Appeals pointed out, the reliability of the defense's HIE theory is supported by factual evidence, "including Nakita's earlier history of apparent life-threatening events and witness statements about the formula in her mouth during resuscitative efforts." *Id.*

These considerations point towards the reliability of the defense expert testimony. The Court of Appeals stated that "there is a genuine dispute regarding SBS and the diagnostic significance of the triad, and it was not for the trial court to decide which view ought to be credited." *Id.* at 7. Thus, the trial court's "decision to exclude the defense experts' opinions regarding the validity of SBS diagnoses, reliance on the triad as a diagnostic tool, and the possibility of choking as an alternative cause of death" was an abuse of its discretion, as it was outside the range of reasonable outcomes. *Id*. at 9.

3. Despite Correctly Holding That The Trial Court Abused Its Discretion In Excluding The New Defense Experts And In Rejecting The Retraction Of Dr. Cassin's Original Diagnosis, The Court Of Appeals Usurped The Role Of The Jury At Retrial By Holding That Ms. Lemons' Statement And Her Panicked Behavior Would Outweigh New Expert Testimony On Retrial.

Even after the Court of Appeals acknowledged that the recantation of the only medical expert to testify for either side at trial was "obviously favorable to [Ms. Lemons]," and held that the defense's new medical experts should have been admitted, it committed clear error in concluding that the statement of a distraught and grieving Ms. Lemons negated the weight of the new evidence. Court of Appeals Opinion at 10 (Appendix A). Even if these things might lead a jury to convict upon retrial, there is nevertheless a reasonable probability, in light of the favorable new evidence, that the jury would acquit. Thus, the standard for a new trial is met.

Turning first to Ms. Lemons' statement, that statement does not warrant denying Ms.

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Lemons' claim for two reasons:

1) The statement was not the primary evidence against Ms. Lemons at trial; it was secondary to Dr. Cassin's now-retracted homicide diagnosis—**indeed, the trial court mentioned the statement only once, on the last page of its 25-page opinion denying relief**, Trial Court Opinion at 25 (Appendix B); and

2) The new medical evidence demonstrates that the statement was a false confession.

As to the first of these two reasons, Dr. Cassin's trial testimony was the main incriminating evidence against Ms. Lemons. In *Ackley*, this Court stated that "[i]n a SBS/AHT case such as this, where there is no victim who can provide an account, no eyewitness, no corroborative physical evidence, and no apparent motive to kill, the expert *is* the case." *Ackley*, 497 Mich. at 397 (internal citation omitted; emphasis in original). **That prosecution expert from trial has now retracted his diagnosis of SBS and agrees that Nikita's death could have resulted from an accidental cause (i.e. choking).** With this vital change in the expert testimony of the pathologist who examined Nakita, the prosecution's case from trial is so substantially undermined as to require a new trial, even if the confession is viewed as independent of the medical evidence.

But, **the confession is *not* independent of the medical evidence**. Rather, Ms. Lemons, who was distraught because her infant daughter had died a day earlier, confessed *only after* having learned of the supposedly conclusive medical evidence of shaking. TT 08/07/06 at 62 (Sgt. Williams testifying that, in response to Ms. Lemons' denials, he "confronted [Ms. Lemons] with the fact that . . . the autopsy showed that Nakita had died as a result of being shaken"). That tried-and-true interrogation technique—confronting a suspect with supposedly indisputable scientific evidence—has been recognized as a leading factor contributing to false confessions, especially in the SBS context. *E.g. People v Thomas*, 22 NY3d 629, 643; 8 NE3d 308 (2014) (vacating conviction upon concluding that parent's admissions in child death case were involuntary where

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they were induced by false presentation of supposed medical facts).

As the Seventh Circuit put it, using a supposedly incontrovertible medical diagnosis of SBS during interrogation "destroy[ed] the information required for a rational choice" and "forced on [the suspect] a premise that led inexorably to the conclusion that he must have been responsible for [the child]'s death." *Aleman v Village of Hanover Park*, 662 F3d 897, 906 (CA 7 2011). The Seventh Circuit explained, "[i]f a question has only two answers—*A* and *B*—and you tell respondent that the answer is not *A*, and he has no basis for doubting you, then he is compelled by logic to 'confess' that the answer is *B*." *Aleman*, 662 F3d at 907. Here, in response to her denials, the police told Ms. Lemons that the medical evidence proved she was lying. Ms. Lemons was "compelled by logic to 'confess'" that she must have shaken her daughter. *Aleman*, 662 F3d at 906-907. Since the evidence now shows that the interrogation was tainted by a highly questionable (and since retracted) medical diagnosis, the reliability of the resulting confession is tainted as well, just as it was in *Aleman*.

The Court of Appeals attempted to distinguish the facts in *Aleman* from the present case, stating that "by defendant's account, Nakita's health declined *after* the defendant shook her, whereas the baby in *Aleman* collapsed before the plaintiff shook him to elicit a response." Court of Appeals Opinion at 10 (Appendix A). In fact, Nakita's health had long been an issue, and she had episodes of difficulty breathing beginning when she was just one week old. TT 08/03/06 at 9. Indeed, Nakita had been unusually fussy in the days leading up to her death, a sign that she was feeling unwell. *Id*.

The court below also stated that, contrary to the facts in *Aleman*, here Ms. Lemons "was the first to question whether she shook Nakita too hard." Court of Appeals Opinion at 10. It is unclear why this distinction would matter: in either case, such a statement is not a confession, but rather just a reflection of the frantic self-inquiry that goes through the panicked mind of a parent

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whose child has just died.

Moreover, it is unclear from the existing evidence whether Ms. Lemons was actually first to bring up the issue of shaking, and no recording of Ms. Lemons' police interview exists.[3] TT 08/07/06 at 61-62. Finally, the Court of Appeals seemed to conclude that Ms. Lemons accepted the version of events in her confession too easily, whereas the defendant in *Aleman* "repeatedly expressed disbelief that he could have caused the baby's injuries." Court of Appeals Opinion at 10 (Appendix A). Again, with no recording of the original interrogation to turn to, we have only Ms. Lemons' short written statement and Sgt. Williams' testimony about the interview, neither of which cover this issue. The Court of Appeals was largely guessing, and it was improper for that court to draw conclusions about Ms. Lemons' demeanor or alleged lack of protest during the interrogation without record support.

Further, the new evidence from the 2017 evidentiary hearing demonstrates that the confession is unreliable because, as multiple expert witnesses testified at the hearing, there is (at the very least) substantial doubt that shaking can generate the forces necessary to cause the triad of symptoms. Ms. Lemons' experts all testified that new science and data show that shaking alone *cannot* produce the triad of symptoms once used to diagnose SBS without, at minimum, causing serious injury to the infant's neck. EH 09/13/17 at 28-43. On retrial, a jury would hear this new testimony and could, quite logically, conclude that Ms. Lemons' confession was a false one because it describes a mechanism of injury that has been disproven by science.

Finally, confessions extracted during police interrogations are not unassailable evidence.

[3] Sgt. Williams testified that, after giving her initial statement of events, Ms. Lemons worried that she shook Nakita too hard in her attempts to revive the baby after finding her in her room struggling to breathe. TT 08/07/06 at 61-62. Sgt. Williams did not directly state whether Ms. Lemons raised the idea of shaking on her own or if he raised it first in his questions, so the Court of Appeals erred in assuming that Ms. Lemons mentioned shaking unprompted.

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As the U.S. Supreme Court recently noted, a "frighteningly high percentage of people [can be induced to] confess to crimes they never committed." *JDB v. North Carolina*, 564 US 261, 269; 131 S Ct 2394; 180 L Ed 2d 310 (2011) (emphasis added; quotation marks and citation omitted).

Once again, the trial court paid appropriately little attention to the confession, mentioning it only once in its 25-page opinion. Trial Court Opinion at 25 (Appendix B). The Court of Appeals erred, in contradiction to the approach this Court endorsed in *Johnson*, in acting as if it were a jury and declaring that it viewed the statement as more persuasive than the retracted diagnosis and all of the new medical evidence. That decision must be made by a new jury, not the Court of Appeals.

4. The New Evidence That The Court Of Appeals Agreed Would Be Admissible Upon Retrial Clearly Satisfies The Standard For Materiality Under *Cress*.

Counsel for Ms. Lemons at a new trial, armed with the new medical evidence and several grounds to challenge the reliability of the confession, would be in a vastly different position than in the first trial. As this Court recognized in *Ackley*, a new ability to challenge the prosecution's medical evidence and present both sides of a medical controversy like SBS would also create new and much more powerful ways to challenge a purported confession. *See Ackley*, 497 Mich at 395 n.8. The factfinder would learn that the pathologist who conducted the only autopsy on Nakita Lemons now believes that an SBS diagnosis cannot be supported by the medical evidence and that a conclusion of death by accidental cause (such as choking) is entirely plausible. A jury should be given the opportunity to weigh all of the evidence here and reach its own conclusions about the weight of the confession in this new light. *See Matthews v Abramajtys*, 319 F3d 780, 790 (CA 6 2003) ("The actual resolution of the conflicting evidence, the credibility of witnesses, and the plausibility of competing explanations is exactly the task to be performed by a rational jury."); *Barker v Yukins*, 199 F3d 867, 874–75 (CA 6 1999) (Post-conviction court should not "stand in the place of the jury, weighing competing evidence and deciding that some evidence is more

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believable than others. Rather, it is for the jury . . . to decide. . . .")

In addition to the conclusive weight it mistakenly placed on Ms. Lemons' confession, the Court of Appeals also erred in relying heavily on other supposedly inculpatory evidence about Ms. Lemons' behavior as she frantically sought help for Nakita. Court of Appeals Opinion at 11 (Appendix A). Specifically, the Court of Appeals inferred from the original trial testimony a reluctance, on Ms. Lemons' part, to call 911, which it believed suggested a "consciousness of guilt." *Id*. Again, **this is an issue that the trial court assigned no weight or significance to in its opinion**, and rightfully so, because observations of a person's behavior during a traumatic event are not reliable indicators of guilt.

There are many ways in which a jury might interpret Ms. Lemons' behavior after Nakita lost consciousness. Ms. Lemons desperately sought help immediately upon realizing her daughter was unwell. She called her spouse, as she had done before when Nakita had difficulty breathing, and she also called her mother-in-law. TT 08/03/06 at 10, 51. Rather than inferring guilt from Ms. Lemons' actions, a jury could find that Ms. Lemons desperately tried to help Nakita. Moreover, Ms. Lemons' wife testified that when she arrived home Ms. Lemons broke into "full-blown tears" and "turned into a basket case," which is the reaction one would expect from a terrified parent watching her infant receive CPR from paramedics. TT 08/03/06 at 39.

Much like the present case, in *Ackley*,[4] "[t]he Court of Appeals cited the 'peculiar' nature of defendant's actions on the day of the incident as an indication of his guilt," including the defendant's "failure to seek help from his neighbors . . . and his decision to first go to his mother's house rather than the hospital." *Ackley*, 497 Mich at 395 n.8. The fact that in *Ackley* the Court of

[4] While *Ackley* was a *Strickland* case and this is a *Cress* case, the two legal standards have comparable materiality requirements, and this Court has often used *Strickland* cases to inform its discussions on *Cress* materiality. *See Johnson*, 502 Mich at 577 n.16.

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Appeals faulted the defendant for *not* having gone to his neighbors for help, but here the Court of Appeals faulted Ms. Lemons for having done exactly that, shows precisely how easily these behavioral cues can be interpreted in either direction. Ultimately, a jury at retrial should decide whether Ms. Lemons' behavior indicates anything more than a frantic parent's attempt to get help; it is improper for post-conviction courts to step in and usurp the jury's role. *Ackley*, 497 Mich at 395 n.8. *See also Abramajtys*, 319 F3d at 790 ("The actual resolution of the conflicting evidence, the credibility of witnesses, and the plausibility of competing explanations is exactly the task to be performed by a rational jury."); *Barker*, 199 F3d at 874–75 (Post-conviction court should not "stand in the place of the jury, weighing competing evidence and deciding that some evidence is more believable than others. Rather, it is for the jury . . . to decide. . . .").

And once again, Ms. Lemons' counsel on retrial will have the evolved science and new experts to provide the factfinder with "a different lens through which to view his client's behavior," and it is reasonably likely that with that new evidence, "those same 'peculiar' actions by the defendant might [] instead be[] perceived as the missteps of a panicked, but nonetheless innocent, caretaker." *Ackley*, 497 Mich at 395 n.8.

The Court of Appeals abused its discretion when it took on the role of factfinder, weighing evidence that a new jury should hear. Taken together, the new evidence of a retracted diagnosis from the only expert to testify at trial combined with new experts undermining the prosecution's trial theory and supporting a non-abusive diagnosis creates a reasonable probability of a different result upon retrial. The Court of Appeals erred in assigning so much weight to the confession and behavioral evidence as to hold that it would outweigh the now-undermined SBS diagnosis.

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B. The Court Of Appeals Also Erred By Upholding The Trial Court's Exclusion Of The Biomechanical Expert Testimony Because That Testimony Is Clearly Admissible Under MRE 702.

1. Dr. Chris Van Ee's Qualifications, Methods, and Conclusions Clearly Satisfied MRE 702.

"As long as the basic methodology and principles employed by an expert to reach a conclusion are sound and create a trustworthy foundation for the conclusion reached, the expert testimony is admissible no matter how novel." *Nelson v Am Sterilizer Co*, 223 Mich App 485, 492; 566 NW2d 671 (1997) (citing *Daubert*, 509 US at 596).

At the evidentiary hearing, Dr. Chris Van Ee, a biomechanical engineer, testified for Ms. Lemons that shaking alone is likely not sufficient to produce brain swelling, subdural hematomas, and retinal hemorrhaging (the triad of SBS symptoms), without also causing a neck injury. EH 9/13/17, 28–29, 39. The Court of Appeals agreed with the trial court's decision to exclude Dr. Van Ee's testimony on the basis that the biomechanical evidence could not reliably be applied to SBS under *Joiner* because biomechanical studies use inanimate or animal models that "would not necessarily translate to human infant anatomy," rendering its application "too tenuous." Court of Appeals Opinion at 7 (Appendix A) (citing *Gen Elec Co v Joiner*, 522 US 136, 145–46; 118 S Ct 512, 518–19; 139 L Ed 2d 508 (1997)).

Under *Joiner*, evidence may be excluded if the trial court concludes that "there is simply too great an analytical gap between the data and the opinion proffered" because "nothing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the ipse dixit of the expert." *Joiner*, 522 US at 519. *See also Gilbert v Daimler Chrysler Corp.*, 470 Mich 749, 760; 685 NW2d 391 (2004) (excluding expert's testimony under *Joiner* because of a "yawning 'analytical gap' between the data and the opinion expressed by the expert." *Id.* at 782–83).

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However, Dr. Van Ee's testimony is not based on his "*ipse dixit*," nor is there a "yawning analytic gap" between the data and his conclusions. His testimony was based on a long history of scientific discovery in the field of biomechanics, backed up by multiple studies at major research institutions and studies about traffic and product safety conducted by the US government and major companies like General Motors. EH 9/13/17, 7–9, 16-17, 29–30, 47.

The trial court therefore abused its discretion when it excluded Dr. Van Ee's testimony: biomechanical studies can be reliably applied to SBS, so excluding the evidence falls "outside the range of principled outcomes." *Kowalski*, 492 Mich at 119.

The Court of Appeals erroneously upheld the exclusion of Dr. Van Ee's expert testimony on the ground that, as a biomechanics expert, he models the impact of forces on humans by relying on crash-test dummies and animals instead of human subjects. Court of Appeals Opinion at 7 (Appendix A). Such reasoning is absurd and would lead to the exclusion of most or all biomechanics testimony in all kinds of litigation.

Dr. Van Ee's conclusion that shaking alone is not sufficient to produce the triad of symptoms of SBS without a neck injury is based on decades of scientific studies about how the infant body responds to shaking. EH 9/13/17, 17, 28-29, 39. Biomechanical research into SBS grew out of research into transportation safety regulations in the late 1980s, using the same methods that are employed to study helmets and airbags. EH 9/13/17, 29. Some of the first experiments in the field were performed on monkeys when scientists tested the effects of angular acceleration on the brain by mimicking severe rear-end collisions on monkeys. Ommaya, Goldsmith, Thibault, "Biomechanics and Neuropathology of Adult and Paediatric Head Injury," *British Journal of Neurosurgery*, 2002 Jun; 16(3) 220-42 (2002). Ommaya and his co-authors found that higher accelerations were needed to cause injuries in smaller brains, and it was unlikely the speed and severity produced in the animal models could be produced by human shaking. *Id.*

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The Ommaya study produced results similar to those found by Duhaime et al. in 1987. Duhaime used models of 1-month-old infants with various neck and skull parameters, and they measured the accelerations caused by shaking and impacts. Duhaime, Gennarelli, Thibault, et al., "The Shaken Baby Syndrome: A Clinical, Pathological and Biomechanical Study," *Journal of Neurosurgery* (1987) pp. 411–13. None of the accelerations produced by shaking exceeded the range required for injury. *Id.* at 413–14.[5]

Dr. Van Ee himself conducted a study where he recreated a known, videotaped fatality of an infant with a crash-test dummy to study the accelerations caused in short falls, and he found that the data from the dummy was consistent with the injury criteria from the video. Van Ee, Raymond, Thibault, et al., "Child ATD Reconstruction of a Fatal Pediatric Fall," *Proceedings of the ASME 2009 International Mechanical Engineering Congress & Exposition* (2009), p. 5.

Many of the studies Dr. Van Ee cited were specifically concerned with the question that the Court of Appeals raised as to whether the studies reliably model the human infant, so they use a variety of methods to cross-check for accuracy. EH 9/13/17, 17; *see, e.g.,* Prange, Luck, Dibb, Van Ee, et al., "Mechanical Properties and Anthropometry of the Human Infant Head," *Stapp Car Crash Journal* (2004), pp. 12–14 (comparing infant crash-test dummies with infant cadavers to confirm reliability of data from dummies). Clinical findings are used to verify the types of injuries that are predicted by the studies in animal and inanimate models.[6] Computer models have been

[5] Other biomechanical studies have reached similar conclusions. *See, e.g.,* Prange, Coats, Duhaime, et al., "Anthropomorphic Simulations of Falls, Shakes, and Inflicted Impacts in Infants," *Journal of Neurosurgy* (2003) p. 145 (finding that shaking produced significantly lower angular acceleration than a 1-foot fall onto concrete or a carpeted pad, which would be insufficient to cause subdural hematoma in an infant); Jones, Martin, Williams, et al., "Development of a Computational Biomechanical Infant Model for the Investigation of Infant Head Injury by Shaking," *Medicine Science and the Law* (2015), pp. 296–97 (finding shaking does not produce forces exceeding injury threshhold).

[6] *See e.g.*, Duhaime, "The Shaken Baby Syndrome," at p. 409 (comparing results from the crash-test dummies to autopsy results in infants who died from head injuries).

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used to simulate the neck stiffness during simulated shakes in order to improve biofidelity in models. *See e.g.*, Jones, "Development of Computational Biomechanical Infant Model," *Medicine Science and the Law* (2015), at pp. 293–95.[7]

Dr. Van Ee's conclusions rely on the above experiments that demonstrate that shaking can be reliably modeled in infants. These studies show an appropriate nexus between the data and Dr. Van Ee's conclusions because the models reproduce consistent results that shaking alone does not produce sufficient force to cause the injuries associated with SBS, using different methodologies, and therefore, his conclusions should be admitted under *Joiner*. *Joiner*, 522 US at 518.

The trial court abused its discretion and the Court of Appeals erred by excluding Dr. Van Ee's testimony because his credentials and methodologies easily satisfy MRE 702. Dr. Van Ee earned his PhD in Mechanical Engineering from Duke University in 2000, where he studied the effects of impacts and accelerations in orthopedic biomechanics. EH 9/13/17, 5. While working on his PhD, he worked with the National Highway Traffic Safety Administration and General Motors, studying neck strength in airbag impacts, especially in relation to injuries in children and infants. EH 9/13/17, 7–8. After graduating, Dr. Van Ee researched impact biomechanics for automotive safety, specifically injuries to pregnant women and their fetuses, at the University of Michigan Transportation Research Institute. EH 9/13/17, 9. Currently, Dr. Van Ee is a consultant at Design Research Engineering, where he consults on questions of impact biomechanics and mechanical engineering. EH 9/13/17, 10. The prosecution and the trial court did not object to Dr. Van Ee's credentials at the evidentiary hearing. EH 9/13/17, 19.

Dr. Van Ee has published extensively on pediatric head injuries, including studies

[7] *See also* 19. Sabet, Christoforou, Zatlin, Genin, et al., "Deformation of the human brain induced by mild angular head acceleration," *Journal of Biomechanics* (2008), pp. 308–09 (validating computer models of brain movement using data collected by shaking adult volunteers and imaging their brains with an MRI to measure brain deformation.)

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comparing impacts and shaking in multiple papers and contributions to Jan Leestma's neuropathology textbook. EH 9/13/17, 12–14; He has used infant crash-test dummies to test infant car seats for Graeco, Even-flo, and Costco, and in his own research to simulate short falls in infants. EH 9/13/17, 12, *See e.g.*, Van Ee, "Child ATD Reconstruction," *supra.*

The methods that Dr. Van Ee based his conclusions on, such as using crash-test dummies and animal models to model injuries, have been applied for at least four decades to produce "testable results consistent with an objective, scientific process." *Kowalski*, 492 Mich at 133–34. As in *People v Unger*, Dr. Van Ee "'didn't use bizarre methods, he didn't use strange methods…he used standard methods…in coming to a conclusion," and so his credibility is "for the jury to decide." *People v Unger*, 278 Mich App 210, 220; 749 NW2d 272, 284 (2008).

The studies that Dr. Van Ee relied on for his conclusions were published and peer reviewed; used reliable principles and methods; had calculated error rates; had reproducible results; and used methods that were generally accepted in the scientific community. *Kowalski*, 492 Mich at 131 (citing *Daubert*, 509 US at 593–94). For example, Prange et al.'s paper, "Anthropomorphic Simulations of Falls, Shakes, and Inflicted Impacts in Infants" was published in the *Journal of Neurosurgery*, a peer reviewed publication, in 2003. Prange et al. calculated error bars for their results, and the results fwere consistent with previous studies. *Id.* at pp- 146147. Dr. Van Ee derived his conclusions from that and others, which all showed consistent results through a variety of methods: shaking alone does not generate sufficient force to pass the injury threshold for the triad of symptoms of SBS. *See e.g.*, Ommaya, "Biomechanics and Neuropathology of Adult and Paediatric Head Injury," *supra*.

Because Dr. Van Ee's testimony was based on standard and reliable methods and his knowledge as a qualified expert in his field, his testimony should be admitted, and the weight given to his testimony is for a jury to decide. *Unger*, 278 Mich App at 220.

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In *Unger*, repeated admission of an expert witness weighed in favor of his admission. 278 Mich App at 219. As Dr. Van Ee explained during the evidentiary hearing, he has testified in court over 70 times, and his testimony has never been excluded. EH 9/13/17, 17–18. Dr. Van Ee has testified in over 40 cases where shaking was mentioned in an infant's medical records and in 15-25 cases where shaking an infant was mentioned in court. EH 9/13/17, 17–18; *see, e.g.*, *People v Campbell*, unpublished opinion of the Court of Appeals, issued January 27, 2005 (Docket No. 245263).[8] (Appendix C). *See also Tate v State*, 136 So3d 624, 626–27 (Fla App 2013); *People v Sanchez*, 49 Cal App 5th 961, 973; 263 Cal Rptr 3d 510 (2020); Havard v State, 312 So3d 326, 330–35 (Miss 2020).

2. The Court Of Appeals' Reasoning Would Exclude Biomechanics Testimony From All Kinds Of Cases, Such As Automotive Litigation.

As the Court of Appeals correctly stated, there is no ethical way to test SBS theories on a living infant. Court of Appeals Opinion at 7. But this is hardly an unusual or insurmountable issue. One also cannot test the crash safety of a car by having real humans repeatedly drive into walls at 70 miles per hour. Biofidelic dummies (i.e. those that are designed by experts to closely match human biology) are used in both instances. **This Court obviously would not exclude as unscientific crash tests conducted by the National Highway Traffic Safety Administration (NHTSA) or the Insurance Institute for Highway Safety (IIHS) simply because crash-test dummies were used instead of real humans.** The result that the courts below reached here is no less absurd.

Biomechanical evidence has been admissible in a range of other cases from products liability to automobile cases. Biomechanics is used by the federal government, particularly by the

[8] *Campbell* is unpublished, and it is not cited here for any proposition of law but simply to demonstrate that Dr. Van Ee has been admitted to testify in Michigan courts. *See* MCR 7.215(C).

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Department of Transportation and the Consumer Product Safety Commission, to develop safety standards for many consumer products, including children's car seats and playground equipment. EH 9/13/17, 14. Additionally, biomechanics is used by private industry to test the safety of its products. EH 9/13/17, 12. Although biomechanical modeling using crash-test dummies does not provide an exact replica of human injuries, it would be truly startling for a judge in, for example, an automobile liability case to exclude all such science under *Daubert*. Suffice it to say that there is absolutely no precedent for doing so, but that is exactly what the Court of Appeals did here.

In Michigan, the Court of Appeals admitted expert biomechanics testimony in *Lopez v GMC*, a product liability action alleging that the plaintiff sustained injuries in a car crash because her seat belt failed on impact. 224 Mich App 618, 621; 569 NW2d 861 (1997). In *Lopez*, the defense's biomechanics expert was admitted to testify that the seat belt functioned properly based on the results of tests with crash-test dummies. *Id.* at 623.

Biomechanics expert testimony has also been admitted in other types of cases. In *Kelham v CSX Transportation Inc*, a personal injury case, a biomechanical engineer testified about how a train conductor would have fallen during a collision, contradicting the conductor's testimony. 840 F3d 469, 471 (CA 7 2016). In *Berner v Carnival Corp*, biomechanics testimony was admitted to show that the force of the plaintiff's contact with the floor after being assaulted was sufficient to cause a brain injury. 632 F Supp 2d 1208, 1210 (SD Fla 2009). In *Ensley v Costco Wholesale Corporation*, a biomechanical expert was admitted in a products liability case to testify that the only plausible scenario was that the ladder broke and then the plaintiff fell, causing her injuries. 1 Wash App 2d 852, 854–55; 407 P3d 373, 374 (2017).

Clearly then, biomechanical testimony that provides relevant answers through testing on biofidelic dummies is admissible. The opposing party is welcome to challenge any specific shortcomings of the testing on cross-examination, but to exclude biomechanical studies entirely,

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as the courts below did here, is obviously an abuse of discretion.

3. Exclusion Of Biomechanical Evidence Under *Daubert* Is Contrary To *Ackley*, Which Discussed The Need For Both Sides In An SBS Case To Be Able To Present Scientific Evidence.

In *Ackley*, this Court stressed the importance of defense counsel consulting experts in order to present the "prominent controversy within the medical community regarding the reliability of SBS/AHT diagnoses." 491 Mich at 391-92. This Court explained that defense counsel's duty to make reasonable investigations is heightened in SBS cases, which involve "such substantial contradiction in a given area of expertise[.]" *Id.* at 392. In cases involving SBS diagnoses, this Court also called upon attorneys to "assess the reliability of the diagnoses under the standards of evidence-based medicine." *Id.* (citing Findley et al., *Shaken Baby Syndrome, Abusive Head Trauma, and Actual Innocence: Getting It Right*, 12 Hous J. Health L. & Policy 209, 212 (2012)).

Dr. Van Ee's testimony is essential to examining the prosecution's diagnosis of SBS through the lens of "evidence-based medicine." As Dr. Van Ee testified, without the biomechanical evidence, there is no way for doctors to determine if shaking actually caused an infant's injuries because doctors do not have the ability to go back and reconstruct the accident and understand the forces at work. EH 9/13/17, 24–25.

While *Ackley* does not hold that every defense expert must be admitted in an SBS case, as the previous section makes clear, biomechanical testimony of the sort Dr. Van Ee gave here is sufficiently reliable to be admitted under MRE 702. Biomechanics testimony based on crash-test dummies and animal testing is routinely admitted in civil and criminal cases, and that testimony is backed up by more than 40 years of scientific knowledge and discovery. The unreasonable exclusion of such testimony by the courts below undermines *Ackley* because it excludes reliable evidence that is critical to explaining the scientific controversy surrounding SBS to a jury.

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4. Dr. Van Ee's Testimony Would Create A Reasonable Probability Of A Different Outcome Because It Shows That Shaking Cannot Generate Enough Force To Cause The Injuries Diagnostic Of SBS Without Injuring The Neck, And Nakita Did Not Have A Neck Injury.

At the 2017 evidentiary hearing, Dr. Van Ee—the only biomechanical engineer who testified for either side—testified that the existing scientific evidence does not support the claim that shaking can produce the triad of symptoms, at least not without causing serious injury to the neck. EH 9/13/17 at 28–43. Dr. Cassin cited biomechanical evidence as particularly important to the change in his opinion he reached in this case. EH 7/19/17 at 32. Even Dr. Christian, one of the prosecution's new witnesses at the evidentiary hearing, acknowledged that she had admitted in multiple publications that there is substantial controversy about whether shaking alone can cause the triad of symptoms. EH 09/11/17 at 31, 36.

Because there is grave doubt in the biomechanical community as to whether shaking can cause the triad of symptoms that Dr. Cassin observed in Nakita, then there must be grave doubt as to whether Ms. Lemons' confession is true. Just as the Court would question the validity of a confession to stabbing when there are no stab wounds, the confession here describes a mechanism—shaking—that many experts, including the pathologist who performed the autopsy in this case, now believe is scientifically insupportable as a cause for the particular symptoms Nakita had.

In sum, although the Court of Appeals correctly held that the trial court abused its discretion in discounting Dr. Cassin's retraction and in excluding on *Daubert* grounds the testimony of Ms. Lemon's medical experts, the Court of Appeals still erred in excluding expert biomechanics testimony that showed that shaking could not have caused Nakita's symptoms. That biomechanics testimony, standing alone, would make a different result reasonably probable.

But given Dr. Cassin's retraction and all of the other new evidence described above, the

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new evidence, considered together, easily creates a reasonable probability of a different outcome. The Court of Appeals erred in giving preclusive weight to Ms. Lemons' statement to deny a new trial because this Court in *Johnson* made clear that it is for a new jury, not a post-conviction court to weigh credible new evidence and decide whether the defendant is guilty. This Court should therefore grant leave to appeal or, alternatively, reverse and remand for a new trial.

II. The Court Of Appeals Correctly Decided That The Trial Court Erred In Not Considering The *Strickland* Issue, But The Court of Appeals Then Itself Erred In Deciding That The Trial Court's Error Was Harmless.

A. The Court Of Appeals Correctly Decided That The Trial Court Erred In Not Considering Ms. Lemons' *Strickland* Claim As Per MCR 6.502(G)(2).

The trial court refused to consider Ms. Lemons' in-the-alternative claim of ineffective assistance of counsel,[9] stating that "the *Swain* order by the Michigan Supreme Court does not permit this court to revisit or entertain a motion for relief from judgment based on a claim of ineffective assistance of counsel." Trial Court Opinion at 8 (Appendix B). In reviewing this decision, the Court of Appeals correctly held that the trial court should have considered Ms. Lemons' *Strickland* claim, explaining that MCR 6.502(G)(2) "carved out an exception to [the] general rule, permitting a successive motion for relief from judgment based on a retroactive change in the law or a claim of new evidence that was not discovered before the first motion." Court of Appeals Opinion at 11 (Appendix A) (citing *People v Swain*, 288 Mich App 609, 632; 794 NW2d 92 (2010) (internal quotation marks omitted)). The Court of Appeals clarified that the reference to new evidence in MCR 6.502(G)(2) is merely "a procedural threshold for determining whether a successive motion for relief from judgment is permitted," which is "entirely distinct from the

[9] Ms. Lemons has always maintained that her claim should result in relief under the *Cress* new evidence test. Her *Strickland* claim is pled in the alternative in the event that a court were to find that the evidence to effectively challenge the SBS theory was available to trial counsel in 2006.

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separate question of whether the defendant is entitled to relief." *Id.* at 12. The Court of Appeals thus correctly held that "the defendant's claim of ineffective assistance of counsel met the threshold for consideration because she argued that new evidence, i.e., expert testimony challenging the validity of SBS diagnoses, was not, yet should have been, discovered and presented by her trial counsel." *Id.*

B. The Court Of Appeals Then Erred In Deciding That The Trial Court's Decision Not To Consider Ms. Lemons' Strickland Claim Was Harmless.

While the Court of Appeals correctly decided that the trial court erred in not considering Ms. Lemons' *Strickland* claim, it erred in dismissing the issue as harmless error. To establish a claim of ineffective assistance of counsel, a defendant must show that "counsel's representation fell below an objective standard of reasonableness" and that "there is a reasonable probability that, but for counsel's unprofessional errors, the result of the proceeding would have been different." *Strickland v Washington*, 466 US 688, 694; 104 S Ct 2052; 80 L Ed 2d 674 (1984). "A reasonable probability is a probability sufficient to undermine confidence in the outcome." *Id*. at 694.

If the scientific evidence was reasonably available at the time of original trial in 2006 to rebut Dr. Cassin's (now retracted) conclusions that only shaking could explain Nakita's symptoms, then it follows that trial counsel was ineffective in failing to obtain that expert assistance. *See Ackley*, 497 Mich at 394. Because no such expert assistance was obtained and trial counsel's strategy conceded that SBS occurred and instead focused on cross-examining Dr. Cassin as to whether SBS could happen out of naivete, the factfinder had no reason to doubt Dr. Cassin's finding that Nakita was a victim of abuse.

For all of the reasons explained in Argument I, the failure to rebut Dr. Cassin's position at the time of trial was certainly not harmless. Expert assistance, such as that offered by Dr. Nichols, Dr. Barnes, and Dr. Galaznik, would have demonstrated that Nakita Lemons likely died from

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natural or accidental causes and that Ms. Lemons' statement was inconsistent with the scientific evidence.

Trial counsel thus left the factfinder without any reason to doubt Dr. Cassin's findings despite the fact that those findings would have been deemed highly questionable in the relevant scientific community. This failure "resulted in two things: a defense theory without objective, expert testimonial support, and a defense counsel insufficiently equipped to challenge the prosecution's expert[]." *Ackley*, 497 Mich at 392.

Expert testimony was not only integral to the prosecution's ability to prove Ms. Lemons' guilt, but it was essential to her ability to combat that narrative and provide her own. Accordingly, there is a reasonable probability that, had the factfinder heard the testimonies of Dr. Barnes, Dr. Nichols, and Dr. Galaznik—which provide fully credible explanations as to how Nakita Lemons died without being abused, combat Dr. Cassin's original conclusions, and render Ms. Lemons' statement unreliable, the result of Ms. Lemons' trial would have been different.

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CONCLUSION AND RELIEF REQUESTED

For the reasons stated above, Ms. Lemons respectfully requests that this Court: 1) grant leave to appeal, or 2) summarily reverse and remand for a new trial.

Respectfully Submitted,

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Dated: January 12, 2022