No. 22-7546

In The Supreme Court of the United States

ROBERT LESLIE ROBERSON III,

.

Petitioner,

v.

TEXAS,

Respondent.

On Petition For A Writ Of Certiorari To The Texas Court Of Criminal Appeals

BRIEF OF AMICUS CURIAE THE CENTER FOR INTEGRITY IN FORENSIC SCIENCES IN SUPPORT OF PETITIONER

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TABLE OF CONTENTS

]	Page
	age

TABL	E OF CONTENTS	i
TABL	E OF AUTHORITIES	ii
INTE	REST OF AMICUS CURIAE	1
SUMN	MARY OF THE ARGUMENT	2
ARGU	JMENT	4
	Flawed Scientific Theories Lead To Wrongful Convictions	4
	SBS/AHT-Based Cases Pose a Uniquely Serious Risk of Wrongful Conviction	7
	A. The Science Historically Supporting SBS/AHT Convictions Is Unsupported by Modern Scientific Understanding	9
	B. Courts Have Granted Relief from SBS/ AHT Convictions	13
	The Habeas Court Ignored the Evidence Mr. Roberson Adduced, Depriving Him of	
	Due Process	21
CONC	CLUSION	26

i

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vi

Page

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Page

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INTEREST OF AMICUS CURIAE¹

The Center for Integrity in Forensic Sciences ("CIFS") is a non-profit organization that focuses on ensuring the reliability of forensic sciences, both in theory and as applied, particularly in crime laboratories and courtrooms. Among its goals, CIFS seeks to eliminate subjective, unvalidated, unfalsifiable, or otherwise unreliable areas of forensic opinion and analysis from courtrooms; to improve the sophistication, rigor, and accuracy of judicial oversight of the admission of forensic testing, testimony, opinion, and other evidence; and to reduce, or where possible eliminate, confirmation bias in the work of forensic analysts. CIFS is committed to ensuring, as an essential component of a fair and just determination of the facts, that judgments are premised upon accurate scientific and medical evidence—an interest directly implicated in this case.

CIFS provides *amicus* support in cases that rely on outdated or flawed forensic sciences. CIFS respectfully seeks to assist the Court in recognizing the prevalence of wrongful convictions based on faulty forensic science generally, and specifically as applied to the

¹ This brief was authored in whole by the undersigned counsel. No fee has been paid or will be paid for preparing this brief, and no person or entity other than CIFS and its counsel made any monetary contribution intended to fund the preparation or submission of this brief. Sup. Ct. R. 37.6. CIFS provided timely notice to the parties of its intent to file an *amicus* brief in support of Petitioner. Sup. Ct. R. 37.2.

unsupported Shaken Baby Syndrome/Abusive Head Trauma ("SBS/AHT") hypothesis.

SUMMARY OF THE ARGUMENT²

Forensic science is a long-established tool for investigating crimes and adjudicating evidence at trial. As scientific disciplines advance, however, some previously accepted forensic methods are understood to no longer be scientifically valid. With these advancements follows the recognition that reliance on flawed forensic evidence has led to wrongful convictions. Courts nationwide have granted relief when current scientific understanding no longer supports a conviction, especially when the conviction rests to a significant degree on flawed or outdated scientific or expert opinion evidence, as is often the case with the SBS/AHT hypothesis.

Petitioner Robert Leslie Roberson III was convicted of causing the death of his daughter, a chronically ill child suffering from fever and pneumonia before her collapse. He was sentenced to death based on scientific evidence the forensic community now understands to be outdated and deeply flawed. No conviction should be allowed to stand on this foundation, particularly a death sentence. The death of two-yearold Nikki Curtis was a tragedy—a tragedy that will be

 $^{^{2}\,}$ CIFS defers to the Petitioner's submission for a comprehensive recitation of the facts.

compounded beyond measure if Mr. Roberson is wrongfully executed due to flawed forensic evidence.

At trial, the prosecution relied on the SBS/AHT hypothesis to explain Nikki's cause of death and establish *mens rea*. Since the trial, the SBS/AHT hypothesis has come under intense criticism as scientifically unvalidated, and some of the specific claims made by the prosecution's experts have been categorically rejected. Mr. Roberson filed a state habeas application based on the intervening changes in the scientific understanding of SBS/AHT. The habeas evidentiary hearing demonstrated the SBS/AHT hypothesis could no longer support causation in this case with any degree of medical certainty.

Ignoring the extensive evidence Mr. Roberson adduced during the nine-day evidentiary hearing, including ample evidence discrediting the SBS/AHT hypothesis, the habeas court denied relief. The court relied primarily on the State's witnesses, to the exclusion of the more credible testimony of the qualified experts Mr. Roberson presented, and accepted trial testimony while ignoring the new evidence offered at the hearing. The court acknowledged Mr. Roberson's experts only to take their testimony out of context and ignore their ultimate conclusion—that the State's hypothesis concerning causation is insupportable in light of present-day scientific understanding and the facts now known regarding Nikki's condition. Stripped of any legitimate scientific underpinning, the remaining evidence cannot support the jury's verdict.

CIFS seeks to assist the Court in understanding the history of SBS/AHT, the modern consensus in the scientific community as to its unreliability, and how, when faced with present-day understanding, other courts across the nation—based on evidence like Mr. Roberson presented—have granted relief in cases involving an unsubstantiated SBS/AHT hypothesis. CIFS further outlines how the habeas court ignored scientific evidence discrediting the SBS/AHT hypothesis used to convict Mr. Roberson, in violation of Mr. Roberson's Due Process rights, necessitating intervention by this Court.

ARGUMENT

I. Flawed Scientific Theories Lead To Wrongful Convictions.

Over the past two decades, medical and legal experts have questioned many forensic evidence disciplines that were previously entrenched parts of courtroom "science."³ In 2009, the National Research Council ("NRC") released a report recognizing "[t]he forensic science system, encompassing both research and practice, has serious problems that can only be addressed by a national commitment to overhaul the

³ See Exec. Off. of the President President's Council of Advisors on Sci. and Tech., Forensic Science in Criminal Courts: Ensuring Scientific Validity of Feature-Comparison Methods 25–29 (2016) [hereinafter, "PCAST Report"], https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/PCAST/pcast_forensic_science_report_final.pdf.

current structure that supports the forensic science community in this country."⁴ The NRC observed that "substantive information and testimony based on faulty forensic science analyses may have contributed to wrongful convictions of innocent people."⁵ The report opined that the "adversarial process relating to the admission and exclusion of scientific evidence was not suited to the task of finding 'scientific truth'" and "support must be given to all credible forensic science disciplines if they are to achieve the degrees of reliability needed to serve the goals of justice."⁶

In response to this report, the President's Council of Advisors on Science and Technology ("PCAST") worked to determine whether additional measures could help "ensure the validity of forensic evidence used in the Nation's legal system."⁷ PCAST published a report in 2016 emphasizing "the need to evaluate specific forensic methods to determine whether they have been scientifically established to be valid and reliable" and concluding that several methodologies lacked scientific validity, resulting in wrongful convictions.⁸ While the PCAST report focused specifically on the so-called "pattern-matching" or identification

⁴ See Nat'l Rsch. Council, Strengthening Forensic Science in the United States: A Path Forward xx (National Academies Press 2009) [hereinafter "NAS Report"], https://www.ncjrs.gov/pdffiles1/ nij/grants/228091.pdf.

 $^{^{5}}$ *Id.* at 4.

⁶ Id. at 12–13.

⁷ PCAST Report, *supra* note 3, at 25–29.

⁸ *Id.* at 1.

disciplines, the report further noted that "there are issues related to the scientific validity of other types of forensic evidence that are beyond the scope of this report but require *urgent* attention—including . . . Shaken Baby Syndrome.'"⁹

The PCAST report did not opine on whether any specific past cases had been erroneously decided. Courts nationwide, however, in recognition of the same concerns identified in the NRC and PCAST reports have overturned prior convictions based on flawed forensic methodologies or refused to consider evidence no longer supported by advancing science,¹⁰ including, but not limited to, hair and fiber comparison evidence,¹¹

⁹ Id. at 23 n.15 (emphasis added).

¹⁰ See Misapplication of Forensic Science, Innocence Project, https://innocenceproject.org/misapplication-of-forensic-science/ (last visited May 23, 2023).

¹¹ See Russell D. Covey, Suspect Evidence and Coalmine Canaries, 55 Am. Crim. L. Rev. 537, 565–70 (2018) (discussing microscopic and visual hair/fiber comparison); Gimenez v. Ochoa, 821 F.3d 1136, 1144 n.4 (9th Cir. 2016), cert. denied, 137 S. Ct. 503 (2016), citing Spencer S. Hsu, FBI Admits Flaws in Hair Analysis Over Decades, WASH. POST (Apr. 18, 2015), https://www. washingtonpost.com/local/crime/fbi-overstated-forensic-hair-matchesin-nearly-all-criminal-trials-for-decades/2015/04/18/39c8d8c6e515-11e4-b510-962fcfabc310_story.html ("The Justice Department and FBI have formally acknowledged that nearly every examiner in an elite FBI forensic unit gave flawed testimony in almost all trials in which they offered evidence [about hair matches] against criminal defendants over more than a twodecade period.").

bitemark matching,¹² and arson and fire science.¹³

II. SBS/AHT-Based Cases Pose a Uniquely Serious Risk of Wrongful Conviction.

In contrast to many forensic science disciplines, which seek information to establish only certain elements of an alleged offense, the SBS/AHT hypothesis was historically used to establish *all* elements of a criminal offense, including the *actus reus* (violent shaking or shaking with impact), *mens rea* (the state of mind necessary for the specified crime), and the identity of the alleged perpetrator (the last person physically present with the child immediately before the child's collapse). The SBS/AHT hypothesis in this historical formulation is no longer considered reliable

¹² See, e.g., Covey, supra note 11, at 570–72 (2018) (discussing bitemark comparison); In re Richards, 371 P.3d 195, 199 (Cal. 2016) (granting habeas relief based on false bite mark evidence presented at trial); Ege v. Yukins, 380 F. Supp. 2d 852, 857–58, 869–71 (E.D. Mich. 2005) (rejecting testimony offered at trial by forensic odontologist regarding bitemark matching and granting defendant habeas corpus relief because the testimony offered at trial could not be supported by any empirical or scientific basis).

¹³ See, e.g., Covey, supra note 11, at 541 (2018) (tracking wrongful convictions involving arson); *People v. Chase*, No. I-040-95, 2005 N.Y. slip op. 51125U, at 10 (N.Y. Co. Ct. May 19, 2005) (granting habeas challenge to arson conviction based on newly discovered evidence regarding the properties of propane); *Willis v. Cockrell*, No. P-01-CA-20, 2004 WL 1812698, at *10–12 (W.D. Tex. Aug. 9, 2004) (granting habeas writ in case involving faulty arson science).

and has resulted in wrongful convictions.¹⁴ Indeed, there is now broad agreement that the studies supporting the SBS/AHT hypothesis are plagued by circular reasoning,¹⁵ that the past consensus statements of major medical associations were mistaken in critical respects, and that the best, and perhaps only, support for the hypothesis relies upon unreliable and deeply problematic confessions by accused parents and caretakers.¹⁶ Recognizing the flawed nature of convictions rooted in this hypothesis, courts nationwide have granted relief from convictions premised on SBS/AHT.

¹⁴ See, e.g., Emily Bazelon, Shaken Baby Syndrome Faces New Questions in Court, N.Y. TIMES MAGAZINE (Feb. 2, 2011), https://www.nytimes.com/2011/02/06/magazine/06baby-t.html.

¹⁵ Shalea J. Piteau et al., *Clinical and Radiographic Characteristics Associated with Abusive and Nonabusive Head Trauma: A Systematic Review*, 130 PEDIATRICS 315, 316, 321 (2012) (finding that the best studies supporting the SBS/AHT diagnosis are "fraught with circular reasoning.").

¹⁶ See THE INNOCENCE NETWORK, Statement of the Innocence Network on Shaken Baby Syndrome/Abusive Head Trauma 4–5 (Jun. 14, 2019), https://prismic-io.s3.amazonaws.com/innocencenetwork/12c46af9-9bf7-48fc-a731-a01b3425ced3_STATEMENT-OF-THE-INNOCENCE-NETWORK-ON-SHAKEN-BABY-SYNDROME-6.14.19-1+%281%29.pdf; Del Prete v. Thompson, 10 F. Supp. 3d 907, 936–37 (N.D. Ill. 2014) (noting a prominent supporter of SBS/AHT conceded on cross examination "no one has marshalled a coherent argument to support shaking alone as a causal mechanism for abusive head injury, and that the only evidence basis for this proposition consists of perpetrator confessions").

A. The Science Historically Supporting SBS/AHT Convictions Is Unsupported by Modern Scientific Understanding.

Current research shows the medical findings historically associated with SBS/AHT—known as the "triad" of symptoms, including (i) subdural hematoma, (ii) cerebral edema or encephalopathy, and (iii) retinal hemorrhage—are inadequate to reliably diagnose SBS/ AHT without further corroborating evidence.¹⁷ Modern scientific consensus is that the triad is attributable to a wide variety of natural and accidental causes.¹⁸ Today, *all* leading authorities on SBS/AHT agree that the SBS/AHT finding cannot be made based solely on the presence of the "triad," and that all findings used to "diagnose" SBS/AHT have multiple possible non-abusive etiologies.¹⁹

¹⁷ See, e.g., Niels Lynøe et al., Insufficient Evidence for 'Shaken Baby Syndrome'—A Systematic Review, 106 ACTA PAEDI-ATRICA 1021, 1025–26 (2017).

¹⁸ Even those that maintain that trauma is the most likely cause of subdural hemorrhage in infancy now state unequivocally that the triad is not exclusively caused by inflicted injury. C. Smith & J. Bell, *Shaken Baby Syndrome: Evidence and Experts*, 50 DEVELOPMENTAL MED. & CHILD NEUROLOGY 6, 7 (2008); Michael David Jones et al., *Development of a Computational Biomechanical Infant Model for the Investigation of Infant Head Injury by Shaking*, 55 MED., SCI., & LAW 291 (2015) (biomechanical study using computational model suggests shaking cannot generate levels of force necessary to produce injuries associated with abusive head trauma); DEBORAH TUERKHEIMER, FLAWED CONVICTIONS: "SHAKEN BABY SYNDROME" AND THE INERTIA OF IN-JUSTICE, at xiv (2014).

¹⁹ See, e.g., Arabinda Kumar Choudhary et al., Consensus statement on abusive head trauma in infants and young children,

First, "subdural hematoma" ("SDH") refers to bleeding between layers of tissue that cover the brain. While it was once believed SDH could be caused *only* by trauma, SDH is now universally accepted to have many possible causes, such as pneumonia and the phenomena associated with oxygen-deprivation.²⁰ It is now clear that there are many accidental and natural causes of SDHs, including prenatal conditions; congenital malformations; venous thrombosis; infectious disease; genetic, metabolic, clotting, and autoimmune disorders; and minor impacts from accidents.²¹

Second, "cerebral edema" or "encephalopathy" refers to the excessive accumulation of fluid in the brain (cerebral edema), or any brain disease, damage, or dysfunction (encephalopathy). Current research demonstrates cerebral edema is not significantly associated with trauma.²² And while some experts previously hypothesized that encephalopathy was caused by shaking, current research indicates these symptoms reflect a deprivation of oxygenated blood to the brain (hypoxia), rather than direct mechanical injury, a development that even ardent supporters of SBS/AHT

⁴⁸ PEDIATRIC RADIOLOGY 1048, 1049–50, 1058 (2018); Sandeep K. Narang et al., *Abusive Head Trauma in Infants and Children*, 145 PEDIATRICS 4, at *1, 5 (2020).

 $^{^{20}}$ See Choudhary et al., supra note 19, at 1059–60; Narang et al., supra note 19, at *5.

²¹ See Maha Mian et al., Shaken Baby Syndrome: A Review, 34 FETAL AND PEDIATRIC PATHOLOGY 169–71 (2015).

²² See Piteau et al., supra note 15, at 319.

now acknowledge.²³ Anything that causes hypoxia can cause cerebral edema or encephalopathy—SBS/AHT is not the exclusive etiology.

Third, "retinal hemorrhage" ("RH") refers to bleeding in the back of the eyes. While mainstream medicine once believed that RH in an infant could be caused only by SBS/AHT, it is now universally accepted that RHs are associated with a variety of traumatic and nontraumatic causes. Even a leading supporter of the SBS/AHT hypothesis acknowledges myriad alternative causes for retinal hemorrhaging, including accidents and genetic and metabolic conditions.²⁴

Medical experts have also developed a new understanding concerning the onset of SBS/AHT symptoms. Experts previously believed that symptoms immediately followed shaking or other trauma. Research now shows that a child may experience a period of lucidity that lasts hours, or even days, between the time of injury or illness and the onset of symptoms.²⁵ Accordingly, the timing of injury or illness cannot be reliably

²³ See Mark S. Dias, *The Case for Shaking*, CHILD ABUSE AND NEGLECT: DIAGNOSIS, TREATMENT, AND EVIDENCE 364, 370 (1st ed., 2011) ("It is becoming increasingly clear . . . that the widespread cerebral and axonal damage in cases of AHT are, in fact, ischemic rather than directly traumatic in nature.").

²⁴ See Sandeep Narang, A Daubert Analysis of Abusive Head Trauma/Shaken Baby Syndrome, 11 HOUS. J. HEALTH L. & POL'Y 505, 629 (2011).

²⁵ Kristy Arbrogast et al., Initial Neurologic Presentation in Young Children Sustaining Inflicted and Unintentional Fatal Head Injuries, 116 PEDIATRICS 180, 181 (2005).

inferred from the time the symptoms initially are observed.

Research also shows that a child who falls even a short distance can manifest the medical findings previously attributed to SBS/AHT.²⁶ The dramatic shift in the understanding of such short falls is evidenced by the American Academy of Pediatrics' change in position since the time of Mr. Roberson's trial. At the time of trial, the Academy did not acknowledge that short falls could cause the triad. Early iterations of the Academy's official position papers declared that short falls *cannot* cause death or the findings associated with SBS/AHT.²⁷

Today, the Academy takes the opposite position.²⁸ In light of the medical community's newly developed

²⁸ Cindy Christian et al., *Abusive Head Trauma in Infants and Children*, 123 PEDIATRICS 1409, 1410 (2009).

²⁶ See, e.g., John Plunkett, Fatal Pediatric Head Injuries Caused by Short-Distance Falls, 22 AM. J. FORENSIC MED. PA-THOLOGY 1 (2001) (detailing 18 fatal falls, including a toddler's videotaped fall from a 28-inch playhouse); Rachel M. Kurinsky et al., Pediatric Injuries Associated with High Chairs and Chairs in the United States, 2003–2010, 53 CLINICAL PEDIATRICS 372, 374 (2014) (finding that children had similar head injuries from falling off chairs). Biomechanical recreations have shown there is sufficient force from a short fall to cause the triad. Chris Van Ee et al., Child ATD Reconstruction of a Fatal Pediatric Fall, ASME INT'L MECH. ENG'G CONGRESS & EXPOSITION (2009).

²⁷ Am. Acad. of Pediatrics, Comm. on Child Abuse & Neglect, Shaken Baby Syndrome: Rotational Cranial Injuries—Technical Report, 108 PEDIATRICS 206 (2001) ("The constellation of these injuries does not occur with short falls. . . .").

understanding, the Academy altered its official position regarding SBS/AHT.²⁹ The Academy eliminated the presumption of abuse when infants presented with the triad, omitted the claim that short falls cannot cause these findings, and recognized that disease can mimic the findings previously thought to be diagnostic of SBS/AHT.³⁰ Advances in science make clear that reliance on the traditional SBS/AHT hypothesis is no longer justified.

B. Courts Have Granted Relief from SBS/ AHT Convictions.

Courts nationwide have recognized that convictions grounded in SBS/AHT should not stand in light of current science. SBS/AHT convictions generally follow three steps. First, an expert witness testifies regarding the cause of the medical findings, opining that a child's condition could have been caused only by shaking or abuse. Second, the witness asserts the child's injuries required such violence, they must have been inflicted with intent to kill, or at least in disregard of that possibility. Third, the witness identifies the accused by claiming that the last person physically

²⁹ See id. at 1409.

³⁰ See id. at 1409–10. This is consistent with the medical literature on short falls. See, e.g., Patrick E. Lantz & Daniel E. Couture, Fatal Acute Intracranial Injury, Subdural Hematoma, and Retinal Hemorrhages Caused by Stairway Fall, 56 J. OF FORENSIC SCI. 1648, 1652 (2011); Paul Steinbok et al., Early Hypodensity on Computed Tomographic Scan of the Brain in an Accidental Pediatric Head Injury, 60 NEUROSURGERY 689, 693 (2007).

with the child must be the abuser because the child must have exhibited symptoms immediately after the alleged abuse.³¹

This process is contrary to the scientific method, which holds scientific conclusions are sound only after rigorous questioning of empirical evidence. As one court recently explained, "[e]ven the names of the diagnoses, *i.e.* 'abusive head trauma' and 'shaken baby syndrome,' have been criticized as essentially self-fulfilling prophecies. Rather than noting the objective injury observed separate from hypothesizing the cause, these 'diagnoses' conflate[] the two distinct concepts into one." *In re Rihana J.H.*, 54 N.Y.S.3d 612, 2017 WL 890526, at *2 (N.Y. Fam. Ct. Feb. 23, 2017).

This Court questioned the validity of SBS/AHT over a decade ago. In *Cavazos v. Smith*, the majority constrained by deference to the fact-finder's guilty verdict—noted that "[d]oubts about whether [the defendant] is in fact guilty are understandable" in light of the conflicting expert medical testimony surrounding the evolving science. 565 U.S. 1, 8 (2011). Indeed, partially in light of these "doubts," the majority suggested that there "perhaps would be grounds to seek clemency" for the defendant. *Id*. Agreeing that "significant doubts surround[ed the defendant's] conviction," the California governor commuted the defendant's sentence shortly thereafter.³²

³¹ See, e.g., Arbrogast et al., supra note 25, at 181.

³² A.C. Thompson, California Governor Commutes Sentence in Shaken Baby Case, PROPUBLICA (Apr. 6, 2012), https://www.

In accordance with the same concerns highlighted in *Cavazos*, courts nationwide have rejected evidence of, or convictions rooted in, the SBS/AHT hypothesis. Below is an abbreviated, non-exclusive sampling of cases:

• In May 2023, an Ohio court vacated a 2007 SBS/AHT-based conviction and granted a new trial after the medical examiner changed her opinion as to the three-year-old child's cause of death. The medical examiner, who originally testified in support of the SBS/AHT hypothesis, concluded after the habeas evidentiary hearing that the child's injuries were consistent with a short fall, and that the anal and rectal wounds previously used to support a sexual assault conviction, were medically inflicted by hospital staff.³³ State v. Hunter, No. B 0600596 (Ohio Com. Pl. May 10, 2023). The federal habeas court ordered the action staved pending the new state-court trial, noting "the new evidence at issue in this case [] strongly supports [the defendant]'s argument that he is innocent and that no crime occurred." Hunter v. Warden, Chillicothe Corr. Inst., No. 1:15-CV-209, 2022 WL 3446106, at *5 (S.D.

propublica.org/article/california-governor-commutes-sentence-in-shaken-baby-case.

³³ Taylor Nimmo, Man who was on death row for 15 years gets new trial, still without bond as judge continues hearing, WCPO 9 CINCINNATI (May 12, 2023), https://www.wcpo.com/news/ local-news/hamilton-county/man-who-was-on-death-row-for-15-yearsgets-new-trial-still-without-bond-as-judge-continues-hearing.

Ohio Aug. 16, 2022) (citation omitted) (emphasis in original).

- In an April 2023 trial of a man accused of killing his girlfriend's two-year-old child, the jury heard testimony about the child's signs of illness, including pneumonia that was missed by the medical examiner, which refuted the prosecutor's SBS/AHT hypothesis. The jury subsequently acquitted defendant.³⁴
- In a Nevada court in December 2022, the prosecution voluntarily dismissed murder and child abuse charges based on the SBS/AHT hypothesis after an investigation showed that prosecutors could not prove the charges.³⁵
- In November 2022, recognizing the change in scientific understanding since the defendant's 2003 trial, an Ohio court granted a new trial based on new evidence, including a toddler's overlooked pneumonia and expert testimony regarding the opinion shift concerning SBS/ AHT. Pet. at App347–74.³⁶

³⁴ Benjamin Leung, Jury acquits Renton man in death of 2year-old boy, RENTON REPORTER (Apr. 8, 2023), https://www.renton reporter.com/news/jury-acquits-renton-man-in-death-of-2-year-oldboy/?fbclid=IwAR2V9OjqQr9f11I5Qgt0FsSd-xXftHMbLsM1-dce5f FfgbT5RnVYockVio0.

³⁵ See Katelyn Newberg, Murder charge dropped against Las Vegas woman arrested in baby's death, LAS VEGAS REVIEW— JOURNAL (Dec. 21, 2022), https://www.reviewjournal.com/crime/ courts/murder-charge-dropped-against-las-vegas-woman-arrestedin-babys-death-2698446/.

³⁶ Citations to "App" refer to Petitioner's appendix to his Petition for Writ of Certiorari.

- In January 2022, a New Jersey court excluded SBS/AHT testimony as not grounded in science, and later granted Defendant's motion to dismiss the indictment. *New Jersey v. Nieves*, Indictment No. 17-06-00785 (Sup. Ct. N.J., Middlesex Cnty., Jan. 7, 2022). The court recognized that "[t]he accuracy of scientific evidence must be established and not left premised upon probabilities based upon extrapolation of data but, instead, certainties borne from testing and examination." *Id.*
- In April 2021, a Michigan court agreed that new evidence challenging the "conventional wisdom" of SBS/AHT warranted a new trial for a defendant convicted of killing her 11week-old daughter. *People v. Miller*, No. 346321, 2021 WL 1326733, at *2, 6 (Mich. Ct. App. Apr. 8, 2021).
- In February 2021, a Maryland court described changes in SBS/AHT's original tenets in light of scientific developments, including recognition that the triad is attributable to a wide variety of causes, and granted a petition for writ of actual innocence. *Jones v. State*, No. 0087, 2021 WL 346552, *11–20 (Md. Ct. Spec. App. Feb. 2, 2021).
- In 2019, the Ninth Circuit affirmed a district court's grant of habeas relief, finding flawed expert testimony regarding SBS/AHT undermined the fundamental fairness of the defendant's trial, in violation of his Due Process rights. *Hanson v. Baker*, 766 F. App'x 501, 504 (9th Cir. 2019). The Ninth Circuit noted a

"sea-change in scientific consensus" surrounding SBS/AHT. *Id.* at 502.

- In 2019, an Alaska court vacated a conviction based on the SBS/AHT hypothesis and ruled that the trial court's exclusion of other evidence tending to show the infant's death may have resulted from natural causes constituted reversible error. *Allison v. State*, 448 P.3d 266, 274 (Alaska Ct. App. 2019).
- In 2018, a New Jersey court found that a defendant accused of abuse under the SBS/AHT hypothesis was not guilty because "presently there is no sufficiently reliable evidence and no general consensus in the scientific and medical community as to both the age and causation of retinal hemorrhages[.]" *State v. Jacoby*, No. 15-11-0917-I, 2018 WL 5098763, at *12 (N.J. Sup. Ct. Law Div. Aug. 17, 2018).
- In 2016, a California court granted habeas relief, emphasizing expert testimony that "a more thorough medical investigation would have been considered by any competent attending pediatrician to be both necessary and routine" in SBS/AHT cases to rule out a "non-traumatic or accidental cause of the child's signs and symptoms." Vanek v. Wofford, No. CV 14-4427-AG (KK), 2016 WL 6783340, at *10–11 (C.D. Cal. July 26, 2016), report and recommendation adopted, 2016 WL 6781086 (C.D. Cal. Nov. 15, 2016). The court recognized the triad does not necessarily indicate "violent shaking" and that the child may have

"suffered from a pre-existing medical condition that may have been present from birth." *Id.*

- A New York court ordered a new trial in 2016 for a defendant who was convicted of abuse under the SBS/AHT hypothesis. *People v. Bailey*, 47 Misc. 3d 355, 373 (N.Y. Co. Ct. 2014), *aff'd*, 144 A.D.3d 1562, 41 N.Y.S.3d 625 (2016). The court noted "there has been a compelling and consequential shift in mainstream medical opinion since the time of the defendant's trial as to the causes of the types of trauma that [the infant] exhibited" and that "advancements in science and/or medicine may constitute newly discovered evidence." *Id*.
- In 2016, a Massachusetts court ordered a new trial for a defendant convicted under the SBS/AHT hypothesis, finding "substantial risk of a miscarriage of justice where the jury heard no scientific or medical expert challenging the majority views on [SBS/AHT], and where new research has emerged since the time of trial that would lend credibility to the opinion of such an expert." *Commonwealth v. Epps*, 53 N.E.3d 1247, 1268 (Mass. 2016).
- Earlier the same year, the same court vacated a conviction and remanded for new trial citing the "heated debate in the medical community" over SBS/AHT and that "the jury heard only one side of this debate." *Commonwealth v. Millien*, 50 N.E.3d 808, 809, 827 (Mass. 2016).
- A Michigan court ordered a new trial in 2015 for a defendant convicted of killing his girlfriend's child based on the SBS/AHT

hypothesis. *People v. Ackley*, 870 N.W.2d 858, 867 (Mich. 2015). The court held defense counsel's failure to "engage a single expert witness to rebut the prosecution's expert testimony" on SBS/AHT constituted ineffective assistance. *Id.* at 860.

- In 2014, a federal district court in Illinois concluded that no reasonable jury would find the defendant guilty under the SBS/AHT hypothesis, noting that contemporary scientific and medical developments discrediting the hypothesis "suggest . . . that a claim of shaken baby syndrome is more an article of faith than a proposition of science." *Del Prete v. Thompson*, 10 F. Supp. 3d 907, 909, 957 n.10 (N.D. Ill. 2014).
- In 2011, the Seventh Circuit held that police violated a defendant's constitutional rights by coercing him into confessing that his "gentle" and "innocently intended" shaking caused an infant's death. *Aleman v. Vill. of Hanover Park*, 662 F.3d 897, 906 (7th Cir. 2011). The Seventh Circuit highlighted the sea change regarding the SBS/AHT hypothesis and noted that the doctors who examined the child "eventually decided" the infant's collapse "could have been the delayed effect of . . . earlier trauma rather than of anything [the defendant] had done." *Id.* at 902.
- In 2009, a North Carolina court sustained the trial court's decision overturning a jury verdict, holding that evidence of SBS/AHT was insufficient, and that the jury verdict was

"based on speculation and conjecture, not evidence, and cannot stand." *State v. Roach*, 200 N.C. App. 322, 683 S.E.2d 466, at *3 (N.C. App. 2009) (unpublished).

• A Wisconsin court ordered a new trial in 2008, ruling newly discovered evidence undermined the validity of SBS/AHT. *State v. Edmunds*, 308 Wis. 2d 374, 377 (Wis. Ct. App. 2008). The court noted "there has been a shift in mainstream medical opinion since the time of [the defendant]'s trial as to the causes of the types of trauma [the infant] exhibited." *Id.* at 391.

Despite Mr. Roberson and CIFS presenting the habeas court with a similar non-exhaustive list of authorities, the habeas court's Findings make no reference to them whatsoever. Pet. at App005–17. This significant shift in the relevant science—which the habeas court ignored completely—is the crux of Mr. Roberson's attack on the scientific evidence used to convict him.

III. The Habeas Court Ignored the Evidence Mr. Roberson Adduced, Depriving Him of Due Process.

The now-discredited testimony given in prior SBS/AHT cases that resulted in exonerations and reversals of convictions bears striking resemblance to the testimony in this case. The habeas court evidentiary hearing demonstrated that the causation theory presented to explain Nikki's death is no longer supportable. The State argued Nikki's death was caused by a combination of shaking and impact. See Pet. at 9-14 (reciting the relevant trial testimony). But now, tacitly acknowledging the trial causation theory lacks support, the State argues it did not rely on shaking at all at trial. The State's effort to run from the trial record should be rejected.³⁷

Inexplicably, the habeas court's findings ignore almost all of the evidence Mr. Roberson adduced in the evidentiary hearing, except to distort it or take it out of context. For example, the habeas court found "shaken baby syndrome/abusive head trauma is still a recognized diagnosis in the medical field." Pet. at App007 ¶ 9. This finding does not substantiate a conclusion that SBS/AHT remains scientifically valid, that the particulars of the State's expert opinions proffered at trial remain valid, or that this flawed hypothesis establishes causation here.

The habeas court cites Dr. Janice Ophoven's testimony to support this finding. Dr. Ophoven, a boardcertified forensic pathologist, was one of several qualified experts who offered testimony supporting Mr. Roberson's habeas application. Dr. Ophoven was adamant that Dr. Jill Urban incorrectly concluded Nikki's death was a homicide, especially in light of current scientific understanding. *Compare* Pet. at App011 ¶ 45, *with* Pet. at App135–40, 157.

³⁷ While the State may argue it could still convict Mr. Roberson without the now-discredited scientific evidence, this Court should not "turn a blind eye to the fact that a significant pillar of the State's case, as presented to the jury, has collapsed. . . ." *Hildwin v. State*, 141 So. 3d 1178, 1181 (Fla. 2014).

The findings also disregard the testimony of Dr. Kenneth Monson, a biomechanical engineer, who made clear that violent shaking would result in ligament disruption in the neck.³⁸ *Compare* Pet. at App008 $\P\P$ 10–13, 16–17, *with* Pet. at App090, 105. Nikki had no neck injuries of any kind. *Id*.

The habeas court disregarded evidence undermining Dr. Urban's confusing testimony about anatomy, including her opinion that a "weak neck" made Nikki purportedly more vulnerable to an internal head injury while "protecting" her neck. Dr. Ophoven made clear that research never supported this conclusion in children Nikki's age—who by contrast have larger brains, thicker skulls, and stronger necks—but rather, are characteristic of newborns and infants. Pet. at App101–02. Nikki was not an infant and did not have a weak neck. Moreover, as Dr. Monson explained, acceleration caused by shaking is generated by force in the neck, and the neck is *not* protected during shaking. Pet. at App104–05.

The habeas court credited Dr. Urban's testimony concerning "multiple impacts or blows over the entirety of Nikki's head." Pet. at App008 ¶ 26. But Mr. Roberson presented *three* more experienced pathologists (Dr. Ophoven, Dr. Carl Wigren, and Dr. Roland Auer) who adamantly disagreed and found just one impact

³⁸ Dr. Monson is an associate professor of mechanical engineering at the University of Utah. He serves as the Director of the "Head Injury and Vessel Biomechanics Laboratory" at the University of Utah, which is devoted to understanding traumatic brain injury and head trauma. Pet. at App090.

site. Radiologist Dr. Julie Mack and the State's own child abuse expert at trial, Dr. Janet Squires, agreed there was only one impact site, consistent with Mr. Roberson's description of events leading up to Nikki's death and the exculpatory CAT scans that Dr. Urban never reviewed. Pet. at App212.

Dr. Auer, a neuropathologist and expert in brain trauma, found evidence of a single, minor impact site and explained how the subdural blood seen at autopsy was not, as Dr. Urban suggested, evidence of multiple impact sites at all. Pet. at App133. Dr. Ophoven and Dr. Wigren (another forensic pathologist), testified to the same conclusions. Pet. at App139–40, 147–49. Of particular relevance to Dr. Wigren's conclusions were the exculpatory CAT scans the State withheld from Mr. Roberson. *Id.* The habeas court ignored each of these experts. The exculpatory CAT scans go completely unmentioned by the habeas court.

Furthermore, the habeas court's findings concerning the evidence of pneumonia at the time of Mr. Roberson's trial are contrary to the actual trial record. Pet. at App011 ¶¶ 50–51. The trial record contains no mention of pneumonia—the jury was absolutely unaware that Nikki had interstitial viral pneumonia at the time of her death. Dr. Urban noted "interbronchial aggregates of neutrophils and macrophages" in her autopsy report, but Dr. Auer explained this phrase is essentially meaningless and does not describe the evidence of interstitial viral pneumonia he observed in studying the lung tissue slides from Nikki's autopsy. Pet. at App151–52. Finally, the habeas court's finding that criticism of SBS/AHT existed at the time of Mr. Roberson's trial is plainly controverted by the evidentiary hearing record. Pet. at App008 ¶ 19. The evidence adduced on this point is recounted at length in Mr. Roberson's Petition. Pet. at 16–23. Any assertion that SBS/AHT was not the prevailing wisdom at the time of trial is unfounded.

The habeas court's findings, as they relate to causation and the scientific evidence supporting Mr. Roberson's conviction, are built on a house of cards that cannot withstand this Court's scrutiny. The expert testimony adduced at the evidentiary hearing makes clear that it cannot be said with any degree of reasonable medical certainty that Nikki's death was caused by homicide, shaking or otherwise. Instead, the evidence provided alternate, and more likely, explanations for Nikki's cause of death, including complications from undiagnosed interstitial viral pneumonia, exacerbated by prescription drugs, a history of breathing issues, and an injury sustained as the result of a short fall.

As often occurred in SBS/AHT cases, especially prior to 2010, no theory other than SBS/AHT was offered to the jury to explain Nikki's death. Mr. Roberson's own attorney conceded that Mr. Roberson was facing the "classic" shaken baby case, and argued only that Mr. Roberson did not possess the requisite mental state for capital murder. Pet. at App082, 281. Defense counsel mistakenly conceded "that this child did not die from a fall of 22 inches." Pet. at App081, 269. Defense counsel reminded the jurors they had been asked about shaken baby syndrome during *voir dire*: "Every one of you related that you had heard the term shaken baby, that it was an act of basically a lack of control of emotion. It's a bad thing, but it's not something that rises to the level of capital murder." Pet. at App081, 269.

Because the jury heard only one theory of causation, and because new evidence and current scientific understanding invalidates the testimony supporting that theory, Mr. Roberson is entitled to habeas relief. The habeas court's failure to consider the new evidence Mr. Roberson presented, and the Court of Criminal Appeals' endorsement of the same, is a blatant violation of Mr. Roberson's Due Process rights that only this Court can remedy.

CONCLUSION

The testimony that led to Mr. Roberson's conviction is now known to be wrong. Courts nationwide have recognized as much and granted relief when presented with similar evidence undermining SBS/AHT.

Mr. Roberson adduced evidence from multiple qualified experts who presented alternative explanations for Nikki's death. The lower courts ignored this evidence, denying Mr. Roberson a new trial, and leaving him on death row for a crime that did not occur. Justice demands reconsideration of criminal convictions when premised upon discredited, unreliable testimony, as Mr. Roberson's conviction is. CIFS respectfully asks the Court to issue a writ of certiorari and undertake plenary review, or to summarily reverse the judgment of the Texas Court of Criminal Appeals.

Date: June 14, 2023

Respectfully submitted,

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