

STATE OF NEW YORK
APPELLATE DIVISION OF THE SUPREME COURT
FOR THE FIRST JUDICIAL DEPARTMENT

_____)
In the Matter of)
)
Syriah J. and) Docket Nos. NA-26514-5/12
Queenzephanyia M.J.E.,)
)
Children Under the Age of 18)
Years Alleged to be Abused)
and/or Neglected Under)
Article 10 of the Family Court)
Act.)
_____)

**BRIEF OF AMICUS CURIAE THE INNOCENCE NETWORK
IN SUPPORT OF RESPONDENT-APPELLANT**

Seth Miller*
President
THE INNOCENCE NETWORK
1100 East Park Avenue
Tallahassee, FL 32301
(850) 561-6767
Attorneys for *Amicus Curiae*

Katherine H. Judson*
Wisconsin Innocence Project
University of Wisconsin Law School
975 Bascom Mall
Madison, WI 53706
(608) 265-2741
Of Counsel for *Amicus Curiae*

Russell L. Hirschhorn
Adam W. Deitch
PROSKAUER ROSE LLP
Eleven Times Square
New York, NY 10036
(212) 969-3000
rhirschhorn@proskauer.com
adeitch@proskauer.com

On behalf of Counsel for *Amicus Curiae*

*Not admitted in this Court

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INTEREST OF AMICUS CURIAE

The Innocence Network (the “Network”) is an affiliation of organizations dedicated to providing pro bono legal and investigative services to indigent prisoners seeking to prove their innocence. The seventy current members of the Network represent hundreds of prisoners with innocence claims in all 50 states and around the world. Based on its experience exonerating innocent people and examining the causes of wrongful convictions and other flawed judicial outcomes, the Network has become keenly aware of the role that unreliable or improper scientific and medical evidence has played in miscarriages of justice, especially where the evidence is comprised almost completely of expert scientific or medical testimony. Some of the underlying “science” in these cases has been exposed as flawed, disputed, or outright false.

Therefore, especially in cases predicated largely or entirely upon medical or scientific opinion testimony, the Network is committed to ensuring, as an essential component of a fair and just determination of the facts, that such testimony is accurate – an interest directly implicated in this case. Prosecutions and other cases reliant on shaken baby syndrome / abusive head trauma (“SBS/AHT”) testimony are a particularly problematic area of science and the law. More than sixteen SBS/AHT convictions have been reversed since 2001, and hundreds more have

been dismissed or resulted in acquittals.¹ The courts thus have become increasingly skeptical of SBS/AHT dogma and have openly recognized that doubt has increased in the medical community “over whether infants can be fatally injured through shaking alone.” *Wisconsin v. Edmunds*, 308 Wis. 2d 374, 385 (Wis. Ct. App. 2008). The courts also have held 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, 957 n.10 (N.D. Ill. 2015), and have denounced the outdated belief that medical findings commonly thought to be associated with shaking cannot occur as a result of a short fall, finding that such claims have “been proven to be false.” *People v. Bailey*, 47 Misc. 3d 355, 370 (Sup. Ct. Monroe County 2014).

STATEMENT OF FACTS

In the interest of brevity, the Network adopts by reference the statement of facts as set forth in Esther J.’s Brief for Respondent-Appellant, filed on January 3, 2017.

¹ Debbie Cenziper, *Prosecutors Build Murder Cases on Disputed Shaken Baby Syndrome Diagnosis*, THE WASHINGTON POST, March 20, 2015.

SUMMARY OF ARGUMENT

Few pediatric diagnoses engender as much debate as [shaken baby syndrome] . . . Controversy is fueled because the mechanisms and resultant injuries of accidental and abusive head injury overlap, the abuse is rarely witnessed, an accurate history of trauma is rarely offered by the perpetrator, there is no single or simple test to determine the accuracy of the diagnosis, and the legal consequences of the diagnosis can be so significant.²

As discussed below in *Point I*, cases based on the shaken baby syndrome or abusive head trauma hypothesis (the “SBS/AHT hypothesis”) pose a serious risk of wrongful conviction or faulty judicial finding. The risk is especially high when, as here, the hypothesis – or elements of the hypothesis – is relied upon to the exclusion of any other bona fide evidence. This serious risk is more apparent than ever before because, as discussed in *Point II*, the scientific and medical community now recognizes that the reliance on a series of symptoms alone to support a diagnosis of SBS/AHT leads to scientifically unsupportable conclusions.

The serious risk of a faulty judicial finding became a reality in this case. As discussed in *Point III*, the Petitioner’s medical experts testified that the most likely explanation for Syriah’s injuries was intentional shaking by her mother or grandmother (that is, the Respondent-Appellant, Esther J.). But the medical

² Cindy W. Christian & Robert Block, *Abusive Head Trauma in Infants and Children*, 123 *Pediatrics* 1409 (2009).

experts' testimony was based only on the symptoms with which Syria presented and the erroneous assumption that there could be no explanation other than intentional abuse. Put simply, this explanation exceeds the limits of science.

ARGUMENT

I. CASES BASED ON THE SBS/AHT HYPOTHESIS POSE A SERIOUS RISK OF WRONGFUL CONVICTION.

Flawed forensic science is a leading cause of wrongful convictions in the United States. Indeed, among those cases in which DNA evidence has been used to exonerate – currently numbering more than 330 cases – faulty and misleading forensic or medical evidence, like the expert medical testimony on which the Family Court's decision was based, contributed to the underlying conviction in nearly half of these cases.³ The perils of invalid scientific and medical testimony are amplified in cases where, as here, the Petitioner relies almost entirely on expert opinions to attempt to meet its burden.

In its classic form, the SBS/AHT hypothesis suggests that abuse caused by the shaking of an infant can be diagnosed when the infant presents with a so-called “triad” of findings: (i) subdural hematoma (bleeding beneath the outer membrane surrounding the brain), (ii) retinal hemorrhage (bleeding at the back of the eyes), and (iii) cerebral edema (brain swelling) or encephalopathy (brain dysfunction).

³ See Innocence Project, *Forensic Oversight*, available at <http://www.innocenceproject.org/fix/Crime-Lab-Oversight.php>.

Under the SBS/AHT hypothesis, the logic supposedly follows that if an infant presents with this triad of symptoms, the only explanation is abuse by the person physically with the child at the time closest to manifestation of symptoms.

Expert presentations premised on the SBS/AHT hypothesis typically follow three uniquely prejudicial, yet scientifically invalid, steps. Taken together, these steps provide a *faulty* diagnosis of the cause and manner of death, the supposed identity of the perpetrator, and even an alleged motive. First, a doctor testifies as an expert witness on behalf of the prosecution or petitioner regarding the cause and manner of a child's death or injuries and opines that the only cause of the child's observed medical condition could be abuse (usually abuse by either shaking or shaking with impact). Second, the testifying doctor relies on the SBS/AHT hypothesis to identify the perpetrator by telling the fact-finder that the last person physically with the child had to be the abuser because the child would have exhibited symptoms immediately, or shortly after, infliction of the abuse. Third, the testifying doctor draws a conclusion about the defendant's or respondent's purported state of mind by postulating that the injuries in question presented in such a way that they could only have occurred through an intentional abusive act.⁴

⁴ Keith A. Findley, et al., *Shaken Baby Syndrome, Abusive Head Trauma, and Actual Innocence: Getting It Right*, 12 Hous. J. Health L. & Pol'y 209 (2012); Deborah Tuerkheimer, *The Next Innocence Project: Shaken Baby Syndrome and the Criminal Courts*, 87 Wash. U. L. Rev. 1 (2009).

Katherine Judson 1/9/2017 10:13 AM
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The SBS/AHT hypothesis lacks the hallmarks traditionally associated with science (and which are required of admissible expert testimony), and the research on which the hypothesis is based is replete with foundational and design flaws. Most significantly, the SBS/AHT hypothesis is undermined by the problem of circularity: the very signs or conditions being studied for their diagnostic value are used to categorize the cases under study as either abuse or non-abuse.⁵ Put another way, the researchers assume the very conclusion they are studying.

Commentators and researchers in the field of SBS/AHT, including the most ardent supporters of the SBS/AHT hypothesis, acknowledge that circularity plagues the research and that it is difficult to conduct high-quality, unbiased research on the effects of shaking on infants.⁶ While these challenges highlight the deficiencies in the underpinnings of the hypothesis, they cannot excuse judicial findings based on inadequate, methodologically questionable research. And while advocates of the classic hypothesis call instead for reliance on the clinical judgment of examining physicians in the absence of a robust scientific foundation, the *ipse dixit* of a group of purported experts cannot on its own suffice to establish reliable scientific evidence. *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 157 (1999) (internal quotation omitted).

⁵ Findley, *supra* n. 4, at 274.

⁶ Sandeep Narang, *A Daubert Analysis of Abusive Head Trauma/Shaken Baby Syndrome*, 11 Hous. J. Health L. & Pol'y 505, 529-32 (2011); Findley, *supra* n. 4, at 236.

“By the end of 1998, it had become apparent that . . . the commonly held opinion that the finding of [typical SBS/AHT symptoms] in an infant was strong evidence of SBS was unsustainable.” *Cavazos v. Smith*, 132 S. Ct. 2, 10 (2011) (Ginsburg, J., dissenting). As a result, courts around the country have overturned convictions which – like the Family Court’s decision here – were based in part or in whole on the use of a medical expert utilizing aspects of the SBS/AHT hypothesis to demonstrate alleged abuse:

- A New York State court ordered a new trial on the basis of newly discovered evidence for Rene Bailey, who was convicted in 2002 on the basis of an SBS diagnosis of abuse. In so ruling, the court determined that “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.” *People v. Bailey*, 47 Misc. 3d 355, 374 (Sup. Ct. Monroe County 2014). In November 2016, the Fourth Department affirmed the reversal of Bailey’s conviction, holding that “the cumulative effect of the research and findings on [symptoms] presented in [SBS/AHT] cases and short-distance fall cases supports the court’s ultimate decision that, had this evidence been presented at trial, the verdict would probably have been different.” *People v. Bailey*, N.Y. Slip Op. 07490 (4th Dep’t 2016).

- In Illinois, a federal court found that the discrediting of the SBS/AHT hypothesis constituted newly discovered evidence demonstrating the innocence of Jennifer Del Prete, a woman convicted on the basis of an SBS diagnosis ten years prior. In so ruling, the court observed that recent scientific developments discrediting the SBS/AHT hypothesis “arguably 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, 957 n.10 (N.D. Ill. 2015).
- In Wisconsin, a state appellate court ordered a new trial where the conviction of Audrey Edmunds was based solely on expert medical testimony because newly discovered scientific evidence challenged the validity of the SBS/AHT hypothesis. In so ruling, the court reasoned that “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,” and a jury might have reasonable doubt as to the defendant’s guilt. *Wisconsin v. Edmunds*, 308 Wis. 2d 374, 391-92 (Wis. Ct. App. 2008). The state subsequently dismissed all charges against Edmunds.

In each of these cases, the prosecution relied on an SBS/AHT diagnosis that turned out to be flawed, just as the Petitioner here relied almost exclusively on expert medical testimony purporting to show the same. In short, the recent and

escalating judicial recognition of developments in the scientific understanding of the SBS/AHT hypothesis undermines the validity of convictions and other judicial findings secured wholly or in large part on the basis of this hypothesis.

II. CONTEMPORARY SCIENTIFIC AND MEDICAL RESEARCH HAS DISCREDITED THE SBS/AHT HYPOTHESIS.

Over the past two decades, a growing body of scientific and medical research has established that the presence of the so-called “triad” (or any other constellation) of symptoms associated with SBS/AHT – subdural hematoma, retinal hemorrhage, and cerebral edema or encephalopathy – do not prove that an infant was abused. As explained below, recent research has additionally demonstrated that the symptoms are not diagnostic of abuse in general or of the specific finding of abuse by shaking, and that the SBS/AHT “triad” of medical findings cannot be used to determine the level of force applied or the time at which an injury occurred. Where the hypothesis is predicated on observation of fewer than the full “triad,” a finding of SBS/AHT is even less trustworthy. Furthermore, there is now recognition that short falls of even eighteen inches can cause the symptoms sometimes associated with SBS/AHT, and the timing of symptoms does not provide support for an SBS/AHT diagnosis.

As a preliminary matter, scientific and medical research has established that even where there is an observation of the full “triad” of findings traditionally

associated with the SBS/AHT hypothesis, that is plainly insufficient to make a confident diagnosis of SBS/AHT without corroborating evidence. The classic formulation of the SBS/AHT hypothesis suggests that an act of shaking causes: (i) subdural hematoma, (ii) retinal hemorrhages, and (iii) cerebral edema or encephalopathy. With respect to each of these findings, however, the scientific and medical community now recognizes many different causes not associated with shaking.⁷

Regarding subdural hematoma, or a collection of blood outside the brain, adherents to the SBS/AHT hypothesis posit that shaking causes the brain's bridging veins and axons to rupture, leading to the bleeding and swelling associated with SBS/AHT.⁸ However, it is now clear that there are many different accidental causes of subdural hematoma, like a short fall, as well as non-traumatic causes.⁹ Indeed, according to several studies, bleeding and swelling in the brain in

⁷ Moreover, in the absence of neck injuries, the SBS/AHT hypothesis provides even less support for a diagnosis of SBS/AHT because any force applied to the body reaches the head through the neck. Faris A. Bandal, *Shaken Baby Syndrome: A Biomechanics Analysis of Injury Mechanisms*, 151 *Forensic Sci. Int'* 71,78 (2005) ("Head acceleration and velocity levels commonly reported for SBS generate forces that are far too great for the infant neck to withstand without injury"); A.K. Ommaya, et al., *Biomechanics and Neuropathology of Adult and Pediatric Head Injury*, 16 *Brit. J. Neurosurg.* 220, 228-29 (2002) (observing that biomechanical research demonstrates that, in the case of manual shaking of an infant by an adult, "the neck torque in the infant would cause severe injury to the high cervical cord and spine long before the onset of cerebral concussion").

⁸ See M.E. Case, et al., *Position Paper on Fatal Abusive Head Injuries in Infants and Young Children*, 22 *Am. J. Forensic Med. & Pathology* 112, 112 (2001).

⁹ See J.F. Geddes, et al., *Neuropathology of Inflicted Head Injury in Children, Microscopic Brain Injury in Infants*, 124 *Brain* 1290, 1304 (2001) ("[B]rain damage responsible for loss of consciousness in the majority of cases is hypoxic rather than traumatic"); see also Mark S. Dias,

infants is actually more likely to be explained by a non-traumatic cause, given the relatively small amount of bleeding generally found in SBS/AHT cases.¹⁰

Research also now demonstrates that the scientific basis for an opinion that an infant's eye injuries were caused by violent shaking, due to the number, location, or nature of the hemorrhages, or the presence of perimacular retinal folds, is anything but conclusive.¹¹ Even proponents of the SBS/AHT hypothesis now concede that retinal hemorrhaging is consistent with a number of other potential causes, both traumatic and non-traumatic.¹²

Cerebral edema and encephalopathy, defined respectively as “excessive accumulation of fluid in the brain substance” and “any degenerative disease of the

The Case for Shaking, Child Abuse and Neglect: Diagnosis, Treatment, and Evidence, 362, 368 (Carole Jenny, ed., 2011) (“It is becoming increasingly clear from both neuroimaging studies and post-mortem analysis of fatal cases that the widespread cerebral and axonal damage in cases of AHT are, in fact, ischemic rather than directly traumatic in nature”).

¹⁰ See Geddes, et al., *supra* n. 9, at 1297 (explaining that the subdural bleeding sometimes seen in infants is very different from the bleeding that would be expected to result from the bursting of the high-volume bridging veins thought to be caused by shaking); Waney Squier & Julie Mack, *The Neuropathy of Infant Subdural Hemorrhage*, 187 *Forensic Sci. Int'* 6, 7-8 (2009); Marta Cohen & Irene Scheimberg, *Evidence of Occurrence of Intradural & Subdural Hemorrhage in the Perinatal and Neonatal Period in the Context of Hypoxic Ischemic Encephalopathy*, 12 *Pediatric & Dev. Pathology* 169, 175-76 (2009).

¹¹ See Ommaya, *supra* n. 7, at 233 (“The hypothesis of ‘intra-ocular’ retinal hemorrhages caused by orbital shaking has not been tested experimentally”); P.E. Lantz, et al., *Perimacular Retinal Folds from Childhood Head Trauma*, 328 *Brit. Med. J.* 754, 756 (2004) (“Statements in the medical literature that perimacular retinal folds are diagnostic of [SBS/AHT] are not supported by objective scientific evidence”).

¹² See, e.g., Alex V. Levin & Cindy W. Christian, *Clinical Report – The Eye Examination in the Evaluation of Child Abuse*, 126 *Pediatrics* 376, 376 (2010) (“Retinal hemorrhage is an important indicator of possible abusive head trauma, but it is also found in a number of other conditions.”).

brain,”¹³ are also indisputably and universally known to result from any type of insult to the brain. Moreover, the swelling previously associated with shaking is more likely the result of hypoxia-ischemia (deprivation of oxygen or oxygenated blood to the brain), a finding that has been acknowledged even by proponents of the SBS/AHT hypothesis.¹⁴ Hypoxia-ischemia, in fact, can result from a variety of accidental and non-traumatic causes, including birth or other accidental trauma, metabolic diseases, nutritional deficiencies, genetic syndromes, clotting disorders, tumors, strokes, and infection.¹⁵

In this case, two significant factors cast further doubt on shaking as the mechanism of injury: Syriah’s age and development. Generally, the shaking hypothesis rests on the assumption that young infants are vulnerable to shaking because of their large heads and relatively weak necks. This does not describe Syriah, a toddler who was beginning to walk on her own and who did not present with any neck injury. While biomechanical research disputes that head injury can occur through shaking without neck injury, and that even the violent shaking of

¹³ Dorland’s Medical Dictionary at 568, 590 (29th Ed. 2000).

¹⁴ See Geddes, et al., *supra* n. 9, at 1304 (“[B]rain damage responsible for loss of consciousness in the majority of cases is hypoxic rather than traumatic”); see also Dias, *supra* n. 9, at 368 (“It is becoming increasingly clear from both neuroimaging studies and post-mortem analyses of fatal cases that the widespread cerebral and axonal damage in cases of AHT are, in fact, ischemic rather than directly traumatic in nature.”)

¹⁵ See Kent P. Hymel, et al., *Intracranial Hemorrhage and Rebleeding in Suspected Victims of Abusive Head Trauma: Addressing the Forensic Controversies*, 7 *Child Maltreatment* 329, 333-37 (2002).

infants does not rise to the level of acceleration expected to cause head and brain injury, this is especially true for toddlers. Biomechanical research suggests that shaking a toddler generates approximately 10 times *less* angular acceleration than does shaking an infant.¹⁶

Secondly, although the American Academy of Pediatrics (“AAP”) at one time endorsed a presumption of abuse when an infant presented with intracranial injuries like those included in the “triad,” the AAP has since revised its position. Indeed, by 2009, the AAP had amended its official stance to reflect developing medical research and now acknowledges that injuries traditionally associated with SBS/AHT can be caused by accidental falls.¹⁷ Furthermore, recent research demonstrates that short falls of just eighteen inches can cause injuries precisely like those sustained by Syriaiah.¹⁸

¹⁶ N.G. Ibrahim, et al., *The Response of Toddler and Infant Heads During Vigorous Shaking*, 22 J. Neurotrauma 1207 (2005).

¹⁷ Cindy W. Christian & Robert Block, *Abusive Head Trauma in Infants and Children*, 123 Pediatrics 1409 (2009).

¹⁸ See, e.g., Roth, Raul, Ludes & Willinger, *Finite Element Analysis of Impact and Shaking Inflicted to a Child*, 121 Int’l J. Legal Med. 223, 225 (2007) (based on computer simulation, eighteen-inch fall as likely to cause subdural hemorrhage as shaking); J.R. Hall, et al., *The Mortality of Childhood Falls*, 29 J. Trauma 1273 (1989); P.E. Lantz & D.E. Couture, *Fatal acute intracranial injury, subdural hematoma, and retinal hemorrhages cause by stairway fall*, 56 J. Forensic Sci. 1648 (2011); K.A. Kim, et al., *Analysis of Pediatric Injuries Caused by Short-Distance Falls*, 23 Am. J. Forensic Med. & Path. 1 (2001); P. Steinbok, et al., *Early hypodensity on computed tomographic scan of the brain in an accidental pediatric head injury*, 60 Neurosurgery 689 (2007).

Courts also have begun to take into account the reality that short falls can and do sometimes cause severe injuries. In *People v. Bailey*, a toddler who fell from a chair that was eighteen inches from the ground suffered serious brain injuries and later died. 47 Misc. 3d at 374. At trial, the prosecution claimed that a short fall could not have caused the injuries sustained, which included retinal hemorrhages, a brain contusion, and cerebral edema, i.e., the “triad” of typical SBS/AHT symptoms. At a three-week evidentiary hearing, experts for both the prosecution and defense agreed that the testimony presented against Bailey at trial – that short falls cannot kill – was false. *Id.* at 12. The court concluded that even short falls “can generate levels of force and velocity that exceed known thresholds for brain injury.” *Id.* at 8, 22.

Third, the timing of symptoms does not provide support for an SBS/AHT diagnosis. At one time, the onset of symptoms from trauma was thought to be always immediate under the SBS/AHT hypothesis. As a result, blame for the child’s injury or death was typically assigned to the person who happened to have custody of the child at the time when symptoms started to appear. This line of thinking rested in the mistaken belief that there could be no lucid interval between the injury and onset of symptoms because once axons were torn, the brain would fail. However, research has undeniably shown that such assertions are false because the triad of symptoms thought to be associated with shaking cannot be

timed with any certainty. Indeed, a period of lucidity lasting hours or even days between injury and the onset of symptoms can occur.¹⁹

In short, given the contemporary understanding in the scientific and medical community that even the whole “triad” of medical findings can be attributed to a wide variety of causes completely unrelated to shaking or abuse, the SBS/AHT hypothesis cannot be used to diagnose abuse without corroborating evidence. Stated another way, this combination of symptoms – or “constellation,” as Judge Pels referred to them in her decision – does not on its own give rise to a definitive diagnosis of abuse.

III. THE MEDICAL EVIDENCE INTRODUCED IN THIS CASE DOES NOT SUPPORT A FINDING OF SBS/AHT.

The medical testimony elicited by the Petitioner in this case fundamentally fails to support a diagnosis of SBS/AHT. Indeed, even taking the observations made by the Petitioner’s experts as true and ignoring the arguably more credible testimony from the Respondents’ testifying experts, the medical findings do not support a conclusion that Syria’s injuries were caused by shaking.

¹⁹ Kristy Arbrogast, et al., *Initial Neurologic Presentation in Young Children Sustaining Inflicted and Unintentional Fatal Head Injuries*, 116 Am. Acad. Pediatrics 180 (2005) (“Although infrequent, young victims of fatal head trauma may present as lucid ... before death”); M.G.F. Gilliland, *Interval Duration Between Injury and Severe Symptoms in Nonaccidental Head Trauma in Infants and Young Children*, 43 J. Forensic Sci. 723 (1998) (documenting lucid intervals of several hours to 72 hours or more).

First, Syriah presented with only one of the “triad” of symptoms – subdural hematoma – typically associated with SBS/AHT when she arrived at the hospital. Indeed, it was not until hours after her admission that a second symptom of the triad – cerebral edema – was observed.²⁰ (Tr. 7/9/14, at 41.) And as the Family Court acknowledged, “[i]t was undisputed that the child did not have retinal hemorrhages, which Dr. Sahlein, Dr. Levenbrown and Dr. Smiddy all testified were associated with shaking.” (Family Court’s Decision After Fact Finding (the “Decision”), at 44.)

If the presence of the full triad of symptoms would not on its face lead to a scientifically certain diagnosis, then without doubt it follows that observation of just one or two symptoms fails to support a conclusion that Syriah’s injuries were caused by shaking. As discussed above, neither subdural hematoma nor cerebral edema automatically indicates shaking, and both can in fact be explained by a variety of different traumatic and non-traumatic causes. Furthermore, in the absence of neck injuries, there is even less support for a diagnosis of SBS/AHT.

Beyond the diagnosis of SBS/AHT, one of the Petitioner’s medical experts, Dr. Cahill, claimed that a short fall from a mattress and box spring on the floor

²⁰ Even one of the Petitioner’s experts, Dr. Monica Smiddy, conceded that the “anoxic ischemic encephalopathy” that led to Syriah’s death does not necessarily indicate intentional shaking and can be explained by natural causes. (Tr. 2/19/14, at 30.)

could not have caused Syria's injuries.²¹ (Decision, at 7, 40-41.) Based both on the evolution of opinion in the medical community and recent research, it is clear that the belief that short falls cannot cause the type of injuries sustained by Syria is incorrect. (See Section II.) In fact, falls from precisely the height of the mattress and box spring in this case – eighteen inches, in the approximation of the Family Court – can cause subdural hematoma and cerebral edema. *Id.*

The Petitioner's experts also testified that Syria would have shown symptoms immediately or shortly after she was injured. (Decision, at 46.) Indeed, "[i]n Dr. Cahill's opinion, Syria would certainly have shown signs of illness by the next morning." *Id.* At a minimum, the Court relied on the notion that even if not immediate, symptoms would have emerged "within 24 hours." *Id.* However, such an assumption has been proven to be false, as children can and do experience lucid intervals between the time of trauma and the time when symptoms begin to appear. (See Section II.) Beyond undermining a key assumption made by the Petitioner's experts, this also lends credibility to accounts that Syria appeared to be "fine" after her fall or falls.

In short, even if the Respondents had not brought forward experts who testified that the most likely explanation for Syria's injuries was a fall, as opposed

²¹ Notably, Respondents' experts testified that an accidental fall could have caused Syria's injuries and in fact that this was the most likely explanation. (Decision, at 7; Tr. 6/11/14, at 52-53; Tr. 7/9/14, at 29.)

to shaking, the evidence introduced by Petitioner's medical experts does not add up in the face of new research and a more modern and advanced understanding of SBS/AHT.

CONCLUSION

This case is different from those in which the Innocence Network typically becomes involved. Usually, the Network directly represents, or provides amicus support for, people who have been convicted of crimes and who have claims of innocence based on faulty forensic evidence introduced at trial, new evidence unavailable at the time of trial, or DNA evidence exonerating them after the fact. It is through this work that the Network has come to an understanding about a wide variety of previously accepted, but deeply flawed, forensic and medical sciences and their use at both criminal trials and in other judicial venues where issues of life and liberty are at stake.

Here, though this appeal does not arise out of a wrongful criminal conviction, the case centers on an abuse finding based almost exclusively on expert medical testimony and a conclusion that the injuries suffered by Syria were caused by shaking. In light of the ongoing dispute and evolving understanding in the medical community with respect to SBS/AHT, the Network respectfully seeks to assist the Court in evaluating the underlying decision with a more comprehensive perspective on the evidence.

For the foregoing reasons, the Network requests that the Court evaluate Respondent-Appellant's appeal with a comprehensive view of the evidence, taking into account the substantial fallibility of the SBS/AHT hypothesis, and grant such relief as it deems appropriate.

Respectfully submitted,

Seth Miller*
President
THE INNOCENCE NETWORK
1100 East Park Avenue
Tallahassee, FL 32301
(850) 561-6767
smiller@floridainnocence.org

Attorneys for Amicus Curiae

Katherine H. Judson*
Wisconsin Innocence Project
University of Wisconsin Law School
975 Bascom Mall
Madison, WI 53706
(608) 265-2741

Of Counsel for Amicus Curiae

Russell L. Hirschhorn
Adam W. Deitch
PROSKAUER ROSE LLP
Eleven Times Square
New York, NY 10036
(212) 969-3000
rhirschhorn@proskauer.com
adeitch@proskauer.com

On behalf of Counsel for *Amicus Curiae*

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*Not admitted in this Court