IN THE 3rd JUDICIAL DISTRICT COURT
ANDERSON COUNTY, TEXAS

EX PARTE ROBERT LESLIE ROBERSON III, APPLICANT	))))))	Trial Cause No. 26,162-A CCA Cause No. WR-63,081-03

APPLICANT'S PROPOSED FINDINGS OF FACT
AND CONCLUSIONS OF LAW

Respectfully submitted,

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[PROPOSED]
FINDINGS OF FACT AND CONCLUSIONS OF LAW

The Court, having considered Applicant Robert Leslie Roberson III's Subsequent Application for Writ of Habeas Corpus filed under Articles 11.071 and 11.073 of the Texas Code of Criminal Procedure (Application), the State's Answer, briefing and exhibits from both parties, and having heard live testimony during a multi-day evidentiary hearing, received voluminous documentary evidence, and heard arguments offered by the parties, makes the following Findings of Fact and Conclusions of Law under Article 11.071, section 7.

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NOTE REGARDING RECORD CITATIONS

The following abbreviations are used below in citing the record:

- "App2" refers to Appendix 2, filed under seal with the Court of Criminal Appeals, on June 8, 2016
- "RR" refers to the Reporter's Record from trial;
- "CR" refers to the Clerk's Record;
- "EHRR" refers to the Reporter's Record for the evidentiary hearing held in this cause;
- "SX" refers to an exhibit admitted into evidence by the State at trial;
- "DX" refers to an exhibit admitted into evidence by the defense at trial;
- "APPX" refers to an exhibit admitted or offered into evidence during this habeas proceeding by the Applicant; and
- "RX" refers to an exhibit admitted or offered into evidence during this habeas proceeding by the Respondent/State.

The number in front of the abbreviation refers to the volume number; the number following the abbreviation refers to the page number or range.

PROCEDURAL HISTORY

1. Applicant Robert Leslie Roberson III is confined under a sentence of death pursuant to the judgment of the 3rd District Court, Anderson County, Texas, Case Number 26,162-A, which was rendered on February 14, 2003. 49RR. The Honorable Bascom W. Bentley III (deceased) presided over the trial. In this writ proceeding, Mr. Roberson challenges the constitutionality of his conviction and seeks a new trial.

I. TRIAL

2. Mr. Roberson was indicted on or around April 25, 2002, for two counts of capital murder arising from the death of his two-year-old daughter Nikki Curtis on February 1, 2002. Mr. Roberson was accused of having "intentionally or knowingly" causing Nikki's death, "a person under the age of six years, by causing blunt force head injuries, by a manner and means unknown to the grand jury;" and of having done so "in the course of committing or attempting to commit the offense of aggravated sexual assault." 1CR2-4. Voir dire began a few months after his indictment, on September 4, 2002. 6RR1.

3. Before trial, the State obtained some medical records for the decedent. A portion of those medical records was made part of the record. *See* SX2 (APPX5), SX3 (APPX6), SX37 (APPX7), SX38 (APPX8), SX43 (APPX9), SX44 (APPX10), and SX45 (APPX11). These medical records refer to CAT or "CT" scans that had

been taken of Nikki's head on at least three different occasions. None of these CT scans, however, were included in the trial record.

4. On July 31, 2002, Mr. Roberson consented on the record to providing a DNA sample to law enforcement. 4RR. That sample was submitted to DPS with other physical evidence as the State sought support for its sexual assault hypothesis. APPX61. Nothing in the sexual assault kit yielded evidence to support the State's hypothesis, which had been proposed by a nurse in the Palestine ER when Nikki was brought in unconscious on January 31, 2002. APPX62; APPX6.

5. On September 4, 2002, voir dire commenced. 6RR. Jury selection was completed on December 18, 2002. 39RR. Throughout jury selection, the State specifically discussed "shaken baby syndrome" and invited potential jurors to consider just how "violent" the shaking would have to be to cause a child's death. *See, e.g.*, 7RR40; 7RR88-89; 8RR23-25; 19RR20-21; 19RR66-67. The State also emphasized with each potential juror that the case involved a charge that the child had been killed in the course of a sexual assault. *See, e.g.*, 7RR25-27; 7RR67; 7RR75; 7RR127; 8RR10; 19RR22; 19RR57. Defense counsel conceded that this was a "shaken baby" case and did not challenge the State's theory regarding cause of death during any phase of trial.

6. On January 22, 2003, a hearing was held regarding materials that had been seized from Mr. Roberson's cell by an investigator with the District Attorney's

Office on December 18, 2002, while Mr. Roberson was in court. 40RR. On February 3, 2003, Mr. Roberson was asked to put on the record that he had voluntarily rejected an offer to plead guilty to non-capital murder in exchange for a life sentence. 41RR2-3. Later that day, Opening Statements were presented.

7. The guilt-phase ended on February 11, 2003. Just before the jury began to deliberate, the State abandoned the count of capital murder based on the sexual assault allegation. 44RR3. However, the prosecutor claimed during the State's rebuttal closing argument that he only did so because Texas law required that the State elect one manner and means at the close of evidence (which was not an accurate representation of the law). 46RR53 (arguing "the law requires us to choose one or the other"). Even after dropping the count, the State continued to argue that there was evidence of a sexual assault, describing at length the testimony of the local nurse, Andrea Sims. 46RR58-60. The jury found Mr. Roberson guilty of capital murder on the lone count before it (murder of a child under the age of six). 46RR74-75. The punishment-phase began the next day. 47RR. The punishment-phase ended with the jurors answering the special issues such that Mr. Roberson was, on February 14, 2003, sentenced to death. 49RR.

II. INITIAL APPEALS

8. Immediately after Mr. Roberson was sentenced, his lead trial counsel was appointed to pursue a direct appeal and, at that lawyer's suggestion, the district

court also appointed state habeas counsel. 49RR50. Former state habeas counsel filed an initial application under Article 11.071 on December 13, 2004. The application did not include claims related to the State's cause-of-death theory or ineffective assistance of counsel. No evidentiary hearing was held.

9. While the direct appeal and the initial state habeas application were pending, on August 8, 2005, the Court of Criminal Appeals received a *pro se* document entitled "Notice of Desire to Raise Additional Habeas Corpus Claims."

10. On June 20, 2007, the Court of Criminal Appeals affirmed Mr. Roberson's conviction and sentence on direct appeal. *Roberson v. State*, No. AP-74,671 (Tex. Crim. App. June 20, 2007) (not designated for publication).

11. On September 16, 2009, the Court of Criminal Appeals denied all relief requested in the initial habeas application and dismissed the 2005 *pro se* filing as an unauthorized successive application. *Ex parte Roberson*, Nos. WR-63,081-01, WR-63,081-02, 2009 WL 2959738 (Tex. Crim. App. 2009) (unpublished).

12. On September 13, 2013, Article 11.073 of the Texas Code of Criminal Procedure took effect. Thereafter, Mr. Roberson obtained new federal counsel, appointed under the Criminal Justice Act (CJA). *Roberson v. Stephens*, No. 14-70033 (5th Cir. Mar. 14, 2016). New federal counsel approached the Texas Office of Capital and Forensic Writs (OCFW) about investigating a possible Article 11.073 challenge to the science that had been used to obtained Mr. Roberson's conviction

and about pursuing a claim of Actual Innocence. The OCFW agreed to assume responsibility for representing Mr. Roberson in state court.[1]

III. THE CURRENT SUBSEQUENT STATE HABEAS PROCEEDING

13. The current proceeding was initiated when a subsequent state habeas application was filed on Mr. Roberson's behalf on June 8, 2016. The application raised four claims under Texas Code of Criminal Procedure, Article 11.071, section 5(a) and Article 11.073. Those claims are:

- Claim One: New scientific evidence establishes by a preponderance of the evidence under Article 11.073 that Robert Roberson would not have been convicted.

- Claim Two: Because the State relied on false, misleading, and scientifically invalid testimony, Robert Roberson's right to due process under *Ex parte Chabot* and *Ex parte Chavez* was violated.

- Claim Three: Robert Roberson is entitled to habeas relief because he is actually innocent.

- Claim Four: Robert Roberson is entitled to habeas relief because his due process right to a fundamentally fair trial was violated by the State's introduction of false forensic science testimony that current science has exposed as false.

[1] At that time, Mr. Roberson's current counsel, Gretchen Sween, was employed by the OCFW as a Senior Postconviction Attorney and became his lead attorney. After Ms. Sween left the OCFW to reenter private practice, to ensure continuity of counsel, this Court granted a motion, on or around September 28, 2018, permitting the OCFW to withdraw and appointing Ms. Sween as substitute counsel.

The application was submitted to the Court of Criminal Appeals, along with a motion seeking a stay of Mr. Roberson's then-pending execution. The application was supported by several volumes of evidentiary proffers.

14. On June 16, 2016, the Court of Criminal Appeals granted the motion to stay Mr. Roberson's execution and entered an order remanding all four of his claims "to the trial court for resolution." *Ex parte Roberson*, No. WR-63,081-03 (Tex. Crim. App. June 16, 2016) (not designated for publication). In authorizing the four claims, the Court of Criminal Appeals had performed its gate-keeping function under Article 11.071 § 5(a). That gate-keeping function required determining whether the subsequent application "contains sufficient specific facts establishing" that a basis exists for raising claims not previously asserted in the applicant's prior application for habeas relief. The Court of Criminal Appeals expressly found that all four of the claims "satisfy the requirements of Article 11.071 § 5." *Id.*

15. After the remand order, the State filed an Answer. Attached to the Answer was an affidavit from Dr. Jill Urban, dated November 18, 2016. APPX100. Dr. Urban was the medical examiner who had performed the autopsy on Nikki Curtis on February 2, 2002 and who had, that same day, reached the conclusion that the manner of death was homicide. *See* APPX12; APPX101.

16. In an initial hearing following the remand, this Court determined that an evidentiary hearing would be necessary to fulfill the Court of Criminal Appeals'

directive that Mr. Roberson's claims be resolved. After several intervening events, the evidentiary hearing was scheduled to commence on August 14, 2018.

17. As part of preparing for the evidentiary hearing in this matter, Mr. Roberson's counsel asked, and was granted leave, to review the District Attorney's trial file. Among the items that Mr. Roberson's counsel sought to find were the missing CT scans taken of the decedent, Nikki Curtis.[2] After failing to find any CT scans in the State's file, a discovery motion was filed on Mr. Roberson's behalf, and was presented to this Court on August 14, 2018. After the motion was presented, the State announced on the record that it had exercised due diligence and yet had not found any additional materials relevant to this case. The Court then granted the motion. 2EHRR18-20.

18. On August 14, 2018, Mr. Roberson began by offering numerous exhibits into evidence to which the State did not object; the Court admitted the following into evidence at that time: APPX1-APPX12; APPX14; APPX15; APPX18; APPX19; APPX37-APPX50; APPX60-APPX62; APPX66-APPX90; APPX99; APPX100; APPX103. The parties then presented Opening Statements, and the presentation of evidence began. 2EHRR21-49.

[2] According to Applicant's counsel, when contacted directly, Palestine Regional Medical Center, which took two of the three sets of head scans, reported that these images had been "destroyed." Children's Medical Center of Dallas, which took the third set of CT scans, was also unable to locate these images.

19. Later that same morning, it was put on the record that the new District Clerk had informed the Court and the parties that additional materials, previously unproduced to Mr. Roberson, had been found in a locked room in the courthouse basement. Among those additional materials were envelopes that appeared to contain the CT scans that had long been missing. In light of this newly discovered, material evidence, Mr. Roberson made a motion to continue the evidentiary hearing, which was joined by the State. The Court granted the motion and agreed to adjourn to enable further discovery and due diligence in this matter. The Court also agreed to serve as Special Master so that the newly discovered evidence found in the courthouse, including the CT scans, could be copied and produced to both parties. 2EHRR85-87.

20. Meanwhile, on-going efforts to obtain relevant information from the Dallas County crime lab aka Southwestern Institute of Forensic Sciences ("SWIFS") continued, particularly in light of advances in scientific understanding since the time of trial, including recent research conducted by neuroradiologist Dr. Roland Auer that suggested Nikki's condition may have been caused by, or related to, the pneumonia that she appeared to have at the time of her death. 8EHRR13. Nikki's pneumonia was neither diagnosed nor treated, nor was it addressed during the autopsy or disclosed at trial. However, indications that Nikki did indeed have pneumonia are found in the autopsy report, which includes these notations:

"Sectioning of the lungs discloses a dark red-blue, moderately congested, slightly edematous parenchyma" and lungs have "Interbronchial aggregates of neutrophils and macrophages." APPX12. Macrophages are a sign of virus, and the pediatrician who testified at trial acknowledged that his notes stating that Nikki was "'free of illness'" at the time of her collapse, "should have [stated] 'viral illness.'" 42RR13. The Court granted an ex parte motion directing SWIFS to prepare and ship slides of lung tissue to Dr. Auer's laboratory so that he could apply new staining techniques to the lung tissue to better understand the nature of the pneumonia. *See* Supp CR. However, SWIFS thereafter disclosed that, pursuant to its "histology block policy," all of the biological materials collected during Nikki's autopsy had been destroyed after ten years (*i.e.,* circa 2012). 8EHRR170.

21. The parties were prepared to resume the presentation of evidence on May 11, 2020; but due to the COVID-19 pandemic, this Court, on April 6, 2020, entered an order granting an agreed motion to continue the evidentiary hearing. Because of state-, nation-, and world-wide disruptions caused by COVID-19 and measures taken to curtail its spread, the Court and essential witnesses had many demands on their time thereafter. But, eventually, the evidentiary hearing resumed on March 8, 2021, with some witnesses appearing via Zoom and some in person. 3EHRR-10EHRR. Among the numerous exhibits admitted into evidence and provided as demonstratives, were digitized copies of the CT head scans of Nikki

Curtis that had been found on August 14, 2018 in the courthouse basement. APPX70; 3EHRR9-10. The evidence was closed on March 17, 2021. 10EHRR246.

22. On December 13, 2021, the Court of Criminal Appeals entered an Order directing that the habeas record be completed and that this Court resolve the issues raised in this proceeding and return the case to the Court of Criminal Appeals on or before February 15, 2022.

23. The official Reporter's Record for this proceeding was conveyed to the parties on December 22, 2021. The parties submitted their Proposed Findings of Fact and Conclusions of Law on January 24, 2022. This Court then heard Closing Arguments on January 31, 2022.

IV. MATERIALS CONSIDERED

24. This Court has taken judicial notice of all records and filings in the trial, appeal, and post-conviction proceedings. This Court has considered all exhibits submitted by the parties and admitted into evidence. This Court has accepted all exhibits presented in the evidentiary hearing as substantive evidence and has considered all testimonial evidence received during the live hearings. Except as explained below, the Court finds the evidence to be credible.

25. For witnesses who did not testify during the evidentiary hearing but who submitted affidavits or declarations, the Court has assessed the credibility of those witnesses solely on the facts contained in their sworn statements, including

considerations of education, experience, and background for those witnesses presented as experts.

FACTUAL BACKGROUND

I. DECEDENT NIKKI CURTIS'S MEDICAL AND SOCIAL HISTORY

26. Nikki was born on October 20, 1999 to Gwendolyn "Michelle" Bowman, who was required to relinquish custody from her hospital bed. App2 2-3; 6EHRR147. Michelle had a history of drug addiction and prostitution and, when Nikki was born, Child Protective Services (CPS) had already removed two other children from Michelle's custody. 6EHRR149-153. Michelle's first child Christopher was born with fetal alcohol syndrome and diagnosed with narcolepsy; her second child had both fetal alcohol syndrome and a seizure disorder. 43RR104-108.

27. Michelle named Nikki after her boyfriend at that time, a man named Nick Curtis.[3] It was subsequently confirmed that Robert Roberson of Palestine, Texas was actually Nikki's biological father. 43RR130. From the time of Nikki's birth until she was approximately a year and a half, Mr. Roberson was in prison for a parole violation arising from a conviction for writing hot checks, and played no role in her care.

28. Nikki was released from the hospital to Larry and Verna Bowman, Michelle's father and step-mother. App2 2. At that time, the Bowmans were already

[3] Michelle's father, Larry Bowman, described her as having "loose britches" as an explanation for why she did not know who Nikki's father was at the time of her birth; "you name it and she probably did it," he said of his daughter, Nikki's mother. 6EHRR151-152.

responsible for Michelle's other two children (although the eldest son was soon removed from their home to foster care after allegedly sexually assaulting the younger one).[4] 43RR104-108; App2 40. 6EHRR152-153.

29. Mere days after Nikki's birth, she was taken in for medical care on October 28, 1999, for what proved to be the first of many infections that plagued her throughout her short life. 42RR23; SX43. At eight days old, she had a fever and her pediatrician noted a "likely bilateral otitis media" because her "TMs" or tympanic membranes (middle ear) were "erythematous and full" and "fiery red." APPX9.

30. By November 4, 1999—when Nikki was a few weeks old—she was the subject of a CPS investigation, in which the Bowmans were identified as potential perpetrators. App2 7. As part of this investigation, Nikki was subjected to a sexual-assault or "SANE" exam, due to allegations that her older half-brother, who himself had been sexually abused, might have sexually abused her. *Id*.; APPX15.

31. Four days later, on November 8, 1999, Nikki was brought to her pediatrician to have her ears rechecked. The pediatrician, Dr. Karen Ostrom, observed that Nikki's nose had a "moderate to large amount of yellowish white

4 In this proceeding, Larry Bowman described Nikki's oldest half-brother Christopher as having "alcohol down syndrome" and claimed that the boy, at age eight or nine, could not take care of himself and, while in the Bowmans' custody, had tried to molest his younger brother Matthew. After a few days, the Bowmans decided they could not "handle" Christopher and gave him up to the State. 6EHRR153-154; 6EHRR157.

mucous." The doctor also expressed concerns about Nikki being at risk for sexually transmitted disease due to her biological mother's history. APPX9.

32. Little over a month later, on December 21, 1999, Nikki was brought in for coughing to the point of throwing-up; she also had a fever. She was assessed with "bilateral otitis media and bronchiolitis." APPX9.

33. Two months after that, on February 22, 2000, Nikki was brought in again with colored mucus, a fever, inflamed ears, and lungs exhibiting "some coarse little airways and a few rhonchi." APPX9.

34. The next month, on March 24, 2000, Nikki was brought in with a complaint that she was not eating very well, had a history of fever and constipation, and still had an middle-ear infection. Later that same month, on March 31, 2000, she presented with a cough, congestion, a fever, "yellowish-green mucus," and TMs that were again "erythematous and bulging." The pediatrician noted that these infections were not responding to antibiotics. APPX9.

35. Less than a month later, on April 21, 2000, Nikki was brought in for a check-up; her pediatrician described her as having "resistant otitis media" and slow weight gain. She again had a fever. APPX9.

36. A couple of weeks later, on May 5, 2000, Nikki was brought in to her pediatrician for cough, runny nose, and poor appetite. Despite being on a new antibiotic, she still had "bilateral otitis media." APPX9.

37. Several days later, on May 15, 2000, Nikki was brought in again for "pulling on her ears" and her TMs were characterized as "erythematous & full bilaterally." Therefore, the pediatrician prescribed yet another antibiotic. APPX9.

38. Less than two weeks later, on May 23, 2000, Nikki was brought in to have her ears rechecked, and her pediatrician described her ear infection as "chronic purulent bilateral otitis media," as she had not responded to "4 different antibiotics." Nikki was referred to a specialist for "P.E. tube placement and myringotomy." APPX9.

39. At some point, Roberson's mother, Carolyn Roberson, had encouraged her son to seek custody of Nikki, as he was her biological father. 43RR121-122. A paternity test was ordered while he was still in prison. On or around May 26, 2000, as part of an ongoing custody dispute between the Bowmans and Carolyn Roberson, the court granted Mrs. Roberson visitation with Nikki every other Saturday. Mrs. Roberson had her first Saturday visit with Nikki on June 3, 2000. APPX76.

40. On June 5, 2000, Nikki's ears were still not clear, so she was taken back to the pediatrician. Yet another antibiotic was prescribed, Rocephin, a drug used to treat meningitis, among other things. A few days later, Nikki saw an ENT specialist, Dr. Melinda Duncan, "due to 6 ear infections in last 7 months." Nikki was given a preoperative diagnosis of recurrent otitis media and acute otitis media that was

resisting antibiotics. The specialist was informed that Nikki's brother was born with Fetal Alcohol Syndrome and had a seizure disorder. APPX9.

41. A few days before her ear surgery, Nikki was brought to the Palestine Regional ER by Verna Bowman as a result of a fall. Mrs. Bowman reportedly told hospital staff that Nikki had been in a walker, tripped, fell down some steps, and "hit head on concrete floor." Unidentified "abnormalities" were noted. APPX14.

42. Nikki had bilateral tympanostomies, during which ventilation tubes were inserted in both ears. In her first post-operative visit with the ENT on June 21, 2000, Mrs. Bowman reported that Nikki was still pulling on her ears and had been doing so for a couple of days. APPX9.

43. At that same time, June 2000, CPS investigated whether the Bowmans were abusing Nikki and her half-brother Matthew. App2 10. CPS records dated June 26, 2000, note that "these children"—Nikki and her half-brother—"have been surrounded by risks their entire lives." App2 44. Even though "significant risk factors were identified," the CPS investigation was closed in July 2000. App2 45.

44. On July 13, 2000, Nikki, then about 9 months old, was brought in for 4 episodes of vomiting, which her pediatrician concluded was "most likely viral etiology." Nikki was given 5 mg of IM Phenergan in the office and oral Pedialyte; she was sent home with "Phenergan 4-5 mg q4-6 hours as needed for vomiting." APPX9. Because of this illness, two days later, Mrs. Bowman asked that Mrs.

Roberson move her scheduled bi-monthly, two-hour Saturday visit with Nikki to the following week. APPX76.

45. The next month, on August 11, 2000, Nikki was admitted to Palestine Regional ER for a "choking" episode. She was brought in by Verna Bowman who reported finding that Nikki was "not breathing" and had turned "blue." A note in the hospital records states that "primary apnea for this age group is rare." APPX14.

46. A few days later, on August 14, 2000, Nikki was brought in to her pediatrician for a follow-up from the ER visit, at which time it was reported that Nikki had had 2 apnea episodes within a 24-hour period "with some reported cyanosis." Mrs. Bowman described having heard "a kind of a funny cry and turned around and [Nikki] was lying on her back on the floor again." Mrs. Bowman again described Nikki as having turned "blue." The pediatrician speculated that this might be seizure activity. Therefore, arrangements were made to have EEG and CT scans to see if it could be determined what was causing Nikki to stop breathing. APPX9.

47. Before the recommended testing occurred, Nikki was again rushed to the Palestine Regional ER on August 16, 2000, and admitted for another breathing apnea episode. A 15-18 minute sleep study was performed, but the EEG revealed no neurological abnormalities. APPX14. That day—August 16, 2000—Nikki's first known head CT scan was taken, by the Radiology Department of Palestine Regional Medical Center ("Palestine Regional").

48. On August 24, 2000, about a week after the first CT scan, Nikki's pediatrician, Dr. Ostrom, wrote a letter stating that Nikki was under her care for several apneic episodes and stated: "I feel like it would be in Nikki's best interest to not have to change environment and have her care shifted between different caretakers until such time we can determine the cause of her apnea and its' [sic] ultimate treatment." APPX90. Mrs. Bowman used the note from Dr. Ostrom to prevent Carolyn Roberson from taking Nikki and instead "went out of town" with Nikki. APPX76.

49. On September 19, 2000, Nikki was admitted to Texas Children's Hospital for an assessment related to the cyanosis and apnea issues. A pediatric neurologist prepared a report that stated the family had "brought the head-imaging with them," and "no evidence of mass lesions and normal architecture" were observed. Therefore, the neurologist concluded that the breathing apnea episodes were most likely "breathing-hold spells," although Nikki was not yet a year old. The neurologist's report states "no family members with seizures," yet Nikki's half-brother Matthew did have a seizure condition. The report also suggests that the neurologist was unaware of Nikki's history of chronic infections. APPX10.

50. On October 7, 2000, Mrs. Bowman directed Mrs. Roberson to sign "an agreement to accept total responsibility for Nikki's safety & welfare." APPX76.

51. Less than a week later, on October 11, 2000, Nikki was brought to the pediatrician after another episode of breathing apnea. But since Nikki had been cleared by a neurologist, the episodes were again dismissed as "breathing hold spells." APPX9.

52. Nikki's next reported illness was a month later, on November 14, 2000. She was brought to the pediatrician for cough and congestion of yellowish color. She still had "P.E. tubes in place." APPX9.

53. The next month, on December 11, 2000, Nikki was brought to the pediatrician with a fever, measured at 100.1, and yellow/green mucus was observed in her nose. APPX9.

54. The next month, on January 22, 2001, Nikki was brought to the pediatrician with a complaint that she was still having "breathing-hold spells," but, according to Mrs. Bowman, it was "not as bad as she used to." APPX9.

55. On February 17, 2001, Mrs. Bowman made a note that Mrs. Roberson came to pick up Nikki for a visit with "her son Robert." APPX76. Up to this point in Nikki's life, Mr. Roberson had played no role in Nikki's care. The acrimonious custody dispute between the Bowmans and Carolyn Roberson was still in process.

56. In early March of 2001, Nikki was brought to the Palestine Regional ER by Carolyn Roberson, upon observing an abrasion on Nikki's forehead. Mrs. Roberson suggested she feared abuse. Nikki was diagnosed with a contusion to the

head, and CPS was notified. APPX14. CPS records indicate concerns at that time that Nikki was not gaining weight and that visible bruises were observed on the face and torso of her half-brother Matthew, who also lived with the Bowmans. App2 10. The records reflect that a case worker had observed "a knot and a bruise" on Nikki's forehead, "a knot on the back of her head," and "a bruise on her mid back close to the spine." *Id*. The record further reports that Nikki "had to be rushed to the hospital" from the Bowmans' house "for choking on cigarette butts and rocks." *Id.* Nevertheless, CPS summarily closed the case.

57. Later that month, after a recheck by the ENT specialist during which Mrs. Bowman denied that Nikki had been having any problems with her ears, she was brought to the pediatrician a few days later, on March 29, 2001 for "pulling at ears." APPX9. At that time, Mrs. Bowman also claimed that Nikki had been having nightmares and made a comment about Nikki's father (Robert Roberson) getting out of jail and recently starting to have visits. Dr. Ostrom noted that Nikki's "nose is erythematous with some yellow crusting" and "right tympanic membrane is mildly erythematous." She then recommended that Mrs. Bowman "keep a diary of the nightmares to see when the visits are, when they are occurring, or if they are associated with anything else and perhaps we can find a pattern to her nightmares." APPX9. In fact, Mrs. Bowman had started keeping a diary several months earlier, in May 2000, after the court had awarded Carolyn Roberson limited visitation rights.

In the diary, Mrs. Bowman made notes of the Robersons' visits with Nikki; however, the entries do not include any references to nightmares. APPX76.

58. During a subsequent CPS investigation in April 2001, the Bowmans, who then remained Nikki's primary custodians, claimed that the seventeen-month-old Nikki was "playing with herself" and that it was "getting worse." App2 32. Mrs. Bowman also described Nikki reaching into her diaper and pulling out fecal matter. *Id.* Mrs. Bowman described Nikki patting herself on her private parts while in the bathtub or when her diapers were being changed. *Id.* Mrs. Bowman described an incident during which Nikki allegedly put her hands on Mrs. Bowman's "private area." *Id.* And Mr. Bowman stated that, while changing Nikki's diaper, she had reached up and put his hand on her "private parts." *Id.* Mrs. Bowman also complained that she felt Carolyn Roberson was intentionally returning Nikki after visits with the Robersons smelling of "Vanilla Fields cologne" knowing that Mrs. Bowman was allergic to it. *Id.* These concerns about Mrs. Roberson's cologne are also a recurrent theme in Mrs. Bowman's diary entries. APPX76.

59. On April 20, 2001, Nikki was brought to her pediatrician by Mrs. Bowman for vomiting, and Nikki's temperature was measured at 101.3 degrees. APPX9. She was given Phenergan 6.25 mg 1M x1 in the office then sent home with Phenergan suppositories and Bactrim. *Id*. Later that same day, Nikki was admitted to Palestine Regional ER for a UTI complaint; test results a few days later identified

"Enterococcus faecalis" (a type of bacteria that lives in the GI tract). APPX14. The next day, Mrs. Bowman asked Mrs. Roberson to forego her visitation day until the next week due to Nikki's illness, and Mrs. Roberson agreed. APPX76.

60. Less than two months later, on June 13, 2001, Nikki was brought in to her pediatrician by Mrs. Bowman who reported Nikki having "nightmares since March," which she suggested appeared during the week after Nikki had her Saturday visits with the Robersons. The pediatrician's notes reflect that Mrs. Bowman expressed concerns about possible abuse. APPX9; App2. Dr. Ostrom referred Mrs. Bowman to a social worker, Georgeann Mitchell, who shared office space with Nikki's pediatrician. APPX9. Nikki began having play therapy sessions with Ms. Mitchell who looked for signs that Nikki was being sexually abused. But, as Mrs. Bowman acknowledged, Mitchell never found any such evidence. 6EHRR194.

61. On June 30, 2001, Mrs. Bowman made her last known diary entry before Nikki's death. The entry states: "Mrs. Roberson and son Robert here for Nikki. They are not very friendly today. They just barely spoke to me. I wonder if it's because they have rec'd a letter from the Atty General – for child support. Nikki is always so very tired when she gets home. They won't let her take a nap. Then I have a difficult time with her until she finally falls asleep at bedtime." APPX76.

62. About a month later, on July 20, 2001, Nikki returned to the pediatrician with a low-grade fever of 100.9 degrees. Notes from this office visit refer to a "history of urinary tract infection in the past." APPX9.

63. The next month, on August 25, 2001, Nikki was admitted to Palestine Regional with a diagnosis of "abuse." She had been brought in by Carolyn Roberson accompanied by Robert after they had picked Nikki up from the Bowmans' house. Nikki had a black eye and abrasion on her mouth. CPS was notified. APPX14.

64. About a week later, on September 3, 2001, Nikki was admitted to Palestine Regional ER for "fever & nausea." She was brought in by the Bowmans and seen by a nurse named Andrea Sims and an ER doctor named Konjoyan. She was prescribed Phenergan suppositories, and the Bowmans were instructed to give Nikki "1/2 of Phenergan Supp. Cut long ways every 6 hrs for nausea and vomiting." APPX14.

65. Later that month, on September 12, 2001, Nikki was seen by her pediatrician's partner, Dr. John Ross, for the first time. She had been brought in for yet another earache, and he observed "left tympanic membrane has suppurative discharge." APPX9.

66. About a week later, on September 21, 2001, Nikki was brought back to the pediatrician for an ear recheck. Her temperature was measured at 100 degrees although she was currently on Omnicef and Ofloxacin drops. Dr. Ostrom observed:

"Left tympanic membrane has a weepy, soft pink mass present on the lower part of the tympanic membrane." Dr. Ostrom believed this looked like Nikki "has a granuloma[5] on the left tympanic membrane." Therefore, the pediatrician referred Nikki back to the ENT specialist. APPX9.

67. About a month later, soon after Nikki's second birthday, Nikki was brought in on October 30, 2001, for a cough she had had "for a month" and for a fever up to 103.3 degrees. Her temperature was measured in the office at 102.6 degrees. Nikki was seen on this occasion by Dr. Ross who observed "Right tympanic membrane is injected with poor mobility." He also noted "Nose with green nasal discharge." APPX9. The next day, Nikki was brought to the ENT specialist.

68. On November 7, 2001, Nikki had a follow-up appointment with pediatrician Dr. Ross, who observed that her ear infection was still present, as he observed: "right otitis media with effusion." APPX9.

69. Around mid-November 2001, Roberson formally obtained custody of Nikki as a result of the Bowmans' acquiescence. 43RR138-39; 6EHRR162. At this point, Nikki was two years old. According to Larry Bowman, he and his wife had never had any trouble with Mr. Roberson himself and had seen "no feeling that he

[5] A "granuloma" is a collection of immune cells, known as "macrophages," formed in response to chronic inflammation. Granulomas form when the immune system attempts to wall off substances it perceives as foreign but is unable to eliminate the threat. *See, e.g.*, https://en.wikipedia.org/wiki/Granuloma (last visited Jan. 18, 2022).

did not want his baby." 6EHRR162; 6EHRR176; 6EHRR194. But Nikki did not move in with her father who was then living in a small rental house with his then girlfriend Teddie Cox and her daughter and was supporting them relying solely on income from two paper routes. 42RR15. Nikki continued to be shuffled back and forth between the two sets of grandparents.

70. A couple of weeks later, on December 5, 2001, Nikki was taken to the ENT specialist for an ear recheck. While Mrs. Bowman reported that Nikki's ears seemed fine, the doctor's exam notes state that her tonsils are "quite large, but not inflamed." APPX9.

71. Two days thereafter, on December 7, 2001, Nikki was brought in to her pediatrician for cough and congestion. Dr. Ostrom noted that Nikki presented "with a history of a rash in the buttocks and diaper area and a lot of cough and congestion, mainly at night." "Nose is erythematous with yellow/green rhinorrhea." "She has multiple erythematous pustules and papules on the buttocks and perineum [area between the anus and the vulva]. There is some superficial peeling involved." Dr. Ostrom assessed Nikki's condition as follows: "Purulent Rhinitis with a cough, which is not too significant. In addition, it looks like she has Folliculitis and probably some infectious component to that in the diaper area as well." In addition to other medication, she was prescribed Phenergan with codeine. APPX9.

72. From January 25-28, 2002, Nikki was staying with her grandmother Carolyn Roberson. During that time, Nikki had a fever and diarrhea that was concerning enough that Mrs. Roberson, along with Nikki's father (Mr. Roberson), took Nikki to the emergency room on January 28th. APPX14. That day, which was less than three days before her collapse, Nikki's temperature was measured as 103.1 degrees in the Palestine Regional ER. She was treated by Dr. Konjoyan, who assessed her as having a viral infection. He prescribed Phenergan suppositories and Imodium—but the amount is not clear in the records. APPX14; 42RR33. Afterwards, Nikki was taken to the Bowmans while Mr. Roberson picked up Nikki's prescriptions. 41RR168.

73. The next day, January 29, 2002, the Bowmans took Nikki to the pediatrician's office. Nikki was seen by Dr. Ross. Mr. Roberson met the Bowmans at the office. 41RR10-11; 41RR29. Nikki had a high fever, measured at 104.5 degrees in the doctor's office. 41RR11; APPX9. Dr. Ross's notes suggest that Nikki's condition "may be viral etiology or may be unresolved upper respiratory infection." He prescribed Omnicef 125 mg, 4 cc b.i.d. and Phenergan with codeine. APPX9. She was then sent home. 42RR25.

74. The next night, on January 30, 2002, Mrs. Bowman called Mr. Roberson and asked him to pick up Nikki and take her to his house, although she was still sick. 41RR168; 42RR16; 42RR18; 42RR28; 42RR30; 42RR32. At the time,

Mr. Roberson was at the hospital where he had been staying overnight with his girlfriend who had just had a hysterectomy. 42RR133.

75. Mr. Roberson arrived at the Bowmans' house around 9:30 PM to retrieve his sick daughter. 43RR154; 41RR169. Although they knew that Nikki was sick, that Mr. Roberson's girlfriend was in the hospital, that he had never had sole responsibility for Nikki, and, according to Mrs. Bowman, believed that her father was causing Nikki nightmares, the Bowmans asked Mr. Roberson to drive out to their property 10 miles outside of town and retrieve Nikki. 6EHRR146.[6] Larry Bowman testified during this proceeding that they did not put Nikki to bed because, according to Larry Bowman, even though Mrs. Bowman was reportedly sick, they "did not go to bed that early" and Nikki "always" slept in the same bed with him and his wife. 6EHRR172.

76. Mrs. Bowman claimed at trial that, when Mr. Roberson arrived around 9:30 PM, he was "real polite" and sat "visiting" with them for a while before he left with Nikki. 43RR154. Mrs. Bowman agreed that that was "always" the way it was with Mr. Roberson. *Id.* Mrs. Bowman also claimed that Nikki did not want to leave

[6] In this proceeding, Larry Bowman claimed that his wife had never told him that Nikki was having nightmares that Mrs. Bowman thought were caused by Nikki being with her father or that Mrs. Bowman feared there might be sexual abuse. 6EHRR177-178. Yet Mrs. Bowman testified that she had told her husband about the nightmares and the therapy sessions with the social worker looking for evidence of sexual abuse. 6EHRR194-195. Although Mrs. Bowman's memory seemed impaired and she claimed to remember very little from the time around Nikki's death, she was clear that she remembered the social worker and sharing her suspicion about nightmares and possible sexual abuse with her husband back at the time. 6HRR191; 6HRR196.

with him that night. 43RR154-155. Yet Mrs. Bowman urged the sick child to leave with her father anyway because Mrs. Bowman was, reportedly, not feeling well. *Id.* Similarly, Larry Bowman testified in this proceeding that Nikki did not want to go with Mr. Roberson the night of January 30, 2002, but Mr. Bowman assumed that was because she did not want to be away from him and his wife. Even though he felt that Nikki "didn't want to go anywhere," he put her in the car to go with Mr. Roberson and said that he and his wife agreed that this was the thing to do with the child. 6EHRR165-166; 6EHRR176; 6EHRR178.

II. NIKKI'S COLLAPSE, LAST HOSPITALIZATIONS, AND THE STATE'S INVESTIGATION

77. At around 5:00 AM the next morning, Mr. Roberson was awoken by a strange cry. 41RR70; 41RR86-87; 41RR97; 41RR124; 41RR162; 42RR17; 42RR82. He found Nikki lying on the floor at the foot of the bed. *Id*. The bed consisted of a mattress and box springs that he had raised up using two layers of cinder blocks. The cinder blocks, which were visibly sticking out from under the bed, were Mr. Roberson's attempt to prepare for his girlfriend's return from the hospital after surgery. APPX40-45. When Mr. Roberson picked Nikki up off the floor, he saw a little blood on her mouth and a bruise on her chin. He wiped the blood off with a wet rag. Because she appeared to be okay, he put her back into bed and kept her up talking for a while. They both fell asleep again. When the alarm later woke him up around 9:00 AM, Mr. Roberson found Nikki unconscious and blue.

41RR168-171. He was scared; he called his girlfriend, Teddie Cox, who had more experience with children, at the hospital. *Id*. He told Ms. Cox that Nikki had fallen out of the bed and would not wake up, and he asked what he should do. *Id.* She told him to get Nikki to the hospital. *Id*. He called Mrs. Bowman to tell her to meet him at the hospital, telling her that Nikki had fallen off the bed and hit her head. 43RR155-156; APPX7. Ms. Cox called Mr. Roberson back and told him to hurry up after Mr. Roberson told her that Nikki "wasn't breathing and he couldn't get her to wake up." 42RR183.

78. When Mr. Roberson got Nikki to Palestine Regional, Ms. Cox met him in the parking lot in a wheelchair. Ms. Cox grabbed the limp child, and they went inside.

79. The first nurse to see Nikki testified that she was visibly blue from oxygen deprivation and appeared to be dead. 2EHRR52-53. The nurse, Kelly Gurganus, saw minimal bruising on her face, but she described the bruise she saw as looking like a handprint; she saw no black eye, no sign that she had been struck with a fist, no blood in her hair, no sign of broken bones. 2EHRR62-65. Nikki was soon whisked away and a "Code Blue" was initiated. In the ER exam room, it was observed that her eyes were already "fixed and dilated," indicating that her brain was not functioning. 2EHRR79; 2EHRR 82.

80. According to hospital records, Nikki was intubated by 9:50 AM and placed on a ventilator. APPX5. She was taken for CT scans at 10:10 AM. While getting x-rayed, it was observed that the breathing tube had been inserted wrong; it had to be pulled out and reinserted. She was returned to the ER at 10:30. But by 10:40, no change had been observed. *Id*. Arrangements were then made to transport her to Children's Medical Center in Dallas for further treatment. *Id.* She never regained consciousness.

81. According to Brian Wharton, then Palestine Police Department's Chief of Detectives and lead investigator for the Nikki Curtis case, everybody was upset to see a toddler in Nikki's condition in the ER. 7EHRR8; 7EHRR10.

82. Mr. Roberson consistently explained to medical personnel and law enforcement that he had been woken up around 5:00 AM by a cry from Nikki, that he found her lying on the floor near the foot of the bed, that he had wiped a little blood off her mouth, and that he then tried to keep her up because she had hit her head. 41RR70; 41RR97; 41RR124; 41RR160-162; SX37; APPX7. He also consistently reported that, when an alarm woke him up later (some time around 9:00 AM), he found Nikki unconscious. 41RR165-169. The information he reported, however, was not given credence. 41RR69; 41RR73; 41RR100; 41RR125; 42RR17; 42RR82; 43RR153. Mr. Roberson was also assessed negatively by numerous witnesses, including hospital personnel, for not displaying what they perceived was

sufficient or appropriate emotion. 41RR66; 41RR70; 41RR71; 41RR86; 41RR87; 41RR92; 41RR98; 41RR121-122; 41RR156; 41RR160; 42RR184; 42RR190.

83. About an hour after Nikki had been placed on a ventilator, a self-described "SANE nurse," Andrea Sims, filled out a Physical & Sexual Abuse Medical protocol. SX3; APPX6. Nurse Sims claimed to have observed "anal laxity" and "anal tears" that she thought indicated sexual abuse. *Id.* But even before her exam, Nurse Sims and another nurse had already made the assumption that Nikki had been the victim of a crime and alerted the police. 41RR69-70; 7EHRR12. When the police arrive soon thereafter, they were told that Nurse Sims claimed to have seen "anal tears". 7EHRR11; 7EHRR12.

84. The social worker put on the case at Palestine Regional was Georgeann Mitchell, the same social worker whom the Bowmans had hired a few months before to try to find evidence that Nikki was being sexually abused. She conferred with Nurse Sims and others about Mr. Roberson. 41RR91; 41RR123; 6EHRR194.

85. There was no visible blood, cuts, or abrasions on Nikki's head. But Nurse Sims had noted that the back of Nikki's head felt soft or "boggy." 41RR119. After the police arrived, hospital personnel shaved the back of Nikki's head, revealing a bump or "goose egg" on the back of her head, suggesting an impact and "mushiness" that proved to be internal pooling of blood under the scalp. 41RR72; 41RR134. The CT scan showed no skull fractures. APPX70.

86. While Nikki was still being treated, Mr. Roberson voluntarily led police officers to his house to show them where he had found Nikki after her fall. 41RR156; SX24-SX35. The lead investigator, Brian Wharton, testified that the bed's height was 22 or maybe 24 inches off of the ground and that there was a thin carpet over a hard wood floor of a "pier and beam home." 41RR162-163; 41RR157. While at the house, Mr. Roberson gave the police the washcloth he had used to clean Nikki's mouth—and they took that, and other items, for testing. 41RR187.

87. Detective Wharton testified in this proceeding that if Mr. Roberson had not pointed out the washcloth and bedsheet with small amounts of blood on them, the detectives would not have noticed them. There were no pools of blood anywhere and no signs of violence. 7EHRR23-24; 7EHRR26; 41RR187. There was also nothing suggesting that the place had been scrubbed clean. 7EHRR26. The detectives expressly looked for evidence that Nikki had been thrown into a wall or something of that nature. They found nothing. 7EHRR26-27.

88. The small amount of blood on the wash rag ultimately matched Nikki's DNA. 43RR93-94. Testing of the sheets from the bed and swabs and cultures taken from Nikki failed to confirm Nurse Sims' hypothesis of sexual contact. 43RR95; APPX61 & APPX62.

89. Shortly after Mr. Roberson took the police to his house, he voluntarily followed them to the police station. 41RR164. During an interview, he was told that

Nikki's injuries were inconsistent with a short fall, and he was pressed to tell the officers what else could have happened to hurt her while she was with him. SX37. In a statement typed up by police, Mr. Roberson described what had happened after Mrs. Bowman had asked him to come get Nikki the night before, described the aftermath of Nikki's fall around 5:00 AM, and described waking up later to find her "blue." *Id.*; 41RR165-169. He added that "[t]his morning when she wouldn't wake up, I crawled up on the bed and grabbed her face and shook it to wake her up. Then when she didn't wake up I slapped her face a couple of times." 41RR170. The police investigation was minimal as they concluded right away that "[h]is story" about falling out of a bed "was not consistent with the magnitude of the injuries." 41RR176; 41RR177.

90. Meanwhile, because Palestine Regional did not have the capabilities to treat the condition observed in Nikki, arrangements were made for her to be transported by ambulance from Palestine Regional to the Children's Medical Center in Dallas. There are no records of what treatment was provided to her or how she was secured during the approximately 120-mile trip from Palestine to Dallas.

91. Once at Children's Medical Center, Nikki was put through numerous procedures. Hospital records indicate that an ICP monitor was placed in her head by neurosurgery to monitor the pressure inside her skull. APPX11. These same records show that staff at the new hospital were told that Nikki had been "**in good health**

until yesterday [1-31-02] AM when she was brought to an outside ER unresponsive with fixed and dilated pupils." *Id.* Although the hospital records show that chest scans had revealed signs of infection and "perihilar opacities" that might be related **"to pneumonia or edema,"** child abuse was suspected per the social work department. *Id.* An emphasis was placed on the "ophthalmology consult finding" of retinal hemorrhages and the severe internal brain swelling reflected in the most recent CT scan that were seen as inconsistent with the "history provided by family at presentation." *Id.*

92. During interviews at the police station, Mr. Roberson had told officers that he "wanted to go to Dallas to see Nikki." 41RR172. But Children's Medical Center records indicate that a social worker in Palestine, Georgeann Mitchell, who had been seeing Nikki at the request of the Bowmans, had told staff at Children's Medical Center in Dallas that Mr. Roberson was being investigated and was not allowed to visit Nikki. *Id.*

93. The next day, Nikki's case was referred to Dr. Janet Squires, a pediatrician who served as a "REACH"[7] consultant within Children's Medical Center. APPX11; 42RR90. Hospital records indicate that the Bowmans asked for REACH personnel to contact their attorney to confirm that they had guardianship and would be able to make end-of-life decisions affecting Nikki. The Bowmans were

[7] "REACH" stands for "Referral and Evaluation of At Risk Children." 42RR92.

consulted throughout the final process, and a note was made that Nikki's father only got custody "after getting out of prison." *Id.* Before undertaking her examination, Dr. Squires made the following notes:

- "3 yr old girls [sic] in ICU, considered terminal because of inflicted head trauma"
- Issues: "Laceration to anus" "anal tears seen" in Palestine Regional
- "**dx shaken/impact head trauma**" "happened after 1/30 10 PM"

Her notes also indicate that she had been given contact information for Detective Wharton with the Palestine police. *Id.*

94. Dr. Squires' post-examination report, SX45, noted:

- An anal exam shows "no significant bruising";
- "There is a small laceration around the anus, which could be the result of external trauma but can also be seen in children with difficult bowel movements. I can not make a definitive diagnosis of child sexual abuse."
- "no obvious fractures, but a large amount of soft tissue swelling over the scalp in the right posterior aspect";
- "extensive bi-lateral retinal hemorrhages";
- "**Massive rotational forces were the likely mechanism** to cause this brain injury, and the pattern is indicative of a **shaken impact syndrome**."

Id. (emphasis added); *see also* APPX66.

95. Nikki was pronounced dead on February 1, 2002, after a "brain death protocol" was initiated around 7:00 PM. SX48. Mr. Roberson was prevented from

going to Dallas to visit Nikki; he was instead arrested the same day his daughter was declared dead. The arrest warrant cited Mr. Roberson for capital murder and identified Nurse Andrea Sims, Verna Bowman, police officers, and Dr. Janet Squires (the REACH consultant) as having provided supporting evidence. Affidavits from investigator Joe Berreth and from Dr. Squires were part of the arrest warrant. APPX60. Dr. Squires' affidavit included these medical opinions:

- "[The] diagnosis is massive brain injury. The only reasonable explanation is trauma. The medical findings fit a picture of shaken impact syndrome. There was some flinging or shaking component which resulted in subdural hemorrhaging and diffuse brain injury. There was also an area of impact in the right back of the head."

- "After the trauma event, the child would have been very abnormal. If the child was well at 10:30 PM on 1/30/02, it can be said the trauma event occurred after the time period."

- "The medical findings are not consistent with the history of a fall from a bed."

APPX60.

96. Before the autopsy was performed, a CPS investigation was initiated. The resulting report stated that the suspected cause of Nikki's death was "Shaken Baby Syndrome" and "blunt force trauma" to the back of her head. App2.

97. An autopsy was performed the next day, February 2, 2002. APPX12. The medical examiner who performed the autopsy, Dr. Jill Urban, concluded that the cause of death was "blunt force head injuries" resulting from "homicide." Dr. Urban reached this conclusion the same day that she performed the autopsy before

the results of testing she had requested were available. APPX99. Her autopsy report includes the following notations:

- "The neck is unremarkable"
- "The external genitalia, anus, and perineum are unremarkable"
- "Some head contusions"
- "no skull fractures"
- "no extremity fractures"
- Frenulum—"acute hemorrhage, edema, and acute and chronic inflammation"
- "extensive hemorrhage into subcutaneous fat"
- "retinal and perineural hemorrhage"

APPX12. In an entry describing Nikki's lungs, Dr. Urban included the following unexplained entry: "Interbronchial aggregates of neutrophils and macrophages." *Id.*

III. THE STATE'S EVIDENCE AT TRIAL IN SUPPORT OF ITS THEORY OF GUILT

98. The State posited that Nikki's death was caused by the intentional infliction of a combination of violent shaking and battery that it attributed to Mr. Roberson. There were no witnesses to the events that took place in the hours before he had woken up, found his daughter unconscious, and taken her to the Palestine Regional ER on January 31, 2002. Therefore, the State relied primarily on testimony from medical providers and experts to support its causation theory.

A. The State's Reliance on Medical/Scientific Testimony at Trial

99. The State's first witness at trial with **Kelly Gurganus**, an emergency room nurse who was the first to encounter Mr. Roberson and his girlfrirnd, Teddie Cox, holding a limp child. 41RR63. By the time of trial, Ms. Gurganus had been a nurse for approximately five years. Ms. Gurganus was the only medical witness who observed Nikki before triage began. She did not see any significant bruising, only a slight bruise on her face and blue lips indicating that Nikki had not been breathing. 41RR74-76.

100. At trial, Ms. Gurganus described Ms. Cox as saying "very nonchalantly" of the child: "'She's not breathing.'" 41RR64. According to Ms. Gurganus, "most of the time," parents would be "screaming at the top of their lungs." 41RR66. Ms. Gurganus dismissed Mr. Roberson's explanation that Nikki had fallen out of bed and discredited his expression of concern. *See* 41RR69 (dismissing his reference to a fall: "Ma'am, if I'd known … she'd fallen off the bed this far … I would have never let her sleep with me."); 41RR73 (dismissing his expression of concern: "You know, I love my little girl. I would never mean to hurt her.").

101. Upon seeing Nikki unconscious, Ms. Gurganus told the jury "I felt like basically spitting in his face[.]" 41RR73.[8] She also admitted that "[a]ny time a child is injured it upsets anyone." 41RR79.

102. Additionally, Ms. Gurganus noted that she learned that this same child had been in the emergency room two days before for an infection "and the doctor [Dr. Konjoyan] was concerned that he might have missed something." 41RR68; *see also* 41RR77 ("When he told me, Dr. Konjoyan, I was standing beside him, he said, 'Oh, my God.' I mean that was his words to me, 'I just saw this child two days ago."). Ms. Gurganus rejected at the outset that a fall could explain Nikki's condition: "no one falls off the bed that far with that type of injury that it appeared at that time to be[.]" 41RR69. She alerted the police immediately. 41RR69-70.

103. The State next called **Robbin Odem**, Chief Nursing Officer for Palestine Regional, who had not examined Nikki. 41RR82-83; 41RR87. Ms. Odem noted Mr. Roberson's emotionally flat affect: he was "[p]robably somewhat more calm than I would be." 41RR86. She dismissed his expressions of concern for Nikki. 41RR93.

104. Ms. Odem testified that Mr. Roberson had said that Nikki had fallen off the bed, that he saw blood on Nikki's mouth and had cleaned it off, that he thought

[8] Although the jury was instructed to disregard that statement, the statement is relevant as indicative of this witness's state of mind.

she must have hit the table when she fell off the bed, and that she had a bruise on her cheek and under her chin. 41RR86-87. Ms. Odem concluded at the outset that a child could not sustain injuries of this type from falling off a bed. 41RR89. She thought it was odd that Mr. Roberson said that he had kept Nikki up for a few hours after the fall. 41RR95. Ms. Odem too was convinced Mr. Roberson had done something to harm Nikki based in part on his explanation of a fall from a bed: "I guess if my child fell off the bed, which they have many times, I just don't feel like that if they fell off the bed and got hurt that I was going to say, 'If something happens to them I'll never forgive myself.'" 41RR99.

105. Next the State called **Andrea Sims**, an emergency room staff nurse and self-professed "Sexual Assault Nurse Examiner" or "SANE". Sims testified at great length about her hypothesis that Nikki had been the victim of sexual abuse, although no other medical professional supported her hypothesis. 41RR101-150. Although she claimed on direct examination to have been certified as a SANE for four years, Nurse Sims admitted on cross-examination: "I am not actually certified as a SANE nurse." 41RR144. Nurse Sims performed her "SANE exam" in the ER after Nikki had been intubated and thus after the breathing tube had been taped around her head to ensure that it stayed in place. 41RR112-113. She said that she undertook her exam at the request of the police—whom she, along with Kelly Gurganus, decided should be contacted before any examination had taken place. 41RR115; 41RR122.

106. Before doing her SANE exam, Nurse Sims had already concluded that "this looked like an intentional injury." 41RR115; *see also* 41RR115-20; 41RR124; 41RR141.

107. Nurse Sims concluded that Nikki's condition arose from an intentional injury because she felt Mr. Roberson "didn't appear as upset as other parents that I've seen with injured children." 41RR121. She told the jury that she only "noticed that he was crying after the police arrived." 41RR122.

108. Nurse Sims also dismissed the notion that Nikki had been injured as a result of a fall. 41RR124-125. She believed that these kinds of head injuries "are usually from a massive car wreck . . . . something that you have a massive impact." 41RR123.

109. Nurse Sims testified that she had observed some "superficial" "anal tears" and what she characterized as "anal laxity." Based on this evidence, she concluded that the child had been repeatedly "penetrated." 41RR127; 41RR130; 41RR143. She later admitted that such tears could also have been "caused by hard, large stool." 41RR146. Nurse Sims claimed that she had observed redness around the vagina, but she saw that as "more of a hygiene problem than any sexual assault." 41RR129. Nurse Sims also testified about a torn frenulum,[9] yet she did not actually see a torn frenulum at the time of her examination of Nikki because Nikki had been

[9] A frenulum is a small fold of skin beneath the tongue or between the lip and the gum.

intubated an hour before Nurse Sims conducted her examination.[10] 41RR127; 41RR137 (admitting that she did not see Nikki without the scope in her mouth). Nurse Sims stated that "a torn frenulum is usually caused by something forced into their mouth" (such as a breathing tube) but in "[her] training it is something we look for as a sign of sexual assault." *Id.*

110. As part of her SANE exam, Nurse Sims took some swabs so that a lab could look for semen. 41RR143-44. No semen or spermatozoa was ultimately found. 43RR95. Those negative results were not, however, incorporated into her "SANE" report. 41RR149-150.

111. The State also called **Jonathan Ross, M.D.** Dr. Ross shared a practice with Nikki's pediatrician, Karen Ostrom. Dr. Ross testified because Dr. Ostrom had been in a car accident and was unavailable at the time of trial. 42RR2. Dr. Ross acknowledged that his partner's records indicated that Nikki had been treated numerous times in her short life—he counted 28 times. 42RR6-7 (mentioning six or seven of the infections in her first six months of life treated, unsuccessfully, with multiple antibiotics); *see also* 42RR23. Dr. Ross mentioned the breathing apnea that Nikki started experiencing when she was nine months old, which had prompted Mrs. Bowman to bring Nikki in after she "found [Nikki] laying face on the floor" then

[10] The Palestine Regional records do not indicate that anyone reported seeing a torn frenulum when Nikki was admitted. *See* APPX5.

"turned her over and she appeared to be blue and she appeared not to be breathing." 42RR7. Dr. Ross acknowledged that Nikki had had "several of these episodes"—when she would cry out then "turn blue and become limp." 42RR9. Although he admitted that there was some concern that Nikki might have had a seizure, he found that her history of inexplicably ceasing to breathe was irrelevant to explaining her death. 42RR10-15.

112. Dr. Ross noted that Nikki had been in the ER two days before her death "with a week[long] history of vomiting and diarrhea" and then brought in for a follow-up the day before [her collapse], at which time her temperature had been measured as "pretty high," that is 104.5 degrees. 41RR11. Dr. Ross saw Nikki that day, and he prescribed an antibiotic—although he felt the infection was "a viral illness." He also prescribed some cough syrup with codeine, about which he said at trial: "Sometimes we're treating ourselves." *Id.*; *see also* 41RR26 (admitting that codeine can depress the central nervous system).

113. Dr. Ross happened to be at the hospital on January 31, 2002 when there was a call from the ER about a child in respiratory distress. 41RR12. That child proved to be Nikki. Dr. Ross made notes for the treating physicians, but admitted that he failed to proofread them at the time. 42RR13. Therefore, he failed to catch several mistakes, including notes about when, where, and why Nikki had recently been treated. *Id.* He seemed to notice the mistakes for the first time while testifying.

He testified that, although he wrote that Nikki had been "'free of illness,'" "[t]hat should have been 'viral illness.'" 42RR13. Additionally, he failed to include a note that Nikki had had a fever when he saw her, although her temperature had been measured as 104.5 degrees. 42RR38. Dr. Ross acknowledged that, when Nikki was brought in on January 31, 2002 unconscious, her infection was still present. 42RR16; 42RR18; 42RR28; 42RR30; 42RR32; 42RR39. At the time of the last hospitalization, Nikki had an ear infection that had not been present a few days earlier, suggesting that the infection was spreading, not abating. 42RR33.

114. Dr. Ross's perception of Mr. Roberson was different from the nurses'; Dr. Ross repeatedly described Mr. Roberson as "distraught." 42RR13; 41RR15. Dr. Ross also admitted that a viral condition could progress quickly and leave a child virtually lifeless, yet he suggested that he ruled out the possibility that her illness had caused her terminal condition, while later admitting that he had no experience in pathology or forensic medical examinations and thus was not qualified to offer these opinions. 42RR14; 42RR20; 41RR25. Dr. Ross testified that the report that Nikki had fallen off the bed was, in his view, "inconsistent, for what I was seeing." 42RR17. He suggested that "[u]sually falls, at least in my experience, are bigger falls, falls onto concrete from a distance or some hard surface, fall against something hard, sharp." 42RR18.

115. According to Dr. Ross, a CT scan of Nikki's head taken at Palestine Regional revealed "a large subdural hematoma" and "a lot of edema of the brain tissue." 42RR19. Dr. Ross concluded that these injuries had been intentionally inflicted. 42RR21. He also admitted that the legal requirement to report suspected child abuse can make a person "jump at a child abuse diagnosis." 42RR21. He saw no fractures of the skull. 41RR31.

116. The State asked Dr. Ross to opine about whether Nikki had been sexually assaulted. 42RR22. Dr. Ross responded: "I don't have any opinion." *Id.* Contrary to Nurse Sims' testimony, he acknowledged that chronic diarrhea, as Nikki had had during the week of her death, can cause the skin in the anal region to "be broken down," *i.e.*, to tear. 42RR36.

117. The State also relied on the testimony of **Dr. Thomas Konjoyan**, the emergency room physician who had treated Nikki at Palestine Regional on January 28, 2002—two days before she was brought in unconscious—for "flu, diarrhea, vomiting." 42RR80-81. Dr. Kojoyan was also in the ER when Nikki was brought in unconscious on January 31st. He observed "some bruising around the left side of her jaw," which he did not attribute to a beating. 42RR83; 42RR87. Upon noting "fluid behind the scalp," he requested a CT scan of her head, which was taken, but not admitted into evidence. 42RR83-84. He did not feel that her injuries matched the history of "possibly fall[ing] out of bed." *Id.* Dr. Konjoyan saw swelling of the brain

and a subdural hematoma and concluded that the injuries "did not result from a fall out of bed." 42RR85. He claimed that the internal injuries could not be from a short fall: "[t]hat would basically be impossible[,]" "extremely implausible," "very implausible," "very unlikely." *Id.* He admitted that the records showed that the intubation process had initially been mishandled such that medics had had to pull the breathing tube back out and then reinsert it down Nikki's throat. 42RR87.

118. The State next called **Dr. Janet Squires**, a pediatrician then employed by Children's Medical Center in Dallas. 42RR91. She was the head of "REACH" at Children's Medical, a clinic for "referral and evaluation of at risk children." 42RR92. She was "the main doctor that examines children for evidence of child sexual abuse[.]" 42RR118.

119. Dr. Squires saw Nikki on February 1, 2002, relying on Palestine Regional's ER records and conversations with the Bowmans. 42RR95-96. She found "minimal" bruising, a "little chin abrasion," "no scars, no unusual bruising or anything." 42RR96. She found no evidence to support the sexual abuse allegation. 42RR97. Although the State pressed her to explain why she did an anal exam, she insisted that, although she had done one, she had concluded that there had not been a sexual assault. 42RR99. The State then asked her to opine as to whether she had seen instances of sexual assault even without "any physical manifestations when you visual [sic] the anus?" 42RR100. Dr. Squires responded: "What I saw was a tiny

little laceration and I bet every mother knows what I'm talking about . . . . very tiny and superficial and probably not considered to be significant." 42RR100. But the State further pursued this line of inquiry, speculating that maybe there had been tears that had healed in a day. 42RR101. Dr. Squires rejected that hypothesis. *Id.*

120. Dr. Squires reported that the CT scan she saw revealed "no fractures," but showed subdural blood, edema, and "very obvious retinal hemorrhages." 42RR102-105. She concluded that the "medical findings" were "**a picture of shaken impact syndrome**" aka "**shaken baby syndrome**." 42RR105-106 (emphasis added). She explained her opinion that Nikki's injuries were caused by "very forcefully" shaking the head back and forth. 42RR106. The prosecutor emphasized the triad of symptoms observed in Nikki—"subdural hemorrhages, the retinal hemorrhages, and the brain swelling"—and Dr. Squires explained her view that they indicated "shaking[.]" 42RR107. Dr. Squires also rejected the notion that such injuries could arise from a fall: "We see children fall out of windows and all sorts of things and we know what an impact injury looks like[.]" 42RR108. The "proof" of shaking, for her, was the broken blood vessels and blood "over the top of the brain." *Id.* She also opined that, immediately after such a shaking incident causing a "deep brain injury," the child "would not have been normal." *Id.* The kind of "shaking" that Dr. Squires envisioned was "a very violent forceful act." 42RR114. She then agreed with the defense attorney that what she saw when examining Nikki

were symptoms "classically consistent with injuries from rotational force" caused by shaking. 42RR120. She saw "no other indication of traumatic injuries"—"no bruising" "no fractures" "no old fractures"—therefore, she concluded the injury was caused by violent shaking. 42RR123.

121. Dr. Squires was asked about the torn frenulum and whether it was indicative of abuse. Dr. Squires acknowledged that a torn frenulum "can be an accident. There are ways you can fall against your lip or you can fall against something" and that "I don't think a torn frenulum in and of itself can be said to be abuse[.]" 42RR111; 42RR113. Dr. Squires again attested that she did not see the tiny "anal tears" as indicative of sexual abuse: "a lot of times many children will get little, tiny, little tears in the skin, sometimes particularly if they're having a difficult bowel movement." 42RR120.

122. The State's last medical witness was **Dr. Jill Urban**, a forensic pathologist employed by the Dallas County Medical Examiner at SWIFS aka the Dallas County crime lab. 43RR64. Dr. Urban walked the jury through the autopsy photographs she had taken, which were admitted into evidence. 43RR69-86; SX49-SX72. Dr. Urban stated that these photographs, taken during the autopsy performed more than two days after Nikki's initial hospitalization, accurately depicted Nikki's injuries when they occurred. 43RR75-79. Dr. Urban concluded, as a result of the autopsy that she had performed, that Nikki's death was caused by "blunt force" and

she then defined the term as the result of impact *and* violent shaking. 43RR78-79; 43RR86. In her opinion, it was "not unusual" that this kind of serious injury was not accompanied by any fractures to the skull, because it is the shaking that causes the injuries that ultimately kill the child. 43RR79-81. Dr. Urban opined that it was not unusual for a child to have this kind of serious internal injury without neck injuries or broken bones because, in her opinion, violent shaking can cause that kind of damage. 43RR82. She explained her understanding that, "if the child is shaken, it's this very large object sitting on a fairly weak neck"—and so the neck is protected but the head is not. *Id*. She did not explain how this analysis applies to a toddler like Nikki, as opposed to an infant; nor did she explain how a "fairly weak neck" is "protected" during shaking but the anatomy inside the skull is not.

123. Dr. Urban found no evidence of old injuries, healed bone fractures, scar tissue, or other trauma and acknowledged that some of the small bruises to the neck and face area could have been caused by attempts to resuscitate Nikki. 43RR95-96. These negative findings reinforced her view that the cause of death resulted from violent shaking. 43RR82. She emphasized the triad of symptoms of retinal hemorrhages, subdural hemorrhage/hematoma, and cerebral edema or brain swelling. 43RR84-85. Dr. Urban also opined that, after being shaken, Nikki's injuries would have been immediately apparent—reflected in "a change in the level

of consciousness." 43RR81. In her view, immediately after the event that caused this injury, Nikki would have shown clear signs of impairment.

124. Dr. Urban testified that she did not see any injuries to the anal area or the genitalia. 43RR83; 43RR92; 43RR95-96. She testified that no semen or spermatozoa was found on Nikki. 43RR95-96. She admitted that she saw no injury suggesting sexual assault although she agreed with the prosecutor that a sexual assault might have happened even if there was no physical evidence of it. 43RR97.

B. The State's Reliance on Lay Witnesses at Trial

125. In addition to the medical testimony, the State put on several lay witnesses to try to portray Mr. Roberson as someone who had previously lost his temper with Nikki. These witnesses were his former girlfriend Teddie Cox, her minor child (Rachel), her minor niece (Courtney), and Verna Bowman. The two minors were asked to use a teddy bear to demonstrate how they had supposedly seen Mr. Roberson shake Nikki in the past. 42RR52; 42RR69-71.

C. No Alternative Causation Defense at Trial

126. There was no direct evidence that Mr. Roberson had inflicted any injury to Nikki. In his initial statements to the police, after he was pressed for some explanation as to how Nikki had been hurt after being told that her injuries were inconsistent with a fall, he stated that "[t]his morning when she wouldn't wake up, I crawled up on the bed and grabbed her face and shook it to wake her up. Then when

she didn't wake up I slapped her face a couple of times." 41RR170; APPX7; APPX8. This statement was Mr. Roberson's only admission that he took action that could have injured Nikki—but only after he had already found her unconscious. He consistently maintained his innocence.[11]

127. Despite Mr. Roberson's not-guilty plea and rejection of a plea deal, defense counsel, in Opening Statements, conceded the State's shaken baby/shaken impact theory was the cause of death: "This is, however, unfortunately a shaken baby case. The evidence will show that Nikki did suffer injuries that are totally consistent with those applied by rotational forces more commonly known as shaken baby syndrome." 41RR57-58. Defense counsel also conceded "that this child did not die from a fall of 22 inches." 41RR60. Defense counsel reminded the jurors that they had all 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." 41RR61.

[11] In this proceeding, the State has relied on a coerced "confession" that defense punishment-phase witness Kelly Goodness reputedly obtained from Mr. Roberson. The reasons to give no credence to Dr. Goodness's testimony is discussed below in the "Findings of Fact Regarding State's Reliance on Opinions about Mr. Roberson's Demeanor and Purported 'Confession'."

128. While cross-examining the State's child abuse expert, Dr. Squires, defense counsel expressed agreement that this was a "classic" shaken baby case during the following Q & A:

> Q. In talking with you before, you told me that it's your best feeling that the brain injury occurred by virtue of the rotational force of the shaking; is that correct?
>
> A. Yes.
>
> Q. Not by the impact that's shown from the back of the head?
>
> A. I believe it's a combination. I do not think an impact alone. There was more than an impact to explain this. But there was clearly an impact and I think the moment of impact is when a lot of the damage could be done.
>
> Q. In many respects what you saw with this child are classically consistent with injuries from rotational force; is that correct?
>
> A. Yes.

42RR119-120

129. Defense counsel's cross-examination of Dr. Urban, the medical examiner who had performed the autopsy and one of the State's two non-treating medical experts, did not explore the history of an accidental fall that Mr. Roberson had reported, the injury potential of an accidental fall, or attempt to situate that fall in the context of Nikki's chronic and current illnesses and in the context of the medications she had been given.

130. In Closing Arguments, defense counsel again conceded that this was an shaken baby case, suggesting only that a capital murder conviction was not the way to address this widespread social problem:

> Shaken baby syndrome has become an unfortunate issue in our society. The foundation says over 10,000 cases occur a year. As I said also earlier in this trial, this is not the type of tool to deal with this situation.

49RR34.

131. The defense did contest the allegation that Nikki had been sexually assaulted, but only through its cross-examination of Nurse Sims. 41RR137-150.

132. Although the evidence was not before the jury during the guilt-phase, the degree to which defense counsel embraced the State's causation theory is suggested by defense counsel's decision to retain and then present in the punishment-phase an "expert" (Dr. Kelly Goodness) who presumed that it was true that Mr. Roberson had "violently shaken" Nikki and then refused to accept any explanation to the contrary. 48RR24. This defense expert's approach to a forensic psychological exam was, as established in this habeas proceeding, contrary to the ethics of the profession. 7EHRR133.

FINDINGS OF FACT REGARDING THE CHANGE IN SCIENTIFIC UNDERSTANDING SINCE 2003, THE INACCURATE EVIDENCE PRESENTED AS "SCIENCE" AT TRIAL, AND THE NEW EVIDENCE FALSIFYING THE STATE'S THEORY OF GUILT

133. The Court finds and concludes that there have been significant, material changes in the relevant science since Mr. Roberson's 2003 trial; that Mr. Roberson has adduced considerable new evidence from credible and highly qualified experts that Nikki's death was not a homicide; and that Mr. Roberson has adduced considerable new evidence that the 2002 autopsy findings regarding cause and manner of death were unreliable. In making these findings, the Court has relied on the testimony of the following experts who presented live testimony and/or credible sworn reports in this cause: pediatric forensic pathologist Dr. Janice Ophoven; forensic pathologist Dr. Carl Wigren; forensic pathologist Harry Bonnell; forensic pathologist Dr. John Plunkett; biomechanical engineer Dr. Ken Monson, radiologist Dr. Julie Mack; and neuropathologist Dr. Roland Auer.

I. CHANGES IN THE RELEVANT SCIENTIFIC UNDERSTANDING

134. The Court finds and concludes that, in 2002-2003, when Mr. Roberson was tried, the medical community was advising doctors to infer that a child had been violently shaken when the child presented with a brain condition involving three components: subdural hematoma/bleeding, brain swelling also known as "edema," and retinal hemorrhaging or bleeding in the eyes. The assumption was that, where this "triad" of symptoms was present, a child must have been the victim of

intentionally inflicted abuse that included violent shaking and that whoever had been caring for that child when the symptoms became manifest must have been the culprit—absent some verified major trauma such as a car wreck or a fall from a multistory building. This phenomenon was known as "Shaken Baby Syndrome" (SBS) or "Shaken Impact Syndrome," and, eventually, was reclassified as a sub-category of the umbrella term "Abusive Head Trauma" (AHT) in 2009.

135. Experts who testified in this habeas proceeding, including neuropathologist and Ph.D. scientist Roland Auer, attested that many medical examiners, himself included, believed in 2003 that merely seeing the triad of subdural hematoma, cerebral edema, and retinal hemorrhage was sufficient to presume that a child had sustained an inflicted head injury. 8EHRR129. Only a small number of pioneers, such as Dr. John Plunkett, were questioning that presumption at the time. *Id.*

136. The Court finds and concludes that the State relied on the SBS hypothesis and its tenets to obtain Mr. Roberson's conviction. The Court finds that the trial testimony, described at length above, contradicts contemporary scientific understanding that would have raised more than a reasonable doubt that Nikki's death was a homicide.[12]

[12] The Court notes that a trial judge in New Jersey recently granted a pre-trial *Daubert* motion, precluding any testimony about SBS/AHT as an explanation for a child's death, finding the admissibility of SBS/AHT testimony "inappropriate because it is an inaccurate and misleading

A. How the Relevant Science Changed

137. To understand how the scientific understanding has changed, the Court finds that it is important to trace the evolution of the SBS hypothesis, as developed through evidence presented in this proceeding. *See* TEX. CODE CRIM. PROC. art. 11.073 (a) (permitting habeas relief in cases where "relevant scientific evidence" that "(1) was not available to be offered by a convicted person at the convicted person's trial; or (2) contradicts scientific evidence relied on by the state at trial.").

1. SBS emerged as a hypothesis and took hold without scientific testing.

138. The idea that shaking a baby might cause brain damage first emerged in the early 1970s, inspired in part by an article entitled *On the Theory and Practice of Shaking Infants* by Dr. John Caffey. APPX21;[13] 3EHRR45; 4EHRR12,

diagnosis because it lacks scientific grounding." *State of New Jersey v. Darryl Nieves*, Indictment No. 17-06-00785 (Superior Court of NJ, Middlesex County Jan. 7, 2022). Based on a robust evidentiary record, the *Nieves* court found "[t]here is no 'quality assurance' component to this diagnosis because it is a hypothesis based upon extrapolation of data, coupled with a 'process of elimination' engaged in by diagnosticians in an effort to reach a 'conclusive diagnosis' which, in the end, cannot be treated medically. The 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.*

[13] The Court did not admit Applicant's scientific articles into evidence, but they have been incorporated into the writ record. To the extent that an expert attested to their significance in shaping the relevant science, the Court cites them, recognizing that the Applicant has a burden to prove that the scientific understanding relied on to obtain his conviction has changed in a material way. *See* TEX. CODE CRIM. PROC. art. 11.073 (b)(1)(A) (requiring habeas applicant to show "relevant scientific evidence is currently available and was not available at the time of the convicted person's trial because the evidence was not ascertainable through the exercise of reasonable diligence by the convicted person before the date of or during the convicted person's trial.").

4EHRR17. Dr. Caffey was a radiologist in Pennsylvania who posited that violent shaking might pose specific risks to infants. *Id.* Around this same time, Dr. Norman Guthkelch, a British neurosurgeon, raised concerns that violent shaking of infants might cause subdural hematoma aka bleeding. APPX20; 4EHRR17-18. These doctors raised concerns that the unstable nature of the infant brain, with its high-water content, increased the risk for bleeding in the head from shaking. "Shaking" as a mechanism of injury was a hypothesis proposed by Drs. Caffey and Guthkelch absent evidentiary support or confirmation from scientific principles. 3EHRR93; 8EHRR17-18.

139. When the SBS hypothesis was first proposed, it focused on very small infants whose brains are different from a two-year-old's brain and whose neck muscles are very different. 3EHRR46-47. Infants, not toddlers, have a "relatively heavy head, watery brain, and weak neck muscles," which is how the hypothesis emerged. 3EHRR47.

140. Without any scientific study to support it, the hypothesis that a brain could be damaged by violent shaking was gradually applied to older and older children. 3EHRR47. For many decades, this hypothesis was accepted without being tested. 4EHRR18.

141. In 2001, shortly before Nikki Curtis's death, the American Academy of Pediatrics published a position paper ("2001 AAP") stating that violent shaking was

not only considered a form of child abuse to young infants but also emphasizing the view that subdural hematoma, brain swelling, and retinal hemorrhage were "diagnostic features of this form of head injury." 4EHRR20; APPX22. The 2001 AAP position paper was not a scientific study, but a collection of opinions selected by the organization to educate its members. 4EHRR20. As such, the 2001 AAP reflected and promoted what was perceived as medical orthodoxy at the time of Mr. Roberson's 2002-2003 trial.

142. Ultimately, in 2009, the American Academy of Pediatrics published a new position paper ("2009 AAP"), in which the organization dropped the term "shaken baby." APPX29; 4EHRR43-44. Instead, doctors were urged to use a new nonspecific term: "abusive head trauma" (AHT). The AHT term is not synonymous with SBS; AHT is a blanket term used to encompass all mechanisms that might be used to intentionally injure a child in a way that results in some head injury. 4EHRR124. It is a broad, non-specific term, although the name itself implies a criminal act. 8EHRR130. In 2009, some key elements of the 2001 AAP paper were changed significantly, including issues having to do with falls and the interpretation of retinal hemorrhage, brain swelling, and subdural hematoma as diagnostic. 4EHRR21.

2. Outliers started to challenge the untested premises of SBS.

143. Meanwhile, what Dr. Ophoven described as a "fairly small cohort of practitioners" had been raising concerns about the ramifications of the SBS diagnosis and its reliability. 4EHRR23. For instance, forensic pathologist Dr. John Plunkett published a commentary on the Louise Woodward trial, which had involved a babysitter accused and convicted of shaking an 8-month-old baby to death; Dr. Plunkett's commentary raised concerns about whether science supported the shaking hypothesis. 4EHRR23-24. Then, in 2001, Dr. Plunkett published a paper titled "Fatal Pediatric Head Injuries Caused by Short-Distance Falls." 4EHRR25; APPX24. Dr. Plunkett's paper challenged the assertion frequently made in SBS trials that short falls cannot kill a child—emphasizing that even the Consumer Product Safety Commission had fatal short falls in its database of child fatalities. 4EHRR26. The paper identified 18 cases of fatalities that had been classified as short-fall accidents and thus verified that short falls can indeed, under some circumstances, kill or create a fatal blunt force impact to the head. *Id.*

144. One of the accidents discussed in Dr. Plunkett's paper had actually been caught on videotape and the tape plainly showed that the event was an accident. The tape showed a little girl, precisely Nikki's age, fall from a small play-scape in the garage onto concrete covered by carpet while a female relative just happened to be filming the toddler joining her older brother on the play-scape. In this habeas proceeding, Dr. Plunkett's research related to this fall was discussed and the

videotape of this particular fall was played during the testimony of Dr. Kenneth Monson.[14] 5EHRR28-32. As Dr. Monson explained, before Dr. Plunkett's paper, there had been a few reports of injuries related to short falls, but they had largely been dismissed. 5EHRR29-30. The videotape showed the fall and how the child remained lucid; but she ended up dying approximately a day later. 5EHRR32.

145. Dr. Plunkett submitted an affidavit that was admitted into evidence in this proceeding. *See* APPX3. Because Dr. Plunkett passed away before the evidentiary hearing in this cause, he did not testify. The Court finds, however, that his affidavit is reliable; the opinions he offered are credible; and his credentials indicate that he was highly qualified to opine about the topics contained in the affidavit. Dr. Plunkett's affidavit explains how the fact that a short fall can, under circumstances, be fatal was initially derided by most in the medical community and

[14] Dr. Monson is an associate professor of mechanical engineering at the University of Utah. 5EHRR12. He has bachelors and masters degrees in mechanical engineering from Brigham Young University and a Ph.D. in mechanical engineering from the University of California, Berkeley. He pursued post-doctoral training at the University of California, San Francisco, in the Department of Neurosurgery. His current responsibilities include directing the "Head Injury and Vessel Biomechanics Laboratory" at the University of Utah, which is devoted to better understanding traumatic brain injury and, more specifically, how the blood vessel of the brain are influence by head trauma. 5EHRR16-17. *See also* APPX130.

Dr. Monson is a reviewer for numerous scholarly journals and for governmental entities seeking expert input for the allocation of research funding. 5EHRR19-20. He was been accepted as an expert by courts in approximately 50 proceedings involving the death of or injuries to a child following a purported fall. 5EHRR21-22. He was accepted as an expert in biomechanical engineering by this Court without objection from the State. 5EHRR23. The Court finds and concludes that Dr. Monson was qualified to opine, his opinions were reliable, and he was a credible witness.

why this research was relevant to challenging the SBS hypothesis that had taken hold in the medical community. *Id.*

146. The change in understanding of the injury-potential of short falls, prompted by research in the field of biomechanics, progressed slowly. Biomechanics is a science that applies the principles of mechanics/physics to biological materials. 5EHRR17. When trying to understand whether specific circumstances could have caused an injury, biomechanical engineers, unlike medical doctors, quantify the level of force or acceleration that the head may have experienced and compare the measured result to the injury threshold expected to result in injury. 5EHRR33. One way that biomechanical engineers conduct these kinds of experiments is by using crash-test dummies, cadavers, animal models, and computer simulations. 5EHRR34; 5EHRR38-40. Experiments utilizing these models are accepted by the research community and are relied on, for instance, by the federal government and the automotive industry to improve product safety and reduce head injuries. 5EHRR44; 5EHRR146.

3. After Roberson's February 2003 trial, studies began to undermine what had been widespread acceptance of the SBS hypothesis.

147. Dr. Monson explained some of the laboratory studies that continued to be conducted after Dr. Plunkett's initial paper, up through 2011, on assessing the injury potential of short falls. 5EHRR66-71.

148. Additionally, in 2003, the *Journal of Neurosurgery* published an article by several biomechanical engineers, including Michael Prange, as well as a neurosurgeon, Dr. Duhaime, entitled "Anthropomorphic Simulations of Falls, Shakes, and Inflicted Impacts in Infants." APPX25; 4EHRR29-31. The publication described a study that had been conducted at a laboratory in the University of Pennsylvania using biofidelic dummies to measure the injury-potential of a variety of actions including dropping onto foam rubber, dropping from various heights onto a variety of surfaces, and violent shaking. The study demonstrated that the injury-potential from even relatively short falls could generate sufficient injury potential to cause serious injury, even fatalities. The study also showed that violent shaking did *not* create energy and injury-potential more than dropping the child from a short height onto a foam rubber surface. 4EHRR29-20.

149. Similarly, in 2004, Prange et al. published reports of laboratory studies at Duke University that provided guidance about measuring the injury impact of short falls. APPX131; 5EHRR68.

150. But instead of utilizing this information to question whether there was any scientific basis for the SBS hypothesis, a terminology shift occurred—with child abuse pediatricians promoting the term "shaken impact syndrome" instead of "shaken baby." 4EHRR31.

151. Then, in 2007, the fruits of a judicial inquiry initiated by the Canadian government was published, identifying numerous false convictions obtained in reliance on the SBS hypothesis. 4EHRR33-34; APPX26. The voluminous report was made available to the public and was considered exhaustive in terms of identifying growing concerns with the SBS diagnosis. 4EHRR36-37. That same year, 2007, a paper by Ken Monson was published, entitled "Head Exposure Levels in Pediatric Falls," which approached the matter of injury potential in scientific terms. 4EHRR40; APPX27. This paper was presented at the National Neurotrauma Symposium and explained how the potential for head injury varies based on how a child may hit the ground. 5EHRR20-21.

152. In 2009, a biomechanical engineer named Chris Van Ee co-authored a paper with Dr. John Plunkett entitled "Children ATD Reconstruction of a Fatal Pediatric Fall." 4EHRR41; APPX28. The paper described a laboratory reenactment of one of the short falls discussed in Dr. Plunkett's 2001 paper (the same short fall that had been accidentally captured on videotape). The case involved a two-year-old falling a short distance off a small playscape, hitting her head, crying, then seeming okay, but ultimately dying from the injury caused by a single impact to the head during the seemingly minor accidental fall. 4EHRR42-43. Dr. Monson explained to this Court how the fall had been reconstructed, including the fact that the toddler's feet were only 28 inches from the ground when the fatal fall occurred. 5EHRR35.

This study and the reconstructed short fall highlighted in the paper added to the scientific understanding of how children can be fatally injured in short falls. 5EHRR51-54. The same year that the paper co-authored by Drs. Van Ee and Plunkett was published, the American Academy of Pediatrics dropped promotion of the term "shaken baby." 4EHRR44-45; *see also* APPX29.

153. In 2011, Dr. Patrick Barnes, a neuroradiologist who had testified for the prosecution in the Louise Woodward case, published an article entitled "Imaging of Nonaccidental Injury and the Mimics: Issues and Controversies in the Era of Evidence-Based Medicine." 4EHRR46; APPX30. Dr. Barnes is the head of pediatric radiology at Stanford University. 4EHRR46. His article surveyed a number of conditions, circumstances, and mechanisms that can create internal head conditions, characterized by subdural blood, brain swelling, and retinal hemorrhages, that were not caused by trauma. The clear implication was that this condition is not necessarily caused by abuse. *Id.*

154. In 2012, the International Journal of Developmental Neuroscience published an article entitled "Influence of Age and Fall Type on Head Injuries in Infants and Toddlers." 4EHRR56; APPX34A. This article reflected further inquiry by a group of scientists from multiple disciplines, at the prestigious laboratory at the University of Pennsylvania, into the nature of head injuries sustained by children, including as a result of short falls. 4EHRR57.

155. In 2013, a study by multiple authors, including Irene Scheimburg, M.D., was published in Pediatric and Developmental Pathology entitled: "Nontraumatic Intradural and Subdural Hemorrhage and Hypoxic Ischemic Encephalopathy in Fetuses, Infants, and Children up to Three Years of Age: Analysis of Two Audits of 636 Cases from Two Referral Centers in the United Kingdom." 4EHRR57-58; 8EHRR29; APPX34B. This study demonstrated that the *lack of oxygen* (aka hypoxia) causes bleeding in the dural membrane of very young children; the bleeding was not caused by the tearing of bridging veins, as had previously been assumed. 4EHRR58. It was the lack of oxygen to the nerve cells in the brain that caused the brain to swell and then die, not shaking. The article also identified various naturally occurring conditions that can cause lack of oxygen. 4EHRR59. That is, this study established that oxygen deprivation, not necessarily trauma, can cause bleeding in infants' and children's around nonperfused brains. 8EHRR29-31. The study also demonstrated that the longer the interval of heart-stoppage resulting in oxygen deprivation, before resuscitation, the more bleeding was observed. 8EHRR31.

156. That same year, 2013, an extensive study by Patrick Lantz, M.D., et al., was published by the American Academy of Forensic Sciences called: "Extensive Hemorrhagic Retinopathy, Perimacular Retinal Fold, Retinoschisis, and Retinal Hemorrhage Progression Associated with a Fatal Spontaneous, Non-Traumatic,

Intracranial Hemorrhage in an Infant." This study identified approximately 30, *non-traumatic* conditions that can cause retinal hemorrhage, *i.e.*, bleeding in the eyes. Retinal hemorrhage had previously been used as a primary indicator that child abuse had been perpetrated in the form of violent shaking. 4EHRR60-61; APPX34C.

157. In 2014, the third edition of Dr. Jan Leetsma's treatise Forensic Neuropathology was published. 4EHRR; APPX32. This edition of a treatise, used by neuropathologists worldwide, contained an entire chapter on biomechanics and how it should be used to understand issues arising in forensic neuropathology. 4EHRR169. The treatise discussed SBS in great detail and the lack of scientific support for the hypothesis. 4EHRR49-50.

158. In 2015, the American Academy of Forensic Sciences published an open letter entitled: "Argument and Critique, Open Letter on Shaken Baby Syndrome and Courts: A False and Flawed Premise." APPX145. The letter noted:

- "It can be shown in many such instances that the evidence of the prosecution experts alleging death or serious injury from SBS is demonstrably flawed. The scientific basis for the assertion that these injuries are the consequence of deliberately inflicted violent shaking is highly contentious."

- "Biomechanical evidence has shown that shaking without contact would only produce the triad of injuries in association with other injuries to the neck and spinal column that are typically not found in alleged SBS cases."

- "SBS is lacking in scientifically-conducted validation and forensic rigour."

- "To date, the scientific research which has been conducted casts considerable doubt on the SBS construct."

Id; see also 10EHRR123-128.

4. Change in the scientific understanding continued after Roberson's writ application was filed.

159. In 2016, an agency of the Swedish government published the first "meta study" of SBS studies. 4EHRR51-52; APPX34D. The entity found that there were no high-quality articles or scientific studies that met the criteria for sound science supporting the SBS hypothesis. 4EHRR52-53. An appendix to the study highlighted the absence of any uniform diagnostic criteria for SBS, as there are for other medical conditions. 4EHRR53-54. The meta-study noted the "circular" reasoning at the heart of the SBS phenomenon: that the presence of subdural hematoma, brain swelling, and retinal hemorrhage were considered proof that shaking had occurred and so cases in which these conditions were found were considered proof that violent shaking had occurred. 4EHRR54-55; *see also* 8EHRR35.

160. In this proceeding, Dr. Auer, who read the results of the study in the original Swedish, explained the significance of this peer-reviewed publication (APPX34D), which had identified significant defects in the SBS/AHT literature, particularly the circular reasoning (where the idea that one starts with becomes the conclusion, rather than reaching a conclusion based on the facts presented). 8EHRR35-37. In short, the Swedish study demonstrated that there is no science demonstrating that shaking a baby or child causes the triad of internal head injuries. 8EHRR36-38.

161. In 2017, a team of researchers, led by Niels Lynøe, published an article entitled "Insufficient Evidence for Shaken Baby Syndrome," a survey of the lack of evidence-based support for the SBS diagnosis. 4EHRR62; APPX34D.

162. A 2018 study, involving a survey of pediatricians and child abuse experts, identified eight cases of children involved in verified accidental falls who suffered subdural hematoma and retinal hemorrhage. APPX141; *see also* 5EHRR140-143 (discussing N. Atkinson 2018, "Childhood Falls with Occipital Impacts in Pediatric Emergency Care). One of the falls in the study involved a set of children in the front yard with multiple other family members. One child pushed another child, who then fell backward into a 16-month-old. The 16-month-old fell to a sitting position; the child then fell backwards, hitting her head from the seated position; the child died as a result of the impact from that fall of only a few inches. This study showed that inflicted trauma should not be presumed because plainly accidental short falls could cause the kind of fatal head injuries that had been treated as proof of SBS/AHT for decades. 10EHRR160-164.

163. In 2019, a scholarly journal, Clinical Ethics, published an article entitled "Hidden Clinical Values and Overestimation of Shaken Baby Cases." 4EHRR63; APPX34E. The article discussed the epidemiologic implications of the SBS diagnosis, suggesting that many of the cases are inadequately diagnosed and that the literature reflects pronounced bias. *Id.*

164. By this point, one of the doctors responsible for the original SBS hypothesis, Dr. Guthkelch, had spoken up about his concern that this unverified hypothesis had caused a great deal of damage. He acknowledged that subdural and retinal hemorrhages, with or without cerebral edema, have been observed in accidentally or naturally occurring circumstances. 10EHRR130. Dr. Guthkelch also acknowledged that the forces generated by humans and laboratory machines shaking a dummy have proved "insufficient to cause disruption of human tissue" or any other injuries attributable to SBS. 10EHRR131. His call for civilized and reason-based scientific discourse was published in an article entitled "Problems of Infant Retino-Dural Hemorrhage with Minimal External Injury." 4EHRR64; APPX34F.

B. Specific Components of the SBS Hypothesis That the State Relied on to Obtain Roberson's Conviction That Are Contrary to Contemporary Scientific Understanding

165. While the State has distanced itself from the concept of shaking as a cause of Nikki's injuries in this proceeding, the Court finds and concludes that the case the State tried was an SBS/AHT case.[15] Mr. Roberson's jury was repeatedly told that Nikki's condition showed that she had been violently shaken, which the

[15] In Dr. Urban's 2016 affidavit, she denied that she had identified shaking as a cause of Nikki's injuries. APPX100; 5EHRR196-200 (discussing content of Dr. Urban's 2016 affidavit). The Court finds and concludes, however, that the trial transcript shows otherwise. Echoing Dr. Urban, Dr. Downs, the State's retained expert in this proceeding, repeatedly suggested that this is "not a shaking case." 10EHHR144. But that position reflects a significant change from the State's position at trial. Additionally, as explained below, while on the stand, Dr. Downs abandoned his position that shaking was not involved and ended up deferring to the State's trial expert, Dr. Squires.

State then used to prove the *mens rea* element of the alleged crime. Several tenets of the SBS/AHT hypothesis were attested to at trial as representing scientific fact. While "AHT" is still a diagnosis that can be used by doctors on forms, there is no evidence-based research that supports its tenets.

166. The Court finds that this on-going controversy can be explained in part by the difference between practicing medicine on one hand and conducting research on the other hand. As Dr. Auer explained, as a scientist, he can conduct experiments and approach new information skeptically, amassing and studying data; by contrast, medical doctors are busy treating patients and often accept information conveyed through group thinking, as occurred with the momentum behind the "shaken baby" hypothesis. 8EHRR14-15.[16]

167. The Court finds and concludes that several propositions asserted as scientific fact during Mr. Roberson's trial are no longer defensible.

1. Discredited position: Shaking can cause a triad of internal head injuries without injuring the neck

168. The Court finds and concludes that it was widely believed at the time of Mr. Roberson's trial that violent shaking could cause subdural bleeding, brain swelling, and retinal hemorrhage—the condition observed in Nikki at the time of her

[16] The State's retained expert in this proceeding, Dr. Downs, opined that forensic pathologists like himself (and Dr. Urban) "can't do" "evidence-based medicine." 10EHRR27. The Court finds and concludes, however, that Article 11.073 of the Texas Code of Criminal Procedure, in tandem with the federal and state Constitutions, exists to ensure that criminal convictions rest on "evidenced-based" science.

collapse. The idea was that "sheering forces" generated by shaking caused "the brain to move around" and then cause this kind of damage without leaving external evidence of the internal injuries. 3EHRR45; 3EHRR89; 3EHRR993; *see also* 42RR107 (Dr. Squires testifying at trial that "most of the experts do think that shaking alone, if done vigorously, will kill a child, but most children are shaken and then thrown against something."); 42RR120 (Dr. Squires answering "yes" to defense counsel's question at trial: "In many respects, what you saw with this child are classically consistent with injuries from rotational force [*i.e.* shaking]?").

169. In her trial testimony, Dr. Squires expressly testified that the "American Academy of Pediatrics" had taken a position on SBS. 42RR116-117. This was a reference to the 2001 AAP position paper (APPX23). In that paper, pediatricians were taught that they did not have to consider other possible diagnoses if there were three findings: subdural bleeding, brain swelling aka cerebral edema, and retinal hemorrhaging. The 2001 AAP also instructed that these three findings justified the presumption that the child's injury had been caused by abusive shaking.

170. The trial record plainly reflects that Dr. Urban relied on the opinion that shaking was a mechanism that could explain Nikki's condition and death. 4EHRR76-78. Dr. Urban testified that Nikki, a two-year-old child, had anatomical features, such as a "weak neck," that made her more vulnerable to shaking. But Dr. Ophoven opined that "those purported factors were never scientifically established

in a child of [Nikki's] age[.]" APPX2 at 16 (citing 43RR82). *Newborns* have weak necks, which is why their necks need to be protected; but a two-year-old's neck is anatomically quite different. 3EHRR91. As Dr. Ophoven explained, "[b]y the time a child gets to two and a half years old, their brains are three times bigger and their skulls are thicker and their necks are stronger" than those of newborns. 3EHRR90. Dr. Urban's suggestion that Nikki's neck was protected when she was being shaken and battered because her neck muscles were "weak" and her head big compared to her body was inaccurate and misleading; but her testimony was consistent with the teachings of SBS at that time. 3EHRR91.

171. At trial, Dr. Urban repeatedly described shaking as a cause of Nikki's head injuries, suggesting that a shaking motion had somehow caused her brain to move back and forth within the skull, thereby rupturing, as she put it: "the little bitty veins" that connect "the dura and the brain itself." 5EHRR195-196 (quoting Dr. Urban's trial testimony). Dr. Wigren noted that biomechanical engineers have since established that shaking cannot generate forces sufficient to rupture "the little bitty veins" that connect the dura and the brain itself; that is "literally impossible" to do through shaking. *Id.* This point was verified by biomechanical engineer Dr. Monson, who reported that no study has demonstrated that shaking can produce a subdural hematoma or any head injuries. 5EHRR98; 5EHRR122; 5EHRR131.

172. But because shaking does not bruise the scalp, the internal triad of head injuries combined with relatively minor external bruises or no bruises at all was seen as proof that shaking had occurred. 3EHRR45. Only well after the SBS hypothesis had become entrenched were biomechanical studies used to test the hypothesis that the rotational acceleration and deceleration associated with abusive shaking would cause retinal hemorrhaging and other head injuries; and that hypothesis has now been proven false. 3EHRR94.

173. While SBS/AHT is still adhered to by child abuse pediatricians,[17] there is no scientific basis to support the hypothesis that violent shaking can scramble or "sheer" an infant's brain cells or cause subdural hematoma, brain swelling, and retinal hemorrhage. 3EHRR45-46; 4EHRR37; 4EHRR142; 4EHRR146.

174. More specifically, there are no biomechanical studies that support the assertion that a child of Nikki's weight and height could be shaken so as to cause *any* internal head injuries. 3EHRR46-47.

175. Dr. Monson described studies in the field of biomechanics on the injury-potential of shaking. 5EHRR83-89. The only study involving a toddler-sized model demonstrated how much harder it was to shake a child of that size. The

[17] Importantly, no one in the medical community, including no experts who testified in this proceeding, argued that violent shaking is advisable. If a baby is shaken with sufficient force, the baby's neck can be injured or the spinal cord severed. 5EHRR100. But all experts agree that Nikki had no such injuries.

greatest force that could be generated in such circumstances was .48 kiloradians per second squared, a factor of 10 difference between the force that could be generated in shaking a model comparable to a human infant. 5EHRR87-89. A teddy bear, such as was used as a demonstrative during the Roberson trial, weighing less than a pound, is not a comparable model in any relevant respect. A teddy bear is easy to move around quickly and generate rapid acceleration ***impossible*** with a 24-pound toddler like Nikki. 5EHRR90-96. The difference in difficulty is explained by Newton's Law. 5EHRR96.

176. When asked about Dr. Urban's testimony stating that Nikki's neck was not injured because it was "protected," Dr. Monson stated that that does not make sense. 5EHRR101. As he explained, any head acceleration generated by shaking is generated by force *in the neck* specifically; thus, the neck is not protected during shaking. 5EHRR102.

177. Dr. Monson also disagreed entirely with Dr. Urban's trial testimony suggesting that when a child is "shaken hard enough, the brain is actually moving back and forth within the skull" and that impact within "the skull itself" "is enough to "damage the brain." 5EHRR102 (quoting Dr. Urban's trial testimony). Dr. Monson noted that, even with an infant, where greater force can be generated through shaking, shaking has not been shown to cause the brain to move. 5EHRR103-104.

178. Dr. Monson also explained studies showing that the forces generated through violent shaking do result in ligament disruption in the neck. 5EHRR100. Yet Nikki had no neck injuries of any kind. 5EHRR101. Dr. Monson concluded that it was "very unlikely" that shaking caused any of Nikki's injuries. 5EHRR99. The Court agrees.

2. Discredited position: The presence of subdural hematoma, brain swelling, and retinal hemorrhage or just retinal hemorrhage proves that abusive shaking occurred

179. The Court finds and concludes that at the time of Mr. Roberson's trial the SBS hypothesis was accepted as *the* way to explain the triad of internal head injuries in infants and young children; that is, if a doctor saw subdural hematoma, brain swelling, and retinal hemorrhage that was seen as "proof" that the child had been abused. APPX22. The Court finds and concludes that contemporary science has established that there are many conditions that can cause the condition present in Nikki when she collapsed. 3EHRR48-49; *see also* APPX34B; APPX1. It is also now recognized that the triad is not specific to trauma, let alone inflicted trauma. 3EHRR49; APPX35C; APPX1; APPX2.

180. At the time of trial, the medical community believed that the presence of retinal hemorrhage alone confirmed that shaking had taken place. 3EHRR56. For many years, doctors were taught that bleeding in the eyes was proof of child abuse in the form of shaking. 3EHRR56; 3EHRR89; *see also* Dr. Squires' trial testimony

42RR108 (describing retinal hemorrhages as "one more thing that really lets you know that those eyes were being shaken and that the blood vessels broke.").

181. Now it is recognized, and studies have demonstrated, that many phenomena can cause retinal hemorrhage that have nothing to do with trauma, let alone inflicted trauma. APPXC; 8EHRR16 (explaining that retinal hemorrhaging is caused by hypoxia, which can be brought on by activities like climbing in high altitudes).

3. Discredited position: Brain damage would be immediate with no lucid interval

182. Another belief at the time of Mr. Roberson's trial was that violent shaking would render an infant "immediately unconscious" because the brain was being devastated by the shaking and would put the baby into an immediate deep coma. 3EHRR93; 3EHRR106. Then, since the hypothesis was that "the child lost consciousness the minute you shook them," it was presumed that "the person with the child when they lost consciousness" had done the shaking and caused the deep coma. 3EHRR107-108.

183. In accord with this SBS tenet, Dr. Squires opined as to why she thought the shaking would have produced an obvious, instant change in Nikki's level of consciousness, thus allowing an inference that Mr. Roberson had been the one to cause Nikki's condition by shaking her:

> Some shaken babies are very mild and people might not even realize it. Other children, if you shake them hard enough and you hurt them bad enough, they stop breathing immediately. So anything in-between. It is my assessment in this child that after the event that caused all this deep brain injury she would not have been normal. And any reasonable person would know that she wasn't normal. . . . she would never have talked, walked, and been thought to be normal by anybody.

42RR108-109. Similarly, Dr. Urban testified at trial that, after being shaken, Nikki's injuries would have been immediately apparent—reflected in "a change in the level of consciousness." 43RR81.

184. The videotaped accidental fall played in Court during this proceeding—the fall that was studied by Dr. Plunkett in conjunction with a biomechanical engineer—demonstrated that a child can sustain brain damage and remain conscious for an extended period of time. Additionally, the Atkinson study recorded lucid periods during which children could still talk for minutes or hours before the brain reacted to the injury and caused a seemingly sudden death. 5EHRR216; APPX141.

185. The Court finds and concludes that the contemporary scientific understanding is that hypoxia, brought on by whatever means, sets off a cascade of conditions that can eventually—after a lucid period of hours or even days—produce the triad of internal brain damage when the child stops breathing. 3EHRR32-33; 3EHRR49; 8EHRR82.

4. Discredited position: Short falls cannot cause serious head injuries

186. As described above, all of the medical personnel and law enforcement in Palestine rejected the idea that a short fall could have explained Nikki's condition. *See, e.g.*, 41RR66; 41RR69; 41RR89; 41RR99; 41RR123-125; 42RR17-18; 42RR83-85; 42RR108; 43RR156. Dr. Urban also rejected the concept that a short fall could have played any role in causing Nikki's condition, thus she did not ask for any information about the reported fall or otherwise investigate circumstances in advance of her collapse. 5EHRR215 (quoting Dr. Urban's trial testimony).

187. At trial, testimony was adduced expressing skepticism about Mr. Roberson's report that Nikki had fallen out of bed and suggesting that her condition is the kind "usually" seen from "a massive car wreck . . . . something that you have a massive impact." 41RR123-125. The testimony that a "massive" force was required enabled the prosecution to argue that Nikki had been intentionally harmed. These statements are similar to statements that have been used in SBS/AHT cases around the country that are now recognized as devoid of a scientific basis. *See, e.g.*, Imwinkelried, "Shaken Baby Syndrome: A Genuine Battle of the Scientific (and Non-Scientific) Experts" (2009) at text accompanying notes 122-127 (noting "prosecution experts frequently give analogies. . . . to the amount [of force] generated by high speed automobile accidents and a fall from a several-story building" but those analogies are "fallacious"); *see also* Randy Papetti, Paige Kaneb, and Lindsay Herf, *Outside The Echo Chamber: A Response To The Consensus*

Statement On Abusive Head Trauma In Infants And Young Children, 59 SANTA CLARA L. REV. 299 (2019), at 314 (concluding "[t]he motor vehicle and multi-story analogies, which filled the child abuse literature and courtrooms for decades ... were without basis.").

188. Before this proceeding began, many courts, including the Texas Court of Criminal Appeals, had already recognized that scientific studies have now established that a child may sustain a serious internal head injuries and even death from a relatively short fall, even from a height of one to ten inches, far less than the height of the bed at issue in this case. *See also Ex parte Henderson*, 384 S.W.3d 833, 837-51 (Tex. Crim. App. 2012) (detailing significant scientific changes in the field of biomechanics on whether "short falls" can cause fatal injuries to infants); *Ex parte Robbins*, 478 S.W.3d 678 (Tex. Crim. App. 2014) ("*Robbins II*")[18] (finding male caretaker convicted of capital murder of a child was entitled to habeas relief based on new science related to short falls). *See also*, *e.g.*, *In re Fero*, 367 P.3d 588 (Wash. Ct. App. 2016); *Commonwealth v. Epps*, 53 N.W.2d 1247, 1264-65 (Mass. 2016); *People v. Bailey*, 999 N.Y.S.2d 713, 725 (N.Y. 2014); *Del Prete v. Thompson*, 10 F.

[18] The Texas Legislature was motivated to enact Article 11.073 in part to address concerns about the scientific integrity of criminal convictions raised in cases like *Ex parte Robbins*, 478 S.W.3d 678, 695-696 (Tex. Crim. App. 2014), reh'g denied sub nom. *See Ex parte Robbins*, 560 S.W.3d 130 (Tex. Crim. App. 2016).

Supp. 3d 907 (N.D. Ill. 2014); *Edmonds v. Wisconsin*, 746 N.W.2d 590 (Ct. App. Wisc. 2008).

189. The Court finds and concludes that, at the time of Mr. Roberson's trial, it was widely believed, as reflected in the medical literature, that a short fall, something less than four feet, *could not produce a serious injury*. 3EHRR44. The 2001 AAP paper expressly stated that "the constellation" of brain damage (the triad) does not occur in short distance falls." APPX23. That was an absolute statement, made without exception; therefore, in any case where there was a report of a short-distance fall, doctors, guided by the Academy, were induced to conclude that the child's caregiver was either lying about the fall or that the child had to be abusively shaken, in addition to sustaining some kind of head impact, because it was believed that a short distance fall could not explain those findings. The positions articulated in the 2001 AAP position paper remained in place, without revision, retraction, or modification, through May of 2009, well after Mr. Roberson's trial. *See* APPX29.

190. Contemporary scientific studies, including a 2017 study by Atkinson, et al., show that short falls can cause the exact kind of impact and subdural hemorrhages observed in Nikki when she first arrived at the hospital (as seen in the CT scans taken of her head). 5EHRR215; 5EHRR140-143 (discussing Atkinson 2018, "Childhood Falls with Occipital Impacts in Pediatric Emergency Care"); *see also* APPX141.

191. Biomechanical engineer and researcher Dr. Monson was expressly asked: whether a fall off a bed could result in the injuries that were observed in this case and how the state of the science at the time of trial compared to today. 5EHRR22. He initially prepared a declaration, which was admitted into evidence. APPX4. Subsequently, he made some case-specific calculations based on the limited known variables relevant to the fall that Nikki had reportedly sustained. 5EHRR24-25. He also reviewed the report of radiologist, Dr. Julie Mack (APPX93), which was made after studying head scans taken of Nikki at the time of her hospitalization, which were not available when Dr. Monson prepared his initial report. 5EHRR72-74.

192. The variables Dr. Monson used in his calculations were estimates because the fall was not witnessed. 5EHRR56. The height of the bed was estimated to be 22-24 inches off the floor, but, as Dr. Monson explained, Nikki could have fallen off the bed "in a host of different ways." Therefore, he established some benchmarks utilizing different assumptions: that Nikki had been standing when she fell, lost her balance, and hit her head or rolled off. 5EHRR26; 5EHRR56-57. He measured an impact force based on Newton's Law: F = MA. 5EHRR58-59. Dr. Monson was able to identify a "peak value of acceleration" associated with the event. 5EHRR61-62. His calculations involved merely applying basic laws of physics and are "soundly supported by the scientific literature." 5EHRR127; 5EHRR128.

193. Dr. Monson noted that, although the result of his calculations was a range, critical to the reliability of his assessment was the radiological evidence of a single impact to the back of Nikki's head. 5EHRR63. His calculations also accounted for the fact that Nikki fell onto a thin carpet over a wood floor in a house with pier-and-beam construction. 5EHRR64-65. He explained that he took a conservative approach to making his calculations.[19] 5EHRR65-67. The resulting range of accelerations associated with his calculations was 107-150 Gs from a standing position and 64-90 Gs from lying down. 5EHRR74-76. By way of comparison, Dr. Monson noted that the fatal accident captured in the videotape that was played in Court and reconstructed by Dr. Van Ee resulted from 125 Gs. 5EHRR78.

194. Dr. Monson opined that the testimony at trial stating that a short fall could not have caused Nikki's injuries is not correct; although uncommon, short falls can cause serious injury and even death. 5EHRR27-28. Also, based on his case-specific calculations, he concluded that a fall from standing on the bed at issue could have resulted in her death, while rolling off the bed would not likely have done so. 5EHRR82. Importantly, it is invalid, in light of contemporary scientific

[19] Dr. Monson did not account for whether Nikki was sick at the time of the reported fall or analyze what medications she had in her system at the time. 5EHRR144.

understanding, to say that a short fall cannot cause a fatal injury to a child. 5EHRR104-105.[20]

195. The Court finds and concludes that the scientific consensus regarding the injury-potential of short falls has changed considerably since Mr. Roberson's trial.

196. The Court further finds and concludes that a great deal of literature that previously promoted the SBS hypothesis and the premises described in this section has been discredited since Mr. Roberson's trial. *See, e.g.*, R. Papetti, The Forensic Unreliability of the Shaken Baby Syndrome (2018); APPX33 ("Traumatic Shaking, The Role of the Triad in Medical Investigation of Suspected Traumatic Shaking, A Systematic Review" (2016)); APPX33A ("Appendix to Report: Traumatic Shaking, a Systematic Review") (2017)).

II. NEW EVIDENCE THAT NIKKI'S DEATH WAS NOT A HOMICIDE

197. CT scans taken of Nikki's head, including a set taken soon after her admission to the Palestine Regional ER the morning of January 31, 2002, were

[20] Even the State's retained expert, Dr. Downs, repeatedly agreed that short falls can, in rare circumstances, be fatal. 10EHRR102 (claiming "We know that short falls can kill. We've always known that. There's nothing new there."). That is, contrary to the evidence adduced by the State at trial and to evidence adduced in this proceeding, Dr. Downs claimed that he and everyone else has known this fact "for years and years." 10EHRR144. This same expert was dismissive of the research of Dr. John Plunkett, 10EHRR157-158, 235, the first forensic pathologist to educate medical doctors about the biomechanical evidence demonstrating that short falls can kill small children. APPX3. However, many consider Dr. John Plunkett a trailblazer in this regard. 4EHRR37-39; *see also* APPX24.

rediscovered in the courthouse basement in August 2018. Thereafter, both parties had access to the digitized images and had the opportunity to consult with a radiologist. The only radiologist to provide the parties, their experts, and this Court with an interpretation of the most objective evidence of the condition of Nikki's head at the time of admission was Dr. Julie Mack. APPX93.

198. Dr. Mack graduated from Harvard Medical School in 1990, is currently licensed to practice medicine in Pennsylvania, and is board certified by the American Board of Radiology. *Id.* Following graduation, Dr. Mack did her residency at Baylor University Hospital where she first began her training in medical imaging, known as radiology. Dr. Mack practices in radiology at Penn State Hershey Medical Center, where she interprets imaging studies. Dr. Mack is published in the field of pediatric radiology, has presented at conferences concerning pathology and radiology, and researched and written about abusive head trauma and shaken baby syndrome as it relates to radiology. *Id.* The jury did not see the CT scans of Nikki's head or have access to, as this Court did, the report by Dr. Julie Mack, the only doctor trained in radiology who was qualified by experience and training to read the CT scans.

199. The Court finds and concludes that the CT scans and Dr. Mack's interpretation of them are highly relevant. The Court further finds that Dr. Mack's findings were reasonably relied on by Dr. Auer, Dr. Ophoven, Dr. Wigren, and Dr. Monson in testing and forming their own opinions. Those opinions all include the

conclusion that there was radiological evidence that Nikki had sustained a single impact to the right back of her head where a "goose egg" had formed and where a small amount of subdural blood and brain swelling was visible at the single impact site at the time the x-ray was taken. All opined that the single impact was consistent with the report of a short fall from the bed. Dr. Auer and Dr. Wigren, a neuropathologist and a forensic pathologist respectively, reviewed all of the original microscopic autopsy slides and identified other evidence relevant to assessing why Nikki would have been prone to falling and why she ultimately stopped breathing at some point after sustaining a single, relatively minor impact that was not the primary cause of her death, just a contributing factor.

A. Testimony of Dr. Roland Auer

1. Dr. Auer's qualifications

200. Dr. Roland Auer is a medical doctor, certified in neuropathology by boards in both the United States and Canada. He is also a research scientist with a Ph.D. in medical science. He is employed full time as a professor at the Royal University Hospital in the Department of Pathology and Laboratory Medicine at the University of Saskatchewan, where he teaches courses in clinical neuropathology to medical residents and medical students. He has spent over 30 years performing autopsies and conducting research in laboratories. 8EHRR11-12.

201. As a neuropathologist, his focus, anatomically, is on the brain, spinal cord, related nerves and muscles, and the eyes. 8EHRR10. His particular field of study is brain damage, including the effect of ischemia (lack of blood flow) on the brain, and epilepsy, trauma, and neurotoxicology. 8EHRR5-6. He has published over 130 scientific articles in peer-reviewed journals. 8EHRR8. On indexes measuring the impact of scholarly contributions, he has high scores, showing that his articles have been frequently cited by other researchers in peer-reviewed articles (over 10,000 times). 8EHRR9. He has published a leading treatise in his field called Forensic Neuropathology and Associated Neurology. 8EHRR10. *See also* APPX124 (Auer's CV).

202. Although he is employed full time as a professor and researcher, Dr. Auer has previously testified as an expert. Primarily, he testified for the prosecution until 2013 when he was asked to consult on a case involving allegations of "so-called shaken baby" injuries. 8EHRR12. In that case, he reviewed the autopsy slides, the child's entire medical history, and rendered an opinion that the child had pneumonia based on inflammation observed in the lung tissue under the microscope; his independent investigation resulted in the criminal case being dismissed. 8EHRR12; 8EHRR41. Since that time, he has devoted a percentage of his research to cases like Nikki's. 8EHRR12. To date, he has independently reviewed at least 40 such cases. 8EHRR32-33; 8EHRR40.

203. The Court accepted Dr. Auer as an expert in neuropathology, pediatric neuropathology, and as a researcher in hypoxia, hypoxic ischemia,[21] and pediatric pneumonia without objection from the State. 8EHRR14.

204. The Court finds and concludes that Dr. Auer was qualified to opine and that he was a credible witness.

2. Dr. Auer's methodology in assessing the cause of Nikki's death

205. Dr. Auer was initially contacted about Nikki Curtis's case by Dr. Carl Wigren, seeking a consultation following his own review of the original autopsy slides at the Dallas crime lab. After this Court issued an order, Dr. Auer was eventually able to obtain the microscopic slides associated with Nikki's autopsy and studied them in his laboratory. 8EHRR13. He requested cuts of the original histology, but was told that all of the biological materials associated with Nikki had been destroyed. 8EHRR170.

206. Upon reviewing the original autopsy slides of the lung tissue, Dr. Auer observed interstitial cellular thickening in Nikki's lungs, which he analogized to placing Saran Wrap over the breathing membrane. 8EHRR60-61. Dr. Auer observed, at the microscopic level, considerable interstitial thickening and "macrophages"—a sign that the infection in Nikki's lungs had pre-dated her

[21] Dr. Auer explained that the term "hypoxic ischemia" refers to low oxygen content in the blood. 8EHRR7.

hospitalization and thus was not ventilator pneumonia.[22] In the lung tissue itself, Dr. Auer also observed "smudge cells,"[23] lung cells whose nucleus has been rendered dark, a marker of "viral cytopathic effect." The presence of smudge cells was another indication that Nikki had interstitial pneumonia. 8EHRR84-86.

207. Dr. Auer attested that pneumonia is the most common cause of death worldwide in children, and yet the "pneumonia is being missed" in autopsies of children dying at a young age. 8EHRR90. Dr. Auer explained that unless one is trained to look for it, many pathologists will miss interstitial pneumonia because it replicates *in* the lung tissue but leaves air spaces within the lungs open. 8EHRR173.

208. Dr. Auer noted that, although Dr. Urban observed "macrophages" in the lungs and made a reference to them in her autopsy report, she did not "connect the dots"—likely because she was only trained to look for bronchopneumonia. Bronchopneumonia, which is more common, is characterized by pus filling up the

[22] Dr. Auer explained that ventilator pneumonia, caused by bacteria, is easy to identify, unlike interstitial pneumonia. 8EHRR86.

[23] The State's retained expert Dr. Downs testified that he had "never heard anybody else use" the term "smudge cell" to apply to anything but "blood smears." 9EHRR75. Yet the Court notes that Dr. Wigren also attested to seeing "viral smudge cells" in Nikki's lung tissue. 6EHRR20. Additionally, the Court takes judicial notice of the fact that "smudge cells" are referenced in multiple scientific publications available on the Internet through, for instance, the National Library of Medicine, *e.g.*, https://pubmed.ncbi.nlm.nih.gov/27221863/ and the Mayo Clinic, *e.g.*, https://www.mayoclinicproceedings.org/article/S0025-6196(11)61073-2/fulltext and "smudge cells" are defined as remnants of "leukocytes" that come from several types of cells, including macrophages. *See, e.g.*, websites such as that hosted by LabCE, available at https://www.labce.com/spg48905_smudge_cells.aspx.

bronchials and air sacs; it is easy to recognize. By contrast, interstitial pneumonia,[24] is more subtle. 8EHRR88.

209. Dr. Auer reviewed Nikki's entire medical history, and his report and testimony include a survey of key components of Nikki's medical history from birth to her death at age two. He discussed her extensive, significant illnesses and explained their relevance to understanding Nikki's ultimate collapse. 8EHRR47-54.

210. Dr. Auer relied on the radiology report of Dr. Julie Mack (APPX93). He also studied the 2002 autopsy report and related photographs. 8EHRR13-14; 8EHRR43. He took photographs of the original microscope slides of Nikki's lungs using a microscope. 8EHRR44. He then prepared a comprehensive 64-page report with 222 references reflecting his findings and his conclusion that Nikki died of natural causes, namely, interstitial pneumonia, with an accidental component associated with the prescription drugs in her system and a short fall. APPX110 (admitted as a demonstrative); 8EHRR127; 8EHRR141. He converted his report into a summary PowerPoint presentation that was shown during his testimony. APPX110A (admitted as a demonstrative).

[24] Interstitial pneumonia has been seen in many people infected with the COVID-19 virus. Therefore, during the recent pandemic, people have become more familiar with interstitial pneumonia and the way it can cause a sudden collapse due to gradual thickening of lung tissue at the cellular level. 8EHRR89; 8EHRR100.

211. The Court finds and concludes that Dr. Auer's methodology was reliable, supported by significant scientific evidence.

3. Scientific foundation for Dr. Auer's conclusions

a. Difference between damage to the head caused by trauma (not found) and damage caused by hypoxia (found)

212. Dr. Auer explained that both head trauma and hypoxia (oxygen deprivation) can give rise to hemorrhages (*i.e.*, bleeding) inside the head from leaking blood vessels. 8EHRR15. Dr. Auer's research, in accord with other studies, has established that the same internal triad (observed in Nikki at autopsy) is associated with hypoxia. Hypoxia causes bleeding in infants' and children's nonperfused brains,[25] and the severity of the bleeding is proportional to the degree of hypoxia. 8EHRR29-31. Therefore, the triad of subdural bleeding, brain swelling, and retinal hemorrhage do *not* prove that head trauma occurred—let alone intentionally inflicted head trauma. 8EHRR73.

213. Dr. Auer testified that "hypoxia increases blood flow because the content of oxygen in the blood is reduced[;]" and as a result, "the body simply tries to increase the blood flow to deliver that same amount of oxygen[.]" 8EHRR16. As Dr. Auer explained, a person can have hemorrhaging from hypoxia without head

[25] According to Dr. Auer, medical doctors generally refer to the "nonperfused brain" as "ischemic encephalopathy or hypoxic ischemic encephalopathy." In lay terms, this condition is known as "brain death." 8EHRR46-47.

trauma. A basic example is hypoxia brought on by activities in high altitudes, such as climbing Mount Everest. 8EHRR16. Hypoxia can ultimately stop the heart. 8EHRR61; 8EHRR73.

214. By contrast, head trauma is caused, not by oxygen-deprivation, but by "a loading impact" to the head caused, for example, by a fall or a blow. Dr. Auer explained that injury from trauma looks "identical whether intentionally inflicted or accidental." 8EHRR16. But with trauma sufficient to cause internal brain damage, there will be external markers on the skin in the form of bruises/contusions and likely corresponding skull fractures. 8EHRR144; 8EHRR16-17. Dr. Auer was clear that any fatal blow to the head would leave a corresponding bruise. 8EHRR144.26

215. Dr. Auer agreed that a short, unbraced fall with an impact to the head can be fatal. This possibility was demonstrated by the video played during Dr. Monson's testimony and discussed at length during his testimony. APPX149. But as both Dr. Monson and Dr. Auer explained, the injury potential of a short fall depends on many variables including the loading, the thickness of the skull, and the composition of the skull. 8EHRR147-148. If the force were sufficient to prove fatal, a skull fracture would be expected. 8EHRR24.

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26 In explaining this fact, Dr. Auer debunked the State's suggestion that actress Natasha Richardson had a skiing accident, hit her head, had no fractures, and later died: "She died of an epidural hematoma, …. and that's usually due to a skull fracture severing the middle meningeal artery. So that's not true the way you said it." 8EHRR147.

216. Dr. Auer instructed that skull fractures are an index of the loading of force in head trauma. Helmets protect heads from trauma by distributing (and thus defusing) that focal loading over a greater surface area. 8EHRR15. If the loading exceeds the strength of the skull at the point of impact, then there will be a fracture. As a matter of basic physics, if energy is applied to the head during an impact, it must be absorbed by the skull. 8EHRR21. If it is absorbed by the skull without being defused, for instance, by a helmet, and does not cause a fracture, that indicates that the force was insignificant. As Dr. Auer noted, the photographs Dr. Urban took of Nikki's skull (and the CT scans that she did not consider) show no skull fractures. 8EHRR24. This fact is uncontested.

217. In part, because Nikki had no skull fractures, Dr. Auer does not believe that her death can be explained by recourse to the short fall alone and the resulting single impact observed in the CT scans, which he viewed as minor. 8EHRR24. However, he did find the CT imaging "entirely compatible" with Mr. Roberson's explanation that his daughter had fallen out of bed. 8EHRR25. Moreover, Dr. Auer found the resulting "goose egg" observed at the single impact site on the back of Nikki's head consistent with injuries caused by low-velocity falls. 8EHRR26; 8EHRR78. Additionally, her pneumonia would have made her more prone to falling because when a person has pneumonia, they become woozy and can unexpectedly collapse. 8EHRR59. Further, Nikki's balance had likely already been affected by ear

infections that persisted even after she had tubes surgically implanted in her ears. And, finally, she was only two years old and thus still toddling. 8EHRR59-60.

218. Dr. Auer explained an obscure reference in the autopsy report regarding "multifocal traumatic axonal injury" identified using "B-APP immunohistochemical staining." The definition and significance of this staining technique is discussed at length in Dr. Auer's report (APPX110). Dr. Auer testified that the axonal changes detected in Nikki's brain were described as "multi-focal," meaning they were "diffused," because they were observed throughout Nikki's brain. However, Dr. Auer opined that this cellular-level nerve damage is "not a signature of trauma. It can be present in global energy failure as in … cardiac arrest"—which Nikki had experienced before she even got to the hospital. 8EHRR111. In labeling it "traumatic" axonal injury in her autopsy report, Dr. Urban was presuming trauma when there are many other causes of axonal injury;[27] moreover, Dr. Auer found the presumption inaccurate in this case. 8EHRR120-121.

219. Dr. Auer, a specialist in both head trauma and hypoxia, found no evidence suggesting significant trauma to the head, only one minor impact. 8EHRR80. This fact comports with the expert opinions of radiologist Dr. Mack, pediatric pathologist Dr. Ophoven, forensic pathologist Dr. Wigren, the State's trial

[27] In this proceeding, Dr. Urban conceded that axonal damage can be caused by hypoxia and ischemia and thus is not specific to trauma. 9EHRR112-113; 9EHRR195-198. *See also* APPX96.

expert Dr. Squires, and all other medical professionals who considered the CT scans taken of Nikki's head back in 2002 when she was hospitalized, before the autopsy occurred. Only the medical examiner, Dr. Urban, and the State's retained expert, Dr. Downs, claimed that Dr. Urban's autopsy photographs reveal evidence of "multiple impact sites." Yet the evidence to which Drs. Urban and Downs point to support their conclusion is merely *the blood* within the subdural space—not any skull fractures, corresponding bruises to the scalp, or bruises to the brain itself. 9EHRR187.

b. Nikki's medical history

220. Dr. Auer concluded that, even among the 40 cases of infant and child deaths he has studied with the same compendium of internal head injuries arising from undiagnosed pneumonia, Nikki was "severely infected." 8EHRR50. Dr. Auer disagreed with the suggestion that Nikki's breathing apnea episodes, which began when she was seven months old, were somehow "voluntary" breathing-hold spells. Instead, these episodes of apnea likely indicated that she was already gravely ill with some pneumonia. 8EHRR51; 8EHRR156. The long-term virus weakened her and made her vulnerable to bacterial infections, which she had with great frequency.[28]

[28] As Dr. Auer explained, his conclusion that Nikki was chronically ill does not mean that she was ill every day of her life. But at least once a month, throughout her life, starting at eight days old, she had medical issues, which became increasingly serious despite continuous medical intervention. 8EHRR171-173.

Her chronic fever began to spike, reaching a recorded high of 104.5 degrees fewer than two days before her collapse. 8EHRR53-54. Dr. Auer further explained that what the State has characterized as mere "ear infections" is contrary to Nikki's medical records generally and, specifically, to evidence that her antibiotic-resistant, chronic ear infections progressed to "glue ear despite myringotomy tubes inserted." Dr. Auer characterized this condition as reflecting "the extreme end of the spectrum," not an ordinary occurrence in childhood, even among children prone to ear infections. 8EHRR153. Dr. Auer also described the abnormal movement of Nikki's infections within her body, explaining that this is what unaddressed viruses do; they "invade multiple cells in multiple tissues of the body." 8EHRR155. Viruses also weaken the immune defense to bacteria. 8EHRR160.

221. During her last days, Nikki was sent home from a doctor's appointment with a high fever (104.5) with prescriptions for Phenergan, which is promethazine, a drug that depresses respiration, and for codeine, an opiate. As Dr. Auer explained, these medications would have done nothing to address her infections but instead affected her ability to breath. 8EHRR55-56. Phenergan/promethazine now has a "Black Box Warning" against prescribing the medication to children with a history of respiratory issues or who are under two years old. 8EHRR56. Codeine is a narcotic that metabolizes into morphine, which causes breathing stoppage and death. 8EHRR57.

222. Because of his special expertise in identifying pneumonia-induced hypoxia in child deaths initially considered to be "shaking" cases, Dr. Auer was able to determine that Nikki had interstitial viral pneumonia—not bronchial or ventilator pneumonia where bacteria are introduced by non-sterile air that can generate "pus" that can be easily seen in the lungs under the microscope. 8EHRR86.

c. Subdural blood seen at autopsy is not evidence of multiple impact sites

223. Dr. Auer noted that radiologist Dr. Mack, after studying Nikki's CT head scans taken at the time of her initial hospitalization on January 31, 2002, concluded that "The imaging findings show definitive evidence of ***an*** impact-related insult to the right side of the head." APPX93 (emphasis added). Dr. Auer translated as follows using an image from the CT head scans in his PowerPoint:

> there has been an impact to the skull on the right side posteriorly where the blue arrow has been inserted by Dr. Mack presumably; and there is some soft tissue swelling, which would be called in English a goose egg or a boo-boo if a child hit themselves; and this is the site of a single impact. It is not sufficient to fracture the skull, and we will see that the skull is actually very thin [at that point], only about an eighth of an inch.

8EHRR19-20; *see also*APPX110A.

224. Dr. Auer, based on his expertise in head trauma, found that the single impact site showed a minor injury as there was no fracture to the skull but only a goose egg. 8EHRR20. Also, the radiology confirmed that, underneath the goose egg,

at the time the scan was taken, there was only "a small subdural collection" of blood at the impact site. 8EHRR21-22.

225. Dr. Auer opined that the subdural bleeding apparent at autopsy did *not* indicate other impact sites but instead suggested "continued profusion through leaky vessels." 8EHRR22. The sequence of events was: Nikki's heart stopped, ischemia set in, meaning low or no oxygenated blood was flowing, then pressure on the vessels in the subdural space increased, causing them to leak, first water then red blood cells. This process was accelerated as blood flow *from* the heart increased but blood flow *into* the brain was no longer possible. 8EHRR23. Dr. Auer opined that Dr. Urban's suggestion that the subdural hemorrhage matched external evidence of blows or impact sites was wrong. 8EHRR76. The "very faint bruising" captured in Dr. Urban's own photographs likely came from handling the child after her collapse. And, as Dr. Auer noted, because this child was experiencing "disseminated intravascular coagulation" or "DIC" and had elevated D-dimer and partial thromboplastin during her final hospitalization, one could not touch her without leaving some marks. 8EHRR77-78; 8EHRR38-39.

d. Effect of medical treatment on Nikki before the autopsy

226. Dr. Auer also identified and explained at length in his report how the medical treatment that Nikki received at both the Palestine and Dallas hospitals

during the two days before the autopsy affected what was later seen by Dr. Urban and captured in photographs taken during her autopsy. *See* APPX110.

227. According to Dr. Auer, the fact that Nikki already appeared "blue" when she arrived at Palestine Regional indicated "deoxygenated hemoglobin at a concentration of more than 5 gras per deciliter," meaning her blood had been deprived of so much oxygen that its coloration had turned from bright red to blue.[29] This condition is a sign of hypoxia. 8EHRR25-27. Thereafter, Nikki's heart was restored, but not her brain because she had already experienced brain death. That is, her brain had become "nonperfused," a condition that, as Dr. Auer instructed, cannot be reversed. 8EHRR32. Dr. Auer explained that, after 10-12 minutes of heart stoppage, the brain shuts down. A person is not only rendered unconscious but sustains brain death. Thereafter, blood in the skull can never reenter the brain itself. 8EHRR62.

228. Although Nikki's brain had become nonperfused, Nikki's resuscitated heart was still pushing out blood. 8EHRR27. The scalp remained perfused; thus, blood could flow through the scalp but was trapped there, being unable to penetrate the brain. 8EHRR28. Therefore, there was a causal connection between the brain death caused by hypoxic ischemia and the accumulation of subdural and intradural

[29] Because Dr. Urban did not obtain any information from Palestine Regional, she did not know or consider this important fact.

blood. 8EHRR32. The blood that could not penetrate the brain detoured around the brain underneath the scalp. 8EHRR34. This phenomenon contradicts the hypothesis that shaking or impact caused the accumulation of considerable subdural blood. 8EHRR34.

229. Meanwhile, the process Nikki was being put through in the ER to try to revive her would not have been a gentle one. Dr. Auer noted that it would have been necessary, for instance, to grab the head and the jaw for bag-mask ventilation and intubation, treatment processes that were documented and likely caused the minor bruises and scrapes observed on Nikki. 8EHRR64.

230. Moreover, Dr. Auer noted that, as Nikki was moved to Children's Hospital in Dallas, she was receiving epinephrine and three other drugs that stimulate blood flow: vasopressin, dopamine, and heparin. 8EHRR66-68. Her pulse was raised to over 200.

231. The blood pumped through her resuscitated heart was pouring towards the brain, but could not resuscitate the brain—or even get through. 8EHRR63-66. Anatomically, there was "no chance of ever getting blood through that brain again" once it became nonperfused (the condition commonly referred to as "brain death"). 8EHRR65.

232. When Dr. Urban conducted the autopsy on February 2, 2002, she observed an accumulation of subdural blood. She did not, however, reconstruct past

events to assess how that accumulation in the subdural space (which Dr. Urban referred to as "subscapular") had occurred *during* Nikki's hospitalization. 8EHRR67.

233. Had Dr. Urban looked at the initial CT scans, she would have seen the relatively small subdural hematoma captured in the x-rays corresponding to a single impact site. Had Dr. Urban studied the hospital records, she should have noted several phenomena that increased the pressure inside Nikki's head and increased the volume of blood in the subdural space. Nikki had been experiencing DIC (or consumption coagulopathy), which meant that her blood was not clotting properly. 8EHRR68-69. This condition further explains the volume and condition of the blood later seen in the subdural area during the autopsy.

234. Dr. Auer explained how he reconstructed the development of Nikki's condition at the time of autopsy, using demonstratives in a PowerPoint he created based on his lengthy report:

> In a normal child, 60 percent of the cardiac output [of blood] goes to the brain at two-and-a-quarter years of age [Nikki' age]. That's quite astounding. When that blood can't go through the brain with high blood pressure, it goes to the eye, the dura, the scalp, the face, and you often get bruising and bleeding. The eye is supplied by the central retinal artery which comes out of the eye at the back . . . , and it arises from the ophthalmic artery, and that comes off the carotid artery, and the carotid artery perfuses the ophthalmic and the retina even during brain death. So you have arterial perfusion of the retina in brain death.
>
> If you go to the right, the dura, it is supplied by the middle meningeal artery which comes off the maxillary artery which comes off

> the external carotid artery. So the dura is supplied also arterially by blood flow during brain death, and the blood has nowhere to go through the brain. So it detours around the brain via these anatomical pathways, and the stop sign [symbol] below the brain [depicted in the PowerPoint slide] is because the blood can't enter the brain.
>
> So we have all of this arterial flow to the eye and arterial bleeding in the dura during brain death, and this is commonly misread as trauma, the bleeding, but it's actually hemodynamic bleeding. It's a blood flood as I put on the -- on the slide, and the reference shows that the retina continues to be perfused during brain death, number one; and, number two, it shows that a two-and-a-quarter-year-old as Nikki has an enormous fraction. More than half of the blood is supposed to go to the brain, but it can't. So it goes to the eye and the dura.

8EHRR69-70; *see also* APPX110 (report admitted as a demonstrative); APPX110A (PowerPoint admitted as a demonstrative).

235. The blood observed at autopsy was no longer the small subdural bleeding close to the single impact site visible in the CT scan taken at the Palestine hospital. The bleeding had become "bilateral"—it was "everywhere"—because more blood had been pushed into the subdural space by flow that was increased by the epinephrine, vasopressin, and the dopamine yet could not enter the nonperfused (dead) brain. 8EHRR72; 8EHRR75. At that point, the blood in the subdural space was considerable but had little to do with the small hematoma associated with the single, minor impact site at the back of the head captured in the x-rays on January 31, 2002. *Id*. Since that blood could not return to circulation, it accumulated outside of and around the brain, which is what Dr. Urban observed when she pulled back Nikki's scalp during her autopsy on February 2, 2002. 8EHRR76.

4. Dr. Auer's conclusions regarding causation

236. Dr. Auer concluded that Nikki's undiagnosed pneumonia, "with the layer of drugs suppressing her respiration," caused her to stop breathing and experience cardiac arrest. 8EHRR82. The cardiac arrest then set off a cascade of events that explain what was observed inside Nikki's head when she arrived at the Palestine hospital—subdural hematoma, edema/brain swelling, and retinal hemorrhage:

> the cardiac arrest deprives the cells called endothelial cells, which are in front of you, the lining cells of the blood vessels, from blood flow. They then immediately start to separate from each other, and they leak, and they do that within minutes, and you get brain edema after cardiac arrest. Often [in] minutes or more, you get a lot of edema and that presses the vessels shut from the outside.

8EHRR82.

237. Although Dr. Auer opined that the primary cause of Nikki's death was the undiagnosed pneumonia, he acknowledged that hers is a case of "co-pathology," meaning that many things went wrong causing her to stop breathing, including the promethazine, which was "very dangerous" and is no longer supposed to be given to patients of Nikki's age because of many adverse side effects, including respiratory depression. 8EHRR91. On top of that, the codeine she was prescribed is a narcotic that metabolizes into morphine, which causes breathing to stop. 8EHRR92.

238. Also, as Dr. Auer explained, when a person has hypoxia, it causes them to become woozy, they tend to fall over—especially a toddler like Nikki. Therefore,

a fall in her circumstances was predictable. 8EHRR94. But, in Dr. Auer's view, the fall and resulting impact to the back of her head (evidenced by the goose egg seen in the hospital and the CT scans) did not cause Nikki to stop breathing. Dr. Auer explained that head injuries, physiologically speaking, do not prompt a person to stop breathing; breathing accelerates even after a person is knocked unconscious, as is visible during a knock-out in a boxing match. 8EHRR95-96.

239. Dr. Auer, relying on the CT scans as interpreted by radiologist Dr. Mack, was adamant: there is no evidence of multiple impact sites; they are not there. 8EHRR79. He found "no support for multiple impact sites neither on the brain nor in the skull nor in the scalp." 8EHRR126. He found "no evidence for multiple impact sites whatsoever." 8EHRR139.

240. Also, Dr. Auer emphasized the complete absence of any contusions on the brain itself; he looked for them and found that they do not exist. 8EHRR96.

241. Dr. Auer was asked to summarize his conclusions regarding cause of death. He attested:

> Nikki was a 2-year-old who had viral pneumonia causing a breathing arrest, and she had fever, multiple visits to the doctor since a tender age of seven days culminating after lifelong infections in a very predictable cardiac arrest. When she was brain dead, she was resuscitated with epinephrine and she also developed disseminated intravascular coagulation, or DIC, and the recirculation detours the hemorrhage around the nonperfused brain, and this was misinterpreted as a fatal, major head trauma when she had only a minor goose egg.

> In a 2-year-old, most of the blood goes through the brain. Actually, 60 percent of the heart output goes through the brain in a normal 2-year-old, which is an astounding proportion of the heart flow going through the brain, and all that blood has no place to go in a nonperfused brain. So the arterial supply of the retina and the dura, which continues during nonperfused brain, gives rise to these hemorrhages.

8EHRR46-47.

242. Dr. Auer opined that, although many things came together to contribute to Nikki's death, none of which involved intentionally inflicted head trauma, the ultimate cause is simply explained by her pneumonia. 8EHRR93. Dr. Auer connected all of the data points as follows:

> Nikki has multiple causes to stop breathing. She's got multiple respiratory depressant drugs, including promethazine in very high doses and codeine in lower doses, that disappeared by the time of the autopsy toxicology. She's got pressure-driven bleeding by arterial bleeding into the retina and dura with a hyper-dynamic circulation due to epinephrine supplemented by dopamine and vasopressin. And all that is added to a pneumonia that by itself causes collapse and death.

8EHRR97.

243. Dr. Auer was quite certain that this case is not a homicide because Nikki's fatal breathing stoppage is "fully explained" by "a very severe and deep and chronic fever-producing through most of her life, apnea-producing pneumonia"—along with the "high doses of drugs in her system," and then "a minor fall" that impacted the head and gave rise to a right-side subdural hematoma. But resuscitating her heart and then giving her epinephrine and other drugs in the hospital caused leakage of blood vessels "everywhere in the dura," the result of which was later

misconstrued as proof of trauma. Yet there was no fatal trauma—inflicted or otherwise. 8EHRR103-105.

244. Dr. Auer concluded that "The manner of death is clearly natural, and the fall off the bed is clearly accidental. . . . [I]t's not a homicide either. So this is an inaccurate characterization of the manner of death based on the evidence." 8EHRR127. The Court agrees.

B. Testimony of Dr. Janice Ophoven

1. Dr. Ophoven's qualifications

245. Dr. Ophoven has been a licensed medical doctor since 1971. 3EHRR13. She is board certified in forensic pathology and anatomic pathology with special training and experience in pediatrics and pediatric pathology. 3EHRR13-14. She began her medical career as a pediatrician before becoming an expert in child abuse and child death cases and then focused for decades on the subspeciality of pediatric pathology. 3EHRR14-22. She was on the staff of the St. Paul Children's Hospital in Minneapolis, during which time she worked almost exclusively with law enforcement and prosecution and consulting with medical examiners' offices on particularly challenging pediatric death cases. 3EHRR22-23 She developed a nationally recognized model advocacy center for consulting on how to assess suspected cases of child abuse and ultimately helped train law enforcement throughout the state on how to investigate injuries or fatalities of children mostly

less than two years of age and trained physicians in identifying families at risk to help prevent child abuse and other domestic violence. 3EHRR23-24.

246. Dr. Ophoven was instrumental in promoting recognition of child abuse as a very real societal problem and, to this day, at least once a week, makes diagnoses that violence perpetrated against a child was the cause of brain damage. 4EHRR68.

247. Dr. Ophoven has performed many hundreds of autopsies on children and consulted on hundreds more. 3EHRR25-26; 4EHRR87; 4EHRR96. She has authored a chapter of a medical textbook on forensic pediatric pathology, beginning in the 1990s, which was the first of its kind. 3EHRR25-26.

248. She has testified as an expert over 200 times in state and federal courts, for both the prosecution and the defense, and has also testified as an expert witness in proceedings in the United Kingdom and Australia. 3EHRR26-27; 4EHRR89. She has frequently been asked to provide expertise in cases involving child death cases, including cases involving toddlers with similar brain damage as observed in Nikki. 3EHRR28.

249. The Court accepted Dr. Ophoven as an expert in forensic pathology with a particular emphasis in pediatric pathology without objection from the State. 3EHRR30.

250. The Court finds and concludes that Dr. Ophoven was qualified to opine and that she was a credible witness.

2. Dr. Ophoven's methodology in assessing the cause of Nikki's death

251. Dr. Ophoven was asked to conduct an independent forensic analysis; and in preparing to do so, she reviewed (1) all of Nikki's available medical records; (2) witness statements and medical records reflecting Nikki's condition in the days and weeks before the fatal event; (3) all available records of the emergency and in-patient services she received; (4) the autopsy report created by Dr. Jill Urban and all available supporting materials; (5) the trial testimony provided by medical doctors; and (6) investigative materials and reports. 3EHRR29; 3EHRR31-32.

252. Dr. Ophoven concluded from all available evidence that Nikki had sustained a single impact to her head within 72 hours of her presentation for medical attention. 3EHRR32. Dr. Ophoven found evidence of the impact located "to the right posterior lateral or side of the back of the head[.]" 3EHRR32. As Dr. Ophoven explained the radiographic evidence, or x-rays/CT scans, shows changes to Nikki's scalp in the form of swelling of the skin and soft tissue at a discrete impact site. 3EHRR43; 3EHRR82-88 (accord with Dr. Squires' trial testimony at 42RR109).[30] Dr. Ophoven further noted that the radiographic evidence aligned with a diagram made during the autopsy showing a single impact site "to the right posterior lateral

[30] Dr. Squires saw evidence of only a single minor impact site, which was why she believed shaking was the primary cause of Nikki's condition. 42RR109-110 ("[m]y estimation, after a consultation with all, that there was some component of shaking that happened to explain all the deep brain injury out of proportion … to the injury to the skull and the back of the head.").

side, back of her head" as well as "bleeding under the scalp and swelling of the scalp over the right side" associated with the impact. 3EHRR43; 3EHRR65; 3EHRR68; 3EHRR72; 4EHRR157-158; *see also* SX58. She concluded that this impact resulted in subdural bleeding and then "a cascade of complications over time that led to other findings that include increased intracranial pressure, severe brain swelling, retinal hemorrhage, and brain death." 3EHRR32-33.

253. Dr. Ophoven concluded that the designation of death should not have been homicide. Based on the scope of her review, she would have concluded that the cause was undetermined. 3EHRR34. In part, this is because there is no scientific basis for looking at an impact site and concluding whether it was intentionally inflicted or the result of an accidental fall. 3EHRR57. What needed to be done was an inquiry into whether there was a problem with Nikki's breathing. 3EHRR58.

254. The Court finds that Dr. Ophoven did not have the opportunity to see the original autopsy slides, yet, as Dr. Auer explained, that evidence is essential to forming a definitive opinion regarding cause and manner of death. 8EHRR169. Because Dr. Ophoven did not see the autopsy slides, including the slides of lung tissue that Dr. Auer and Dr. Wigren studied under a microscope, she did not have access to the evidence of pneumonia—as both Dr. Auer and Dr. Wigren did. The Court finds and concludes that there is no contradiction among the causation

opinions offered by Mr. Roberson's experts, however. Dr. Auer offered the most complete, evidence-based explanation based on his special expertise in this field.

3. Dr. Ophoven's conclusions regarding causation

255. Dr. Ophoven, in accord with Dr. Auer and Dr. Wigren, found that Nikki died because her brain stopped due to "increased intracranial pressure and swelling" that was a function of ischemia or lack of oxygen. 3EHRR34. Based on the information available to her, Dr. Ophoven was unable to conclude what had caused the lack of oxygen; that would have required further investigation. Dr. Ophoven was, however, confident that the evidence available at the time of autopsy does not support a conclusion that the precipitating event was caused by "shaking" *or* by multiple impacts to the head. 3EHRR34. Similarly, she was confident that darker blood in the subdural space is not evidence of multiple impacts as Dr. Urban told the jury. 3EHRR69.

256. Dr. Ophoven opined that all of the internal head injuries observed in Nikki simply means that she had suffered irreversible damage from oxygen deprivation. 3EHRR81. Dr. Ophoven, like neuropathologist Dr. Auer, saw no evidence of any kind that the brain itself had been bruised. 3EHRR78. Nor did the neuropathology work-up requested by Dr. Urban find brain bruising. 3EHRR79.

257. Dr. Ophoven found that the evidence supports a conclusion of a single impact site on the back of Nikki's head, contrary to Dr. Urban's assessment. But

considerable other evidence, never considered by Dr. Urban or anyone else at the time, shows that the impact site was not the only factor that contributed to the cascade of conditions in Nikki—subdural bleeding, brain swelling, herniation, retinal hemorrhages. 3EHRR49. The blood vessels on the under-side of the dura became damaged by oxygen-deprivation. 3EHRR52. Once damaged, the vessels began to leak into the subdural space, thereafter causing braining swelling, herniation, and retinal hemorrhage. 3EHRR52. Dr. Ophoven provided a detailed, anatomical explanation:

> The brain sits inside the cranial cavity with the blood coming in through the blood vessels in the neck extending all the way out to serve and service the cells of the brain, and the brain is contained within the bony structure of the skull. Between the brain and the skull are a number of membranes and materials that secure the brain and have a variety of functions. The dura sits right on the skull bone, which is a dense fibrous membrane. The arachnoid sits right against the dura, the arachnoid membrane, and the pia, which is a membrane on the actual surface of the brain. . . . But if the dura bleeds, then that bleeding will accumulate between the arachnoid and the membrane and form a new space, the subdural space, that holds this blood.

3EHRR50-51.

258. Dr. Ophoven further explained that anyone who stops breathing and has their heart stop is at risk for the same constellation of internal head injuries Nikki sustained. 3EHRR53. If the brain is deprived of oxygen, swelling occurs. Then, as pressure against the brain increases, bleeding into the eyes, which are connected to the brain, can occur. 3EHRR53-55.

C. Testimony of Dr. Carl Wigren

1. Dr. Wigren's qualifications

259. Carl Wigren, M.D. has been licensed since 2001 after obtaining a medical degree from the University of Washington School of Medicine. 5EHRR159. He is a forensic pathologist with a specialty in anatomic pathology and a subspeciality and special training from the American Board of Pathology and Forensic Pathology. 5EHRR156. He has worked as a medical examiner and as a private consultant and, to date, has performed over 2,000 autopsies and maintains an active practice. 5EHRR157. He is a member of the American Academy of Forensic Sciences. 5EHRR157-159; APPX92.

260. Dr. Wigren has been accepted as an expert and testified in 120-125 cases, both civil and criminal. His testimony has been sponsored by parties for both sides. 5EHRR161; 6EHRR10.

261. The Court accepted Dr. Wigren as an expert in forensic pathology, without objection to his qualifications from the State. 5EHRR163-165.[31]

262. The Court finds and concludes that Dr. Wigren was qualified to opine and that he was a credible witness.

2. Dr. Wigren's methodology

[31] The State did not object to Dr. Wigren's qualifications to opine; however, the State did object to his testifying about the cause and manner of Nikki's death as "outside the scope" of the Court of Criminal Appeals remand order. This Court overruled that objection.

263. For this case, Dr. Wigren was asked to conduct an independent assessment of cause and manner of death after: examining the medical testimony proffered at the trial; reviewing the autopsy report that was rendered following the examination of Nikki Curtis; looking at the autopsy photographs of Nikki Curtis; studying under a microscope the histology, which are the microscopic slides from samples that were taken by the forensic pathologist who performed the autopsy (Dr. Urban); and reviewing relevant information gathered by law enforcement. 5EHRR162. The latter included scene photographs of the bed and the cinder blocks underneath the bed holding it up. 5EHRR165-166; *see* APPX40-45. Dr. Wigren also noted that the lead investigator, Detective Wharton, saw nothing suggesting that violence had occurred in the house where Nikki had collapsed.[32] 6EHRR30.

264. Dr. Wigren was required to travel to the Dallas crime lab (SWIFS) with his own microscope to obtain access to the original autopsy slides that Dr. Urban had created on February 2, 2002 during Nikki's autopsy. 5EHRR166. At the crime lab, Dr. Wigren was surprised to see that the file did not include CT scans that had been made of Nikki's head or any other medical records. 5EHRR166. Dr. Wigren asked that follow-up inquiries be made at the two different hospitals where CT scans had been made (Palestine Regional and Children's Hospital) during Nikki's last

[32] Detective Wharton, testifying in this proceeding, reaffirmed that the investigators had looked for signs of violence at Mr. Roberson's house and found none. 7EHRR23-24; 7EHRR26.

days; however, both hospitals stated that the scans were no longer available, which struck him as odd in a case involving the death of a child and a criminal prosecution. 5EHRR167-168.

265. After the head scans were later found in the courthouse basement in August 2018, Dr. Wigren asked that a radiologist, trained to interpret such scans, be consulted. 5EHRR169. Ultimately, Dr. Julie Mack, a radiologist with Penn State Health Milton S. Hershey Medical Center, was able to review digitized copies of the head scans that had been taken when Nikki was first brought into Palestine Regional the morning of January 31, 2002. Dr. Mack prepared a report that Dr. Wigren reviewed and relied on. 5EHRR172; APPX93.

266. Dr. Wigren also consulted with a neuropathologist, Dr. Roland Auer, because of his special expertise in the nervous system (the brain, the eyes, the spinal cord, and related nerves). 5EHRR178-179. Dr. Auer is the author of an advanced treatise, Forensic Neuropathology and Neurology, that Dr. Wigren relies on. 5EHRR182; APPX94. Dr. Wigren believed that a consultation with Dr. Auer was advisable because Nikki's injuries seemed to be neurological. Dr. Wigren requested that Dr. Auer study the autopsy slides himself to determine if Nikki's injuries were related to trauma, specifically, blunt force injury to the head, or were due to the absence of oxygen to the brain for an extended period. 5EHRR280.

267. Additionally, while looking at the lung autopsy slides, Dr. Wigren had noticed that Nikki's lungs exhibited signs of pneumonia—not a hospital-acquired, ventilator pneumonia, but chronic interstitial pneumonia that was causing changes to the actual lung tissue. 5EHRR183; 6EHRR14. Dr. Wigren's review of the medical records revealed that, in the week prior to her death, Nikki had been quite ill with temperatures reaching up to 104.5 degrees on January 29, 2002, the last day she was seen by a doctor before her collapse the morning of January 31, 2002. 5EHRR180. Dr. Wigren asked Dr. Auer to look at the lung autopsy slides to determine whether the signs of pneumonia in Nikki's lung tissue indicated an infection that had existed before her final admission to the hospital. 5EHRR181.

268. Aside from observing issues in Nikki's lung tissue, Dr. Wigren noted that the autopsy report itself contained several pieces of information suggesting that Nikki's lungs were infected. First, the autopsy report stated that the right lung had been measured at 170 grams, and the left lung at 150 grams. Dr. Wigren explained that those lung weights were roughly double the normal lung weight seen in a child of Nikki's age. 5EHRR184. Second, the autopsy noted other problems with Nikki's respiratory system: "Sectioning of the lungs discloses a dark red-blue, moderately congested, slightly edematous parenchyma." Dr. Wigren explained that that notation was significant because lung tissue is not ordinarily dark red-blue; and the description of "edematous parenchyma" means that the lungs were congested,

suggesting a pneumonia. Third, according to the autopsy report, the trachea (the windpipe going into the lungs) had signs of chronic inflammation, indicating that Nikki's body had been fighting an infection for some time. Fourth, the autopsy report refers to "interbronchial aggregates of neutrophils" and "macrophages." Dr. Wigren explained that the reference to "neutrophils" suggested the presence of an infection in the lungs. Moreover, "macrophage" are large cells that take more time to form and "eat" other cells as a defense against infection. Additionally, Dr. Wigren observed that, under the microscope, the lung tissue was widened, with "lymphocytes" within the tissue, another indicator of a chronic lung infection. 5EHRR184-187.

269. Dr. Wigren explained that a finding of pneumonia is significant because pneumonia decreases oxygen intake as it spreads. 5EHRR188. As oxygenation levels start to drop, a person starts to experience shortness of breath until a tipping point occurs when insufficient oxygen is reaching the person's brain, and they become "hypoxic," disoriented, and vulnerable to collapse. 5EHRR188-189.

270. Dr. Wigren explained and demonstrated the importance of consulting with experts in other disciplines as part of conducting an adequate forensic assessment. 6EHRR42. As he explained, this kind of multi-disciplinary approach is especially important in a complex case like Nikki's with "many moving parts." 5EHRR201. Among the kinds of experts that needed to be consulted in this case,

where a short fall had been reported, was a biomechanical engineer because this is the expert best equipped to ascertain the kind of forces that can impact the head and cause potentially fatal injuries. 5EHRR169.

271. In endeavoring to ascertain cause and manner of death, particularly of a child, Dr. Wigren attested that a forensic pathologist must conduct a "mini-inquest," using information obtained from law enforcement, CPS, family members, and medical records. The investigation requires a complete medical history of the decedent, an understanding of the scene where the child was reportedly injured, and knowledge of any medications the child may have been taking at the time of her collapse. 5EHRR159-160; 6EHRR31. Dr. Wigren opined that, generally, the more information a forensic pathologist gathers, the more likely any determinations of cause and manner of death are going to be accurate. 5EHRR178.

272. Dr. Wigren emphasized that it is important for forensic pathologists to visit the scene themselves to look at the environment and take measurements and to ask specific questions relevant to understanding the circumstances of the child's injuries. 5EHRR219-220. In the case of Nikki Curtis, that would have entailed asking precisely where on the floor Nikki had been found and what position she was in and studying the environment, including the bed that was propped up on cinder blocks, where she had purportedly fallen. 5EHRR220-224. Without viewing the

scene, a statement that she "fell out of a bed" provides very little information for the forensic pathologist to evaluate.[33] 5EHRR224.

273. Dr. Wigren also explained the importance of distinguishing between Nikki's condition at the time of admission to the hospital versus at the time of autopsy. For instance, once transferred to Dallas, Nikki had an intracranial pressure monitor drilled into the right side of her skull to monitor her brain. That process would cause bleeding into the scalp, further altering what would be observed at the time of autopsy. 5EHRR173; 5EHRR175. Dr. Wigren also explained that intracranial pressure is normally measured around 5-15, whereas during Nikki's last hospitalization, hers was measured up to 60-65,[34] which is why medical professionals elected to drill the pressure monitor into her skull. 5EHRR239.

3. Dr. Wigren's conclusions regarding causation

274. After conducting a comprehensive, independent forensic assessment, including consulting with qualified experts with expertise in other disciplines, Dr. Wigren identified several factors that were critical to understanding his conclusion that Nikki's death was not a homicide. These factors include: (1) the report of a fall off of a bed; (2) the evidence (CT scans and autopsy photographs) of only a single

[33] Dr. Urban conceded that she did not undertake any investigation of the scene. Yet even the State's retained expert testified that he always visited the scene when he was a practicing medical examiner. 9EHRR62.

[34] Likewise, Dr. Ophoven opined that intracranial pressure should be "between 5 and 15 millimeters of mercury," yet Nikki's was measured at 65. That degree of pressure meant "no blood was circulating" and her brain was already dead. 3EHRR79-80.

impact site to the back of Nikki's head that was consistent with the report that she had sustained a short fall; (3) evidence in the toxicology report of potentially toxic quantities of a drug (Phenergan/promethazine) in Nikki's bloodstream at the time of autopsy, a drug which had been prescribed to her on January 29, 2002, less than two days before her collapse; (4) evidence that she had also been prescribed cough syrup with codeine,[35] a narcotic that metabolizes into morphine; (5) evidence that the fall occurred while she was in an unsafe and unfamiliar sleep environment, a bed that consisted of a mattress and box springs that had recently been propped up on two layers of concrete cinder blocks, some of which were sticking out from under the box springs;[36] and (6) evidence that Nikki had undiagnosed pneumonia. 5EHRR201-209; *see also* APPX95 (Dr. Wigren's chart/demonstrative); 5EHRR225-238; 6EHRR25.

275. Dr. Wigren walked through each of these factors and how they were relevant to understanding the toddler's circumstances when she experienced an unwitnessed fall around 5:00 AM in the morning while cognitively impaired from an underlying illness that affected her lungs and from the promethazine and codeine

[35] Codeine/morphine alone makes it difficult to breathe. That is why morphine is used to relieve pain at the end of life. 5EHRR239. Additionally, it is not supposed to be given to children under 12 years of age. 6EHRR29.

[36] Larry Bowman testified in this proceeding that Nikki "always" slept in the same bed with him and his wife and she would move around "like a little brush hog or something just going around and around." 6EHRR172. No one compared the two sleeping environments, but it was uncontested that Nikki had not previously stayed over at Mr. Roberson's house with the bed propped up on cinder blocks.

in her system, drugs that have a sedating effect and further depress the respiratory system. 5EHRR227-228.

276. Dr. Wigren concluded that Nikki's condition was caused by multiple factors that came together to cause an "unfortunate accident" and was "absolutely not" a homicide. 5EHRR240; 5EHRR244.

277. Dr. Wigren opined that SBS/AHT played no role in causing Nikki's death. 5EHRR244.

III. NEW EVIDENCE OF SIGNIFICANT FLAWS IN THE 2002 AUTOPSY

278. Dr. Ophoven testified that, for many years, when a child had died and there was evidence of anything that suggested trauma, medical doctors were taught to assume abuse first absent some "clear-cut traffic accident" or similar event to put ensuring children's safety first. 3EHRR41-42. Thus, bias was explicit. Current teaching is that medical examiners must differentiate between opinions and speculation on one hand and evidence-based, scientific interpretation on the other hand. 3EHRR41-42.

279. The Court finds and concludes that Dr. Urban failed to maintain sufficient objectivity during the initial investigation or thereafter in considering the critiques of an autopsy performed twenty years ago when she was relatively inexperienced.

A. Errors of Omission

280. The Court finds and concludes that it is uncontested that Dr. Urban's autopsy report, which was put before the jury, and her trial testimony regarding the same do not discuss any of the following:

- Nikki's medical history, including her illness during the days right before her collapse;
- The implications of the toxicology finding of a high level of promethazine still in Nikki's system at the time of autopsy;
- The prescriptions Nikki was given during her last doctor's visit less than two days before her collapse, which included Phenergan/promethazine in two forms and cough syrup with codeine;
- The environment where Nikki reportedly fell off the bed and was found on the floor and any consideration of how an accidental fall may have caused any of the injuries observed in Nikki when she arrived at the hospital;
- The drugs given to Nikki during her final hospitalizations or how those drugs would have affected vascular circulation inside Nikki's head after her brain was already nonperfused (dead); or
- The CT scans of Nikki's head taken at Palestine Regional and Children's Hospital before the autopsy showing a single impact site.

8EHRR107-108; *see also* APPX12 (autopsy report dated 2-02-2002).

281. The Court finds and concludes that all of these omissions seriously undermine confidence in Dr. Urban's methodology and conclusions.

282. The Court finds and concludes that, collectively, these omissions show that Dr. Urban did not undertake a "differential diagnosis," identifying all relevant circumstances and conditions in an individual complainant before rendering an

opinion in a criminal case. 4EHRR72-73. As Dr. Wigren opined, instead of considering the multiple factors that likely caused Nikki's death, Dr. Urban saw an impact site then concentrated on the subdural hemorrhage and retinal hemorrhage and interpreted those conditions, incorrectly, as multiple impact sites from which she further extrapolated wounds that had been intentionally inflicted. 5EHRR241.

283. Dr. Urban made no effort to consider the role of Nikki's underlying illness and its effect on respiration. 4EHRR78-79. Dr. Urban did not consider Nikki's history of breathing apnea that had prompted a neurological workup in September of 2000, when a CT scan had also been taken. 5EHRR176. That earlier scan might have indicated whether Nikki was particularly vulnerable to subdural collection of blood after an impact to the head. 5EHRR176-177. But it was never investigated by Dr. Urban, who did not review any of Nikki's medical records.

284. Although the medical records show that Nikki had developed an inability to clot her blood, Dr. Urban did not investigate or consider this circumstance. 3EHRR55.

285. Dr. Urban's autopsy report includes the unexplained statement that "Interbronchial aggregates of neutrophils and macrophages" were observed in Nikki's lungs. APPX12. Dr. Urban likely lacked the expertise in 2002 to recognize evidence that Nikki had life-threatening interstitial pneumonia, but her inability or

unwillingness to learn from the contemporary teachings of more experienced experts raises additional concerns.[37]

286. Dr. Urban did not make a reasonable effort to distinguish between injuries or bleeding associated with treatment Nikki received in the hospital versus her condition when initially admitted to Palestine Regional. 5EHRR175. Dr. Urban did not consider what happens to the brain when it stops receiving sufficient oxygen and then dies. Dr. Wigren and Dr. Auer explained that, once this occurs, blood cannot move through the brain. Meanwhile, increased intracranial pressure would have caused the tiny blood vessels related to the brain to rupture. Once the brain itself was unable to absorb blood, the accumulating blood detoured around the brain, trapped in the subdural space.

287. Dr. Urban did not consult with a biomechanical engineer about matters of physics and the kinds of forces that can cause injury. Instead, Dr. Urban agreed at trial with Dr. Squires, a child abuse pediatrician without any evident training in biomechanics, when the latter claimed that "rotational forces," *i.e.*, shaking motions, "were the likely mechanism" that caused Nikki's brain injury. 5EHRR194 (quoting

[37] According to Dr. Auer, the word that Dr. Urban used,"interbronchial," is not a location in the lungs, but he understood her to be referring to part of the airways. "Neutrophils" are essentially "pus," which would have been associated with bronchial pneumonia, which Dr. Auer did not see and thus believes she may have used this term in error. Dr. Auer said that "macrophages" *were* found when Dr. Auer looked at the lung tissue under a microscope, but, as he explained, macrophages are associated with a longer-term infection and thus further support the finding of viral pneumonia, not ventilator pneumonia as Dr. Urban suggested in this proceeding. 8EHRR112.

trial testimony). As Dr. Wigren explained, forensic pathology does not involve the study of physics and the study of forces and related mechanisms of injury is outside their purview (as well as outside the expertise of pediatricians like Dr. Squires).[38] *Id.*

288. Dr. Urban had requested a toxicology report but nothing in her autopsy report indicates that she took its results into account. The toxicology report showed that, at the time of autopsy, Nikki's blood still had promethazine in her system of a quantity that would be toxic in a child of her age and size. Promethazine had been prescribed to her on January 29, 2002 along with codeine. Dr. Urban should have been prompted by the toxicology report to consult, at the very least, a basic treatise that would have shown that Nikki had very high amounts of promethazine in her postmortem blood. Dr. Urban did not consider the presence of that drug or the effects it would have had on Nikki's nervous system at all. Nor did Dr. Urban consider how this drug would have affected Nikki in light of her chronic underlying infections, her recent temperature of 104.5, or the codeine that she had been prescribed. 5EHRR229-238.

[38] The State's retained expert, trained in anatomical and forensic pathology, endeavored to opine at length about biomechanics and offered self-contradicting opinions about the current teaching from experts actually trained in biomechanical engineering, such as Dr. Monson. The Court does not find Dr. Downs' opinions on this subject reliable but notes that he admitted that short falls can, under certain circumstances, cause serious and even fatal injuries, a position rejected consistently by State's witnesses at trial. *Compare* 9EHRR144 *to* 41RR66; 41RR69; 41RR89; 41RR99; 41RR123-125; 42RR17-18; 42RR83-85; 42RR108; 43RR156.

289. The Court finds and concludes that Dr. Urban did not consider Nikki's medical history, her current symptoms and medications, the postmortem toxicology showing a high level of promethazine in the post-mortem blood, or the scene where the reported fall occurred, all of which were material.

290. The Court further finds and concludes that the failure to consider the CT scans taken of Nikki's head when she arrived at Palestine Regional alone was material. Those scans constitute critical exculpatory evidence because they directly contradict Dr. Urban's finding of "multiple impact sites" on the head that she believed had caused Nikki's internal head injuries. The CT scans showing a single impact site corroborate Mr. Roberson's report of a fall from the bed.

291. The autopsy report associated with Nikki Curtis does not mention any CT head scans, those taken when she was first admitted to Palestine Regional or after she was transferred to Children's Hospital in Dallas. *See* APPX12. At trial, State's expert Dr. Janet Squires referred to the CT scans and the evidence of only a single impact site. But Dr. Urban, the medical examiner, did not refer to the head CT scans in either her autopsy report or her trial testimony. 5EHRR168.

292. Contrary to Dr. Urban's testimony and her 2016 affidavit, only a single impact site can be observed in the CT scan. 5EHRR172; APPX93. Specifically, radiologist Dr. Mack reported seeing a single impact site and associated soft tissue swelling over the right side of Nikki's skull. *Id.* Dr. Mack focused on the very first

CT scan taken shortly after Nikki's arrival at the hospital in Palestine because it most accurately captured Nikki's condition at the time of admission—before she was put through two days of extensive medical treatment. 5EHRR172.

293. The Court finds and concludes that Dr. Urban reached a determination that Nikki's death was a homicide without considering multiple relevant factors and thus her conclusion cannot be considered based on "a reasonable degree of medical certainty." 4EHHR81.

B. Errors of Commission

294. In addition to the material omissions, the Court finds and concludes that several errors of commission, as illuminated by reliable expert testimony, taint Dr. Urban's autopsy report and trial testimony and are material to assessing her current opinion that there is no basis to change her 2002 findings regarding the cause and manner of Nikki's death.

1. Overstating the evidence of relevant blunt force injuries

295. Dr. Urban concluded that Nikki's death was caused by "blunt force injuries," yet Dr. Auer, a specialist in head trauma, found *no* evidence of blunt force injuries to the head other than the "goose egg" on the back right side of Nikki's head, observed in the CT scans. 8EHRR135; 8EHRR137. The Court finds and concludes that this absence of credible evidence of blunt force injuries is likely why the State pursued the SBS theory at trial, largely through child abuse expert Dr. Squires. At

trial Dr. Urban also defined "shaking" as one way blunt force injury could be inflicted, in addition to "blows" to the head. But as Dr. Auer opined: "it's an overreach to diagnose trauma. It's actually more than an overreach. There's no real basis for a fatal head injury here, clinically [or] pathologically. The only thing, there's a goose egg," which Dr. Auer believed was caused by "an accidental roll out of bed." 8EHRR138. That impact likely caused the small subdural hematoma visible in the CT scan, but Dr. Urban did not gather the information and reconstruct the events leading up to the time of the autopsy that explain the considerable subdural blood that Dr. Urban incorrectly characterized as evidence of "multiple impacts."

296. In her autopsy report, her trial testimony, and her testimony in this habeas proceeding, Dr. Urban claimed that she saw evidence of a "blow" to Nikki's mouth in the form of a torn frenulum. Yet as Dr. Auer and other experts attested, a torn frenulum is common when a child is intubated. 8EHRR113; 6EHRR123-125. Also, the staining technique used on that wound indicated that it was "very recent," "not a few days old"—therefore, it had to have occurred during the hospitalization soon before the autopsy. 8EHRR114. Moreover, as Dr. Auer explained, the torn frenulum would not be evidence of fatal head trauma. Dr. Auer noted that Dr. Urban's explanation of why the torn frenulum was relevant "doesn't make sense" as there was "ample other cause for" the minor injury to Nikki's lip and frenulum.

8EHRR123; 8EHRR125. Moreover, there was no evidence that anyone observed a torn frenulum before she was intubated.

297. Dr. Ophoven opined that a medical examiner has to be careful in interpreting facial injuries and mouth abnormalities that can occur during the process of resuscitation. Dr. Ophoven emphasized that there are a number of possible injuries that can occur during the violent process associated with a Code Blue situation, which was initiated when Nikki arrived at Palestine Regional: there would have been individuals responsible for putting the endotracheal tube in by adjusting Nikki's head and mouth, pulling her jaw up and away from the mouth, lifting her tongue with a blade, and pushing a tube down through the vocal cords into the trachea. 4EHRR184. Moreover, this process had to been done twice because an x-ray revealed that the breathing tube was initially placed incorrectly. Dr. Urban does not appear to have taken this process into account and instead presumed that Nikki's torn frenulum was evidence that a "blow" had occurred.[39]

298. Dr. Urban listed retinal hemorrhage among what she characterized as "blunt force injuries," but as Dr. Auer explained, bleeding in the eyes and optic nerve is caused by intracranial pressure, which Nikki undoubtedly experienced, not blunt

[39] The Court further notes that, at trial, the State adduced testimony from one of the ER nurses (Andrea Sims) who asserted that the torn frenulum was evidence of a sexual assault; that highly prejudicial contention is addressed below. In any event, the Court finds that the torn frenulum is not relevant to understanding Nikki's internal head injuries by the time of the autopsy. Dr. Urban's characterization of the torn frenulum as a "blunt force injury" relevant to cause of death was misleading.

force. 8EHRR116. Also, as Dr. Auer instructed, "there's no way of getting a blunt force to the optic nerve. It's packed in fat and bone. It's in a bony canal, and the back of the eye is unreachable for trauma as well." These hemorrhages were "flow-related," not the result of an external "blunt force." 8EHRR121.

299. In her autopsy report and in her 2016 affidavit, Dr. Urban referenced a "contusion and an abrasion on the face." APPX100. But what is apparent in the autopsy photographs are marks likely caused by medical personnel masking, intubating, and moving the child when she was in the hospital. 8EHRR125. More specifically, Dr. Auer noted that "the face has marks on it which must occur when a child with DIC is held either for surgery as when the intracranial pressure monitor was placed [into her skull] or for intubation or for any procedure or just being moved in bed. The child was brain dead, so had to be handled and moved. So the face and the extremities have to show some markings." 8EHRR125. There are no abrasions or signs associated with a face that has been punched or otherwise struck with the force required to cause an internal injury. 8EHRR132. Dr. Auer noted that the autopsy photographs do not depict any face abrasions. 8EHRR134; *see also* EHRR139. Although photographs taken at Palestine Regional capture some light bruising on the face, those could be attributable to her short fall induced by her hypoxia. They are not, according to head trauma and brain expert Dr. Auer, indicative of a fatal injury from trauma. 8EHRR151-152.

300. Dr. Ophoven specifically rebutted Dr. Urban's claim that her autopsy photographs showed "multiple impact sites" sustained pre-hospitalization. Nikki's condition was instead caused in part by what happened while she was being treated, as Dr. Ophoven explained using the autopsy photographs:

> you can see discoloration of the skin of her scalp that reflects the blood that has moved there from her ongoing bleeding. This isn't a bruise. This is discoloration from the bleeding that's underneath there. There's no impact sites. . . . There are three -- four incisions in her skin there, all of which are going to produce bleeding, and one of them -- the one that -- where the tube [from the pressure monitor] is going into the skin is actually where the tube enters the skull.
>
> So they had to drill into the bone of the skull, which is going to keep bleeding, and the skin is going to keep bleeding from her problems with clotting. So seeing blood all underneath the scalp skin there, that was done by the doctors. That's not injury.

3EHRR73-74.

2. Equating blunt force with "blows," *i.e.*, intentionally inflicted injury

301. Dr. Urban erred in treating "blunt force" as synonymous with inflicted blows. As Dr. Ophoven explained, "blunt force head trauma" is simply "the constellation of changes to tissue that results from *some* form of impact typically, and with head trauma[,] impact can occur from a moving head against a surface, a moving head against an object, or a moving object against a head." 3EHRR42-43 (emphasis added). Dr. Ophoven addressed the example of someone, unobserved, falling on the stairs, hitting the back of their head, and being rendered unconscious;

Dr. Ophoven opined that a forensic pathologist (or other medical doctor) would have no way to look at the resulting injury during an autopsy and determine whether the injury had been caused by slipping, someone intentionally pushing the person, or hitting the person with a blunt object. 3EHRR57. The State's retained expert in this proceeding reluctantly concurred. 10EHRR169.

3. Misrepresenting the source and significance of the blood observed under the scalp

302. Dr. Auer testified that the diffuse bleeding that Dr. Urban observed inside Nikki's head and captured in the autopsy photographs is seen in people with coagulopathy, which Nikki had, a condition exacerbated by the drugs she was given in the hospital to promote circulation. The diffuse bleeding is not a sign of impact sites, as Dr. Urban repeatedly claimed. 8EHRR118.

303. Dr. Urban gave the jury the false impression that the blood in her autopsy photographs some how represented injuries Nikki had sustained when she was brought to the hospital. But as Dr. Ophoven explained, "to suggest to the jury that the inside of her scalp looked like that" because of what had "happened to Nikki at the house is absolutely incorrect and doesn't represent in any way the nature of the injuries that she may or may not have received," and thus are "incredibly misleading." 3EHRR69-70; *see also* 3EHRR77-78.

304. In this proceeding, Dr. Urban repeatedly attested that the presence of blood/hemorrhage in the subdural space was the evidence of "multiple impact" sites.

9EHRR38; 9EHRR41; 9EHRR43-40; 9EHRR50; 9EHRR52-54; 9EHRR70-71. Yet as Dr. Ophoven explained, once blood vessels in the dura around the brain begin to leak, the blood will accumulate there. 3EHRR66. Therefore, one cannot conclude that the location of the blood indicates where trauma occurred. 3EHRR66. The correlation has to be with what is observed *outside* of the scalp. *Id.* The bleeding observed at autopsy is consistent with (1) a single impact; (2) a documented clotting problem (not disclosed to the jury); (3) the anticoagulants Nikki was given in the hospital during triage when she was already having trouble clotting (not disclosed to the jury); (4) the pressure monitor screwed into her scalp (not explained to the jury); and (5) the extremely high intracranial pressure she was experiencing that led to herniation (not explained to the jury). 3EHRR66-67. None of this amounts to evidence of "multiple impacts" or "blows." 3EHRR68.

305. Dr. Wigren demonstrated that the incision Dr. Urban had made on the top of Nikki's head during the autopsy to allow Dr. Urban to pull Nikki's scalp back had caused dark subgaleal blood at the incision site to be moved during the autopsy; thus, that darker blood could not be construed as evidence of "multiple areas of subgaleal hemorrhage" as Dr. Urban suggested since her own actions had created the movement of the blood. 5EHRR212-213.

306. Dr. Ophoven further explained that the blood that had pooled under Nikki's scalp was "consistent with gravity and having her [lie] on her back in the

intensive care unit"; "there is no way to look at where the blood is … and say these are impact points[.]" 3EHRR76-77. Dr. Urban's autopsy photographs, as Dr. Ophoven noted, were taken "many hours after a complex medical treatment," and did not reflect the minimal trauma, consistent with a short fall, that likely started the bleeding in the first place. 3EHRR77.

307. The Court further notes that the state implied that Dr. Urban's work had been vetted because of the presence of multiple other signatures on her report. Yet no evidence was adduced as to what, if anything, these other members of her office did, if anything, to verify or double-check he work. 9EHRR165.

308. The Court finds and concludes that in light of the errors surveyed above, Dr. Urban's conclusions that Nikki's death was caused by blunt force injuries and that her death should be considered a homicide should be rejected.

FINDINGS OF FACT REGARDING THE UNRELIABILITY OF THE STATE'S WITNESSES

309. The new evidence adduced in this habeas proceeding supports the following findings regarding the reliability of the State's witnesses who provided support for the State's trial theory as to how Nikki Curtis died and thus for the finding that Mr. Roberson was guilty of intentionally inflicting her injuries.

I. TRIAL WITNESSES WHO OFFERED MEDICAL/SCIENTIFIC OPINIONS TO SUPPORT THE STATE'S GUILT-PHASE THEORY

A. Nurse Kelly Gurganus

310. The Court finds and concludes that Nurse Kelly Gurganus's opinions regarding what did and did not cause Nikki's injuries are not reliable. Nurse Gurganus was working at the Palestine Regional ER when Nikki was brought in by Mr. Roberson on January 31, 2002. At the time of her brief interaction with Mr. Roberson, Ms. Gurganus had only been a nurse for a few years. 41RR64. On January 31, 2002, and when she testified at trial a year later, she did not know anything about Nikki's medical history except that Nikki had been seen in the ER a few days earlier; Ms. Gurganus, incorrectly, characterized the complaint at that time as a mere "ear infection." 41RR77-78.

311. Nurse Gurganus had no special training in forensic pathology, neuropathology, or biomechanics. Yet she told the jury that "no one falls off the bed that far with that type of injury that it appeared at that time to be, to me." 41RR69.

312. Nurse Gurganus based her conclusions on presumptions about Mr. Roberson's affect, including the fact that she did not see him crying or otherwise displaying what she considered to be appropriate emotions. 41RR71.

313. In the habeas proceeding, Nurse Gurganus candidly acknowledged that she had been bothered by what she perceived as a "nonchalant tone" and she was alarmed seeing a child in Nikki's terminal condition. 2EHRR51-54, 60, 77. Nurse Gurganus also acknowledged that she had no prior experience with Mr. Roberson and so did not have any knowledge of how he ordinarily came across; yet she assessed his credibility based solely on his demeanor, which struck her as "suspicious acting." 2EHRR61-62; 2EHRR70. Nurse Gurganus also acknowledged in this habeas proceeding that she did not look up Nikki's medical history or have access to her pediatric records or have time to do that kind of research; but she agreed that having as much history as possible would be best. 2EHRR58-59, 67.

314. Nurse Gurganus did not know anything about Nikki's history of breathing apnea that had previously resulted in her losing consciousness and turning blue. 2EHRR66.

315. Nurse Gurganus did not see Nikki's CT head scans or know about her recent high fever. *Id*. She made assumptions that Nikki had been abused based on her "subjective" perception of the "mushiness" at the back of Nikki's head, Nikki's eyes being fixed and dilated, and the bruising at the back of the head; but Nurse

Gurganus recognized that all she could really conclude from that data was that Nikki's brain was injured. 2EHRR82.

316. For all of these reasons, the Court concludes that Nurse Gurganus was a credible witness who ultimately acknowledged the limitations of the information available to her on January 31, 2002 and when she testified at trial in February 2003. Based on the totality of evidence now available, the opinions Nurse Gurganus put before the jury regarding Mr. Roberson's culpability were not reliable as they were not based on sufficient, relevant, or scientific information.

B. Robin Odem

317. The Court finds and concludes that Nurse Robin Odem's opinions regarding what did and did not cause Nikki's injuries are not reliable. Nurse Odem did not see Nikki or have any knowledge of her medical history. 41RR89. Nurse Odem testified before the jury solely about her perception of Mr. Roberson's demeanor and her view that his explanation about a fall from a bed did not make sense to her: "I guess if my child fell off the bed, which they have many times, I just don't feel like that if they fell off the bed and got hurt that I was going to say, 'If something like that happened to them I'll never forgive myself'" as Mr. Roberson had reputedly said. Nurse Odem interpreted this statement as making her feel that Nikki's condition was "less of an accident." 41RR98; *see also* 41RR86, 41RR92.

318. Nurse Odem's opinions about Mr. Roberson that were put before the jury were not reliable as they were not based on sufficient, relevant, or scientific information.

C. Andrea Sims

319. The Court finds and concludes that Nurse Andrea Sims offered wide-ranging opinions at trial regarding what did and did not cause Nikki's injuries that far exceeded any expertise she may have possessed. When Nikki was brought to the Palestine Regional ER, Nurse Sims was working in the ER, but she was not a certified "SANE," as she initially purported to be. 41RR144. While Nikki was in the midst of a Code Blue situation, Nurse Sims performed a sexual assault exam and claimed to have observed "anal tears" that she interpreted as a sign of sexual abuse. At trial, she testified not only about the results of her "SANE" exam, but also about her view that Nikki's condition was the result of intentionally inflicted injuries. Yet Nurse Sims had only been a registered RN for about 4 years on January 31, 2002 and the record does not include any suggestion that she had special training in forensic pathology, neuropathology, or biomechanics. 41RR101.

320. Nurse Sims testified at trial that she was in agreement about calling police because, upon seeing Nikki in the trauma room, "this looked like an intentional injury." 41RR115. Her initial basis for that assessment was "the bruising across the chin and she also had swelling to the back of her head. You know, it was

kind of a mushy feeling." *Id.* Nurse Sims claimed that bruises she observed on Nikki's face and ears indicated to her that "somebody [had] intentionally injured this child." 41RR117. She also purported to be able to tell by looking at a bruise that it "was caused by [an] intentional injury." 41RR134-135. She testified that she saw a bruise that looked like a handprint on the side of Nikki's face, which she asserted must be "an intentional injury." 41RR118.

321. It is unclear from Nurse Sims' testimony whether she considered or even knew about Mr. Roberson's statement to police, in which he described shaking Nikki's head and slapping her face ***after*** finding her unconscious to try to get her to wake up:

> This morning when she wouldn't wake up, I crawled up on the bed and grabbed her face and shook it to wake her up. Then when she didn't wake up I slapped her face a couple of times. I picked her up—picked up her hand and it flopped back on the bed, down on the bed. That is when I started getting scared.

APPX7. In any event, no "handprint" shaped bruise on Nikki's face is captured in any photograph taken in the ER.

322. Nurse Sims also testified at trial that: "Head injuries to this extent are usually from a massive car wreck or, you know, an injury like that. You know, something that you have a massive impact." 41RR123. She further testified that she had "never seen any" kid with a fall from a bed that "had a massive head injury."

41RR123. Nurse Sims purported to be able to tell by looking at a bruise that it "was caused by the intentional injury." 41RR134-35.

323. Nurse Sims testified at length about her sexual abuse conclusion. She described the evidence she relied on as follows: "she [Nikki] had some fresh tears to her anal area, her anus – between at six o'clock to eight o'clock if you're looking at a clock and that's the way, you know, we chart this. If you remember going from six o'clock to eight o'clock, she had three tears in that area and the tears are caused from over stretching." 41RR127. In Nurse Sims' opinion, the fact that Nikki had had "diarrhea for about two weeks,"[40] would not explain "the tearing. . . . It may cause some irritation, but it would be generalized irritation. It would not be in one specific area." 41RR127. In her view, "the only reasons that I have found" for a "tear in that area" is sexual assault. 41RR128.

324. Based on the entire evidentiary record, the Court finds multiple bases for concluding that Nurse Sims' opinions were not reliable. Nurse Sims told the jury that the "only" reason she had found for the kind of "anal tears" observed in Nikki were caused by a sexual assault. 41RR128. She later testified that, according to a manual called *Child Maltreatment*, the only things that could cause the anal tears she purportedly observed are "a hard, large stool or sexual assault." 41RR146. Other

[40] Nurse Sims claimed she saw "no indication" that Nikki had had diarrhea "immediately prior to" Sims' examination. 41RR132. Yet the medical records indicate that Nikki had had diarrhea for a week right before Sims' examination. APPX9; APPX14.

State's experts either did not see anal tears at all (Urban) or saw something only "tiny" and characterized as something "every mother" had likely seen (Squires).

325. Nurse Sims testified about her observations of anal dilation of a comatose child, suggesting that a "normal" dilation "would be a minimal of 30 seconds to a maximum of a minute" "or even more" in "children that have no repeated anal penetration[.]" 41RR130. There was no apparent scientific support for Nurse Sims' opinion. Moreover, her view that the child's dilation should have been "normal" when Nikki was, and had been, comatose was misleading. *See* APPX1.

326. Nurse Sims also opined about Nikki having a torn frenulum, and Sims interpreted that as another sign that Nikki had been sexually abused. 41RR127. Yet Nurse Sims could not have seen Nikki's frenulum because, as Sims admitted, she "never got to see Nikki without" the breathing tube "in her mouth." 41RR136. Some time later, Nurse Sims learned that a torn frenulum was observed at autopsy; then, contrary to common sense, she testified that intubation "shouldn't" have caused the frenulum to tear. Yet other evidence established that the breathing tube had to be pulled out and reinserted because it had initially been inserted wrong, a fact that Nurse Sims "did not recall." 41RR113; 41RR136-137; 41RR147. *See by contrast* 42RR87-88 (testimony of ER doctor, Dr. Konjoyan, that the breathing tube was initially inserted incorrectly and had to be pulled out and reinserted after Nikki's chest was x-rayed and they noticed the tube was in the right main stem of her lung

sack). It was unreasonable for Nurse Sims, who never saw Nikki's frenulum, who was wrong about whether intubation can tear a frenulum, and who did not know that Nikki had had to be reintubated, to opine that a torn frenulum is "a sign of sexual assault." 41RR138.

327. Nurse Sims, like other nurse witnesses, testified about her perception of Mr. Roberson's affect, suggesting that a basis for her opinions was: "He didn't appear as upset as other parents that I've seen with injured children." 41RR121. She purported to generalize that other parents would act "extremely upset" and "they're standing right outside the room, and, you know, they need to be comforted[,]" whereas Mr. Roberson "was sitting in a chair" and only started "crying after the police arrived." 41RR121-122. Her lay opinions critical of Mr. Roberson's emotional displays were made without any indication that she knew him, his family history, or his mental health history.

328. In the habeas proceeding, a qualified and experienced SANE, Kim Basinger, testified about Nurse Sims' deviation from the standard of care in reaching the conclusions that she put before the jury. 6EHRR60-141. The Court's findings related to Nurse Basinger's credible testimony are found below and are incorporated here by reference.

329. Additionally, the Court finds it significant that the State's own "child abuse" expert at trial, Dr. Janet Squires, did not offer support for Nurse Sim's highly

prejudicial sexual assault allegations. At the time of trial, Dr. Squires was "the main doctor" at Children's Medical Center in Dallas who "examines children for evidence of child sexual abuse." 42RR118. Dr. Squires explained that she had been told that a "concern about a possibility of sexual abuse" had been raised, which is why she examined the anal area carefully and took some "special collections." 42RR96-97. But she found no "major trauma" and "did not feel there were any findings." *Id.* Dr. Squires testified that she saw "a tiny little laceration" and explained "I bet every mother knows what I am talking about. . . . very tiny and superficial and probably not considered to be significant." 42RR100. Dr. Squires also implicitly contradicted Nurse Sims' testimony about "anal laxity," testifying that it means "very little in a totally comatose child." 42RR99. Dr. Squires explained that "[a]ny child under anesthesia, any child that's brain dead, that area you cannot really assess the tone at that point, so it wouldn't mean very much." *Id.* In Dr. Squires' view, "when a child is comatose, totally unconscious" as Nikki was when Nurse Sims examined her, "it is common that the anal muscle is very lax, so you can't interpret it." 42RR118.

330. For all of these reasons, and based on the totality of evidence now available, the Court concludes that Nurse Sims' opinions about the causes of any of Nikki's injuries were not reliable as they were not based on sufficient, relevant, or scientific information.

D. Jonathan Ross, M.D.

331. The Court finds and concludes that Dr. Ross offered trial testimony beyond his expertise and personal knowledge. More critically, his testimony, in light of the totality of evidence adduced at trial and in this habeas proceeding, suggests reasons other than lack of appropriate knowledge to discount his opinions about Nikki's condition. For instance, he had a personal interest in deflecting attention away from the infection that he had observed but unsuccessfully addressed two days before her death and had instead sent Nikki home with a 104.5 degree temperature and prescriptions that were highly dangerous, especially in light of the respiratory infection he had identified.

332. Dr. Ross was a pediatrician who saw Nikki a few times before her final hospitalization. He was not her primary physician. He was, by coincidence, at the hospital on January 31, 2002 when Nikki was brought in; and he saw her that day — but only after she was already intubated, and he did not provide treatment. 42RR13-14. Critically, Dr. Ross had seen Nikki in his office fewer than two days *before*, on January 29, 2002. That was the day after she had been taken to the ER by Mr. Roberson and his mother. APPX9; APPX14.

333. On January 29, 2002, Nikki's temperature was measured as 104.5 degrees in Dr. Ross's office, yet he sent her home. Dr. Ross admitted at trial that he was distraught when he saw Nikki in the hospital on January 31st because he "wasn't sure if the illness [he had seen her for] was a part of what was going on or whether

it was not." He then agreed with the prosecutor that he "subsequently ruled out the illness being any sort of cause to what her condition was" at that time. 42RR14. The trial record does not include any information as to what, if anything, Dr. Ross may have relied on to "rule out" her recent, ongoing illness as playing a role in Nikki's death. Evidence adduced in this habeas proceeding suggests that the decisions to disregard Nikki's medical history—including her illness during the days leading up to her collapse—was likely due to the belief at that time that her brain damage was best explained by shaking baby or shaken impact syndrome, as the State's experts attested at trial. Dr. Ross plainly did not have the expertise or access to review the microscopic slides of Nikki's lungs, as did Dr. Auer.

334. Dr. Ross was asked to testify about Nikki's medical history only because her primary care pediatrician, Dr. Karen Ostrom, had been in a serious car accident and did not testify. Thus, he relied largely on records he did not create, not his personal knowledge. 42RR3. Despite evidence that Nikki had been ill a great deal in her short life and had been to his pediatric practice, by his count, 28 times in 2 years, Dr. Ross characterized Nikki's history as "normal" for a "healthy" two-year-old, which is unreasonable. 42RR23. Dr. Ross repeatedly minimized Nikki's chronic health problems before the jury:

- He said that Nikki's first infection at 8-days-old was "a little bit unusual, but I've seen it before and she was treated at that time." 42RR6.

- When asked if there was "anything that's out of the ordinary for kids these days with having tubes put in their ears," he testified: it's "actually pretty common." 42RR7.

- Although Nikki continued to have antibiotic-resistant ear infections even after having tubes surgically implanted in her ears, Dr. Ross dismissed those as "a few additional infections" and "a granuloma, a little inflammatory tissue on the ear drum." 42RR7.

- Dr. Ross described the breathing apnea episodes during which Nikki was found "lying on her face on the floor" at 9 months old and "appeared blue and she appeared not to be breathing" as "typical breath holding spells" not a "real threat." 42RR7-9.

- Contrary to her medical records, Dr. Ross characterized Nikki's health at age 15 months as "fine except for her ears." 42RR10.

- Dr. Ross claimed that her "work-up was essentially normal" when she came to his office on January 29, 2002 the day after she had been taken to the emergency room with a high fever—even though her temperature was even higher, measured at 104.5 degrees, during the office visit with Dr. Ross the next day. 42RR10-11.

335. The reliability of Dr. Ross's opinions is also undermined by the fact that he testified at trial that Nikki was given "Omnicef" (for bacteria infections) and "some cough syrup," then laughed suggesting "[s]ometimes we're treating ourselves." 42RR11. Dr. Ross did not explain to the jury that the "cough syrup" he had prescribed was Phenergan with codeine, a narcotic. Nor did he, nor any other medical professional, explain to the jury how the medications that Dr. Konjoyan had prescribed on January 28th and those that Dr. Ross prescribed on January 29th might

have affected Nikki on January 31st. Both doctors gave her prescriptions for Phenergan in both suppository and oral form; and Dr. Ross admitted that "generally they're not giving them both together." 42RR38. But that was the extent of the information put before the jury on this issue. Evidence adduced in the habeas proceeding showed that Phenergan, the brand name for promethazine, suppresses the central nervous system, is no longer approved for children two years or under, and Nikki had a lethal quantity of promethazine still in her system at the time of the autopsy on February 2, 2002. 5EHRR201-209; 5EHRR227-228; APPX95; APPX99.

336. At trial, Dr. Ross testified that his notes from January 31, 2002, when Nikki was brought to the hospital, included incorrect information. But he downplayed the significance of the errors, which he seemed to recognize for the first time while on the stand: "I realize there's a few things that are—I would have corrected." He described these errors as "minor things." 42RR13. He had written that Nikki was seen in his office "four days ago," but it should have been "a day and a half ago" (and in endeavoring to correct his mistake before the jury, he mistakenly said "three days ago.") 42RR13. He had written that Nikki was "free of illness" when "that should have been 'viral illness.'" *Id.* He testified that he had written that Nikki was "'found on bed', but that should have been 'off the bed.'" 42RR17. The Court finds that these errors that Dr. Ross made in notes prepared for subsequent medical providers to rely on is troubling. More concerning, however, was the tendency to

downplay Nikki's significant medical history, which was far from a "normal" or "healthy" two-year-old, as he suggested.

337. Collectively, these problems cast serious doubt on the conclusions that Dr. Ross offered at trial. His unreliable conclusions include:

- his view that Mr. Roberson's report of a fall from a bed was "inconsistent" with "what [Dr. Ross] was seeing," 42RR17;

- his view that there was no connection between Nikki's medical history, including her recent, ongoing illness, and her death, 42RR14; and

- his view that Nikki's injuries "were intentionally inflicted." 42RR21.

338. Based on the totality of evidence now available, the Court concludes that Dr. Ross's opinions were not reliable as they were not based on sufficient, relevant, or scientific information.

E. Dr. Thomas Konjoyan

339. The Court finds and concludes that Dr. Konjoyan's opinions regarding what did and did not cause Nikki's injuries are not reliable. Moreover, the evidence suggests that Dr. Konjoyan had a personal interest in deflecting attention away from the infection that he had observed but unsuccessfully addressed fewer than three days before Nikki's death. Dr. Konjoyan was an ER doctor with Palestine Regional who saw Nikki in the ER during her last illness on January 28, 2002 and then the morning of January 31, 2002. 42RR79.

340. Dr. Konjoyan told the jury he was "surprised" when he saw Nikki in the ER unconscious on January 31, 2002 because "she looked so good two days previously." 42RR83. But "two days previously" Nikki had had a high fever of 103.1 degrees and had already been sick for a week; and Dr. Konjoyan had, at that time, thought she was ill enough that he prescribed potent medications before releasing her. APPX14. Moreover, Nurse Gurganus admitted that his initial response to seeing Nikki unconscious on January 31st was concern that he may have "missed something" when he had previously seen her; therefore, according to Nurse Gurganus, in the middle of the Code Blue situation, Dr. Konjoyan had asked Nurse Gurganus to go look up what Nikki had been seen for. 2EHRR55-58. At trial, however, Dr. Konjoyan did not acknowledge the possibility that he may have "missed something."

341. Dr. Konjoyan testified that the CT scan he had ordered of Nikki's head revealed "impending uncal herniation" which he described as "basically irreversible swelling in the brain." 42RR84. He then went on to testify that this injury "did not match the history" that she had "possibly fallen out of bed." 42RR84. He was then more adamant: "In my opinion the injury did not result from a fall out of bed. That would be basically impossible." 42RR85. By the time Dr. Konjoyan testified at trial he plainly was not aware of the developments in biomechanics that have come to

demonstrate that short falls can cause serious and even fatal injuries in children Nikki's age and size. *See* APPX3; APPX4; APPX2.

342. For all of these reasons, and based on the totality of evidence now available, the Court concludes that Dr. Konjoyan's opinions were not reliable as they were not based on sufficient, relevant, or scientific information.

F. Dr. Janet Squires

343. The Court finds and concludes that Dr. Squires' opinions regarding what did and did not cause Nikki's injuries are not reliable. Dr. Squires was a Dallas pediatrician and the "REACH" consultant who examined Nikki on February 1, 2002 after Nikki had been transported to Children's Medical Center and been through two days of extensive triage. APPX5; APPX11. Dr. Squires was presented to the jury as a "child abuse" expert. 42RR118. Dr. Squires opined at length about her opinion that Nikki's death was caused by "shaken baby" or "shaken impact syndrome." 42RR102-110.

344. At trial, Dr. Squires explained that she relied on the "[v]ery abnormal CT" scan of Nikki's head. 42RR102. The CT scan was not shown to the jury, but Dr. Squires testified that she saw in the scan a triad of symptoms that supported her hypothesis: "fresh blood" in the subdural space of Nikki's head, brain swelling, and retinal hemorrhages. 42RR102-104. Dr. Squires also noted the absence of any head fractures. 42RR102; 42RR105. The CT scan showed, per Dr. Squires, a single

impact sight "on the right side" of the back of Nikki's head. 42RR103. Dr. Squires initially agreed with the prosecutor that the impact site indicted "a blow." 42RR103. Then she later attested, referring to the CT scan, that there was a "possibility that the impact happened at a different time" from the shaking she envisioned because "the actual brain injury, we do not feel is explained by a simple impact." 42RR107.

345. Dr. Squires viewed Nikki's condition as proof of "shaken baby syndrome," *i.e.*, that the condition of her brain revealed in the CT scan had been caused by violent shaking. 42RR106. As explained above, Dr. Squires' trial opinions reflected a generally accepted view at the time that SBS explained the kind of internal subdural bleeding, brain swelling, and retinal hemorrhages seen in Nikki when the CT scan was taken. At trial, in accord with a view then prevalent among medical doctors, Dr. Squires opined as to why she thought shaking was the mechanism that had caused Nikki's condition and why she believed that the shaking would have produced an obvious, instant change in Nikki's level of consciousness, thus allowing an inference that Mr. Roberson had been the one to cause Nikki's condition by shaking her. 42RR104-126. When asked by the prosecutor to characterize the degree of force required to cause Nikki's condition, Dr. Squires testified: "You really have to shake them really hard back and forth and then you typically slam them against something. It's an out of control, angry, violent adult." 42RR126. For Dr. Squires, "**there's no signs of trauma at all and yet as that head**

is moving and then suddenly stops, **these shear forces go through it and cause tremendous damage to the brain**, deep in the brain." 42RR107 (emphasis added).

346. Other evidence established that, when Dr. Squires was asked to examine Nikki and the CT scans of Nikki's head on February 1, 2002, a determination had already been made that Nikki's condition had been caused by "inflicted head trauma." APPX11 at Bates 107.

347. Dr. Squires testified that the scope of what she "looked at" before making a decision about the cause of Nikki's condition were: "her medical records and some x-rays" and "talked to the grandparents." 42RR95-96. The medical records that Dr. Squires reviewed did not include Nikki's pediatric records, however. She only considered the records generated by Palestine Regional and Children's Medical Center from January 31-February 1, 2002 after Nikki had collapsed. The grandparents to whom Dr. Squires spoke were Verna and Larry Bowman who, according to Dr. Squires' affidavit, had informed her that Nikki was "totally well" before she was brought into the ER on January 31, 2002 by her father.[41] APPX103.

[41] Nikki's medical records show that she was anything but "well" at the time of her collapse. During this proceeding, Larry Bowman denied that Nikki had been sick around the time of her death, denied that Nikki had been on any medications, and claimed to have no memory of Nikki having anything other than "regular visits" to the doctor. 6EHRR184-185; 6EHRR160. Yet he also admitted, eventually, that he had told law enforcement during the initial investigation that Nikki had had a fever for a few days and been sick for about a week. 6EHRR170; 6EHRR173. Also, Verna Bowman testified that she was the one who primarily took Nikki to doctors' appointments and for emergency care. 6EHRR189-190. The Court finds that Larry Bowman was not credible regarding Nikki's medical history and the records speak for themselves.

348. The Court finds and concludes that Dr. Squires' opinions regarding the cause of Nikki's condition are unreliable, first and foremost, because of significant changes in scientific understanding outlined above. The findings regarding those changes are incorporated here by reference.

349. The Court further finds that Dr. Squires' opinions are unreliable for three additional reasons.

350. First, Dr. Squires' assessment regarding causation was made in a context where it had already been predetermined, absent a complete record, that Nikki had been a victim of abuse, including sexual abuse.[42] Dr. Squires, the child abuse pediatrician, conveyed to law enforcement, CPS, and the crime lab her view that shaken baby syndrome was the cause of Nikki's injuries, thus making them inflicted injuries in advance of the autopsy. 6EHRR45.

351. Second, Dr. Squires' assessment was made without considering Nikki's medical history. Contrary to the report Dr. Squires had been given by the Bowmans, Nikki was far from "totally well" during the days before she was brought to the ER on January 31, 2002. For instance, her temperature had been measured at 103.1 on January 28th and 104.5 degrees on January 29th; she had had extensive diarrhea, vomiting, and a cough; she had been given aggressive medications including

[42] Even though Dr. Squires did not find evidence to support Nurse Sims' sexual abuse hypothesis, the fact that Dr. Squires was told that sexual abuse was suspected before she undertook her exam could have induced a cognitive bias, predisposing her to find abuse. *See, e.g.,* APPX2.

Phenergan, a drug that affects the central nervous system and now has a black-box warning against prescribing it to children Nikki's age; Imodium, a drug that can be life-threatening if the child has a serious gastrointestinal infection; and cough syrup with codeine, a narcotic. 3EHRR101-102; 4EHRR119-120. Nikki also had a history of many infections, including viral infections, and a condition that had caused her to stop breathing and turn blue on several occasions—all of which raises questions that should have been considered in assessing Nikki's collapse on January 31, 2002. 3EHRR103-105.

352. Third, Dr. Squires reached her conclusions regarding the cause of Nikki's condition before the autopsy was performed. APPX103. Although there were many problems with the autopsy, it revealed abnormalities in Nikki's lungs at the time of her death suggesting a long-term infection that was only explained by experts in the habeas proceeding revisiting the microscopic slides and identifying the presence of interstitial viral pneumonia. 4EHRR133.

353. The Court also takes judicial notice of the fact that Dr. Squires, who testified for the State about SBS in 2000 in another case (Andrew Roark, Cause No. W99-02290-L(C) in the Criminal District Court No. 5, Dallas County, Texas), has since recanted some of her trial testimony in that case. That recantation required acknowledging that the scientific understanding she relied on in both Mr. Roark's and Mr. Roberson's trials has changed. Publicly available documents indicate that

the changes in scientific understanding at issue in *Roark* that led a habeas court to recommend granting relief were attested to by Dr. John Plunkett. Dr. Plunkett also provided a detailed declaration in this case. APPX3. The Court finds and concludes that the expert opinions provided by Dr. Plunkett, describing significant changes in the scientific understanding regarding shaking versus short falls as a mechanism of child brain injury, since the time of Mr. Roberson's trial, are credible and relevant to assessing the reliability of Dr. Squires' trial testimony.

354. The Court further notes that the State elected not to call Dr. Squires as a witness in this proceeding and seemed to retreat from her trial testimony by relying solely on Dr. Urban's, and retained expert Dr. Down's, current position that Nikki was *not* injured by shaking (contrary to both Dr. Squires' and Dr. Urban's trial testimony). *See* Section III below ("The State's Habeas Witnesses Who Offered Medical/Scientific Opinions to Support the State's Guilt-Phase Trial Theory").

355. For all of these reasons, and based on the totality of evidence now available, the Court concludes that Dr. Squires' trial opinions about the cause of Nikki's condition, including the cause of the triad of symptoms Dr. Squires emphasized—subdural bleeding, brain edema/swelling, and retinal hemorrhages—are no longer reliable. Likewise, Dr. Squires' opinion that Nikki's condition was caused by violent shaking that would have immediately caused a change in Nikki's level of consciousness is no longer reliable. Dr. Squires' opinion that "shearing

forces," created by shaking, could cause the internal head injuries in a child and yet cause no injury to the child's neck is no longer reliable. In sum, the medical opinions she provided at trial are contrary to current, relevant, scientific understanding.

G. Dr. Jill Urban

356. The Court finds and concludes that Dr. Urban's trial opinions regarding what did and did not cause Nikki's condition are neither consistent nor reliable.[43] Dr. Urban was the medical examiner who performed the autopsy on Nikki Curtis on February 2, 2002 and then opined at trial about cause of death. 43RR54. When Dr. Urban performed the autopsy, she had only been certified as a medical examiner for a year and a half. 9EHRR8-9; EHRR117; 9EHRR 154.[44] Dr. Urban concluded that the cause of Nikki's death was "blunt force head injuries" resulting from "homicide." APPX12. Dr. Urban reached that conclusion, captured in her autopsy report, the same day that she performed the autopsy, before the results of testing she had requested were even available. APPX99. She also signed the death certificate that same day. APPX101.

[43] The Court discusses the opinions Dr. Urban offered in this habeas proceeding separately in Section III.A. below in "The State's Habeas Witnesses Who Offered Medical/Scientific Opinions to Support the State's Guilt-Phase Trial Theory."

[44] Dr. Ophoven, who has specialized in pediatric pathology for many decades, explained that it is very uncommon for medical examiners' offices to do autopsies on children of Nikki's age: "[P]ediatric cases represent less than 10 percent of the total population" and autopsies on 2-year-olds are even rarer. 3EHRR65. Dr. Urban, despite her limited experience at the time, claimed that autopsies on children Nikki's age were "common." 9EHRR156.

357. In advance of testifying before the jury, objections were raised to some of Dr. Urban's very graphic, very bloody photographs taken of the intracranial area during Nikki's autopsy: SX60-SX68. Dr. Urban told the Court that all of the photographs were necessary to show "a number of different blows that were inflicted on Nikki's head" and that the photographs showed the "different blows." Dr. Urban also agreed with the prosecutor that she needed all of those photographs "to show the different points of impact, the different place where trauma was inflicted and the way [Nikki] was hurt." 43RR57-58. Yet a far more experienced specialist in pediatric forensic pathology, Dr. Ophoven, explained that those "very bloody" photographs were "highly misleading" because they did not represent Nikki's original injuries. APPX2 at 16. Nikki had been put through a great deal of triage, had had a pressure monitor screwed into her skull, and had been in a comatose state for over two days before Dr. Urban took her photographs. The appearance and distribution of the intracranial blood and retinal hemorrhages observed at autopsy would have been affected by the increased intracranial pressure and coagulation abnormalities reflected in Nikki's medical records, by the chest compressions she had received, and by the hypoxia that had resulted in her appearing "blue" to hospital staff when she was first brought in on January 31st. *Id.*; 2EHRR52-53; APPX5; APPX11. Moreover, Dr. Urban was not able to explain how she saw "blows" to the head or inflicted trauma in the brain, as opposed to blood in the intracranial region

because the brain had become "nonperfused." Far more experienced pathologists (Drs. Bonnell, Ophoven, Wigren, and Auer) who looked at the autopsy photographs and the autopsy microscopic slides disagreed that Dr. Urban's records of the autopsy supported what she claimed to see. APPX1; APPX2; 3EHRR12-4EHRR82; 5EHRR152-251; 8EHRR5-140.

358. Dr. Urban's trial testimony about "multiple impacts over the entirety of the head," 43RR74; *see also* 43RR71-73*,* is even inconsistent with the State's other causation expert, Dr. Squires. Dr. Squires, unlike Dr. Urban, had actually viewed CT scans of Nikki's head, taken before the autopsy was performed; and Dr. Squires testified that the CT scans showed only "**a single impact site**" on the head. 42RR107 (emphasis added). Indeed, it was the *absence* of evidence of external or radiological evidence of multiple impact sites or any fractures that had led Dr. Squires to opine that the condition of Nikki's brain had been caused by shaking. *Id.* No other credible expert provided support for Dr. Urban's claim that there was evidence of "multiple impact sites." As Dr. Ophoven noted, the CT scan, as described by Dr. Squires, "indicates a focus of soft tissue swelling of the scalp confirming evidence of a recent impact to the skull"— a *single* impact. APPX2 at 16. The long-lost CT scans themselves confirm that a single impact site is where the intracranial/subdural bleeding started into the scalp tissue visible in the scan." *Id.*; *see also* APPX70; APPX93. That single impact site, which started the bleeding, "could have resulted

from a fall with impact to the back of the head"—and thus *corroborates*, rather than contradicts, Mr. Roberson's explanation of what happened to Nikki. *Id.* Moreover, the only radiologist to look at the CT scans taken when Nikki was admitted to Palestine Regional, and thus the only expert qualified to interpret the CT scans, interpreted the images as showing a single impact that, at the time of imaging, had produced only a small amount of subdural bleeding; the radiologist also noted that the timing of the impact could not be determined based on the imaging. APPX93. But Dr. Urban did not look at the CT scans (or most other medical records) before or after performing the autopsy. 9EHRR170.

359. In testifying before the jury, Dr. Urban equated the internal bleeding she had observed with evidence of external "blows." She did not explain how she could look at an injury, internal or external, and tell that it had been intentionally inflicted—as opposed to the result of an accidental fall or of the extensive medical treatment to which Nikki's body had been subjected for over two days, while in a coma, before the autopsy was performed. 43RR73-74. For instance, Dr. Urban testified that a lacerated frenulum, noted for the first time during the autopsy, was "consistent with a blow to the mouth." 43RR71. Dr. Urban did not recognize or consider that Nikki's breathing tube had been inserted, pulled out, and then reinserted while she was in the Palestine Regional ER after an x-ray revealed that it had been initially inserted wrong because she never reviewed the Palestine Regional

medical records. 42RR87; APPX5; 9EHRR64. She testified that she had never seen a frenulum torn from intubation. 43RR71. But other, more experienced, forensic pathologists testified that intubation is known to tear frenulums or otherwise damage the mouth. *See, e.g.*, APPX1; 8EHRR113.

360. When the lead prosecutor at trial had noted the "large discrepancy" between the evidence of injury visible "on the outside" of Nikki and what was visible only internally, Dr. Urban suggested that this was just "the way children are built" that you can inflict "blows" on their head and it will somehow not be visible from the outside:

> Q (from the State). . . . let's talk about-- There really is a large discrepancy, at least in my mind, between what you see on the outside and what you see on the inside. **You** [Dr. Urban] **described a lot of different impact sites, multiple blows to Nikki's head. And you really don't see that when you look at the pictures of her face.** Can you explain to us why that is?
>
> A (from Dr. Urban). Well, again, I think that's because just of the way children are built. You know, like I said, they've got a lot [sic] fat. There's a lot of fat between, say, the skin and actual bones of the skull and that can absorb a lot of energy that's inflicted on the skin. The same thing, the skin is also very elastic. It's almost more stretchable in little children and that's another reason why you can actually get a great deal of injury to the head and not see anything on the outside because all that force is transmitted inwards without actually disrupting the skin.

43RR89 (emphasis added). Similarly, Dr. Urban testified that the complete absence of skull fractures or other bone fractures was "not usual" "with this kind of subscapular injuries …. because of the way children are made. They are very

malleable." 43RR79-80. The Court finds and concludes that this view of child anatomy is contrary to the more credible opinions expressed by other experts relying on a contemporary scientific perspective based on a far fuller understanding of Nikki's condition in the days leading up to her collapse. *See* Section II ("New Evidence That Nikki's Death Was Not a Homicide") above, incorporated here by reference.

361. At trial, to support her view that Nikki's internal injuries had been inflicted, Dr. Urban also testified that **shaking** was a likely explanation of how the condition had been "inflicted" without leaving external evidence of trauma. *See, e.g.*, 43RR75-80. When Dr. Urban was asked by the trial prosecutor if she could separate how much of Nikki's death "was caused by **shaking**" and how much "was caused by the battering that she took" she said "No." 43RR86.

362. Dr. Urban claimed at trial that the reason Nikki's neck was not injured by the purported shaking was because the neck was "flexible" and "weak":

> the neck is actually fairly flexible and that's one of the reasons that blows to the head or **shaking** is so dangerous because the neck is not actually strong enough to support the head. And, you know, if you ever looked at a small child, their head is very large in proportion to the rest of their body. And so when the head is struck or, again, if the child is **shaken** it's this very large object sitting on a fairly weak neck. And, you know, the weakness in the neck protects the neck from getting hurt, but it really just doesn't protect the head from getting hurt.

43RR82. Dr. Urban's belief that "the weakness in the neck protects the neck" is contrary to evidence provided by an expert in biomechanics (Dr. Ken Monson),

backed up by empirical evidence, that shaking would *not* generate forces sufficient to cause internal head injuries but *would* cause injury, first and foremost, to the neck. The new science from the field of biomechanics is discussed at length in Section I "Changes in the Relevant Scientific Understanding" above and is incorporated here by reference.

363. Dr. Urban, like Dr. Squires, looking backward from the injuries found in Nikki, claimed that, the effect on Nikki's brain would have been immediately apparent the moment she was injured: "The injuries to this child's brain would have been immediate, so I would have expected that this child would have immediately suffered what we call a change in the level of consciousness." 43RR81. For Dr. Urban, there could have been no lucid interval between the time of injury, and she rejected that Nikki "would be walking around and talking" after getting injured. 43RR81. That testimony is contrary to the contemporary scientific understanding based on documented instances of children experiencing extended lucid periods after a short fall with head impact—for many hours or even days. 3EHRR107-109.

364. Dr. Urban's trial testimony did not include any discussion of the history of an accidental fall that had been provided.

365. Nor did Dr. Urban discuss any of Nikki's medical history—including her illness in the days leading up to her collapse.

366. Nor did Dr. Urban discuss the indications in her own autopsy report that Nikki had an active infection at the time of her collapse that had reached her lungs and suggested pneumonia. APPX12. The nature of that pneumonia was explained for the first time in this habeas proceeding by Dr. Roland Auer. 8EHRR46-61; APPX110; APPX110A. However, Dr. Urban's autopsy report includes findings that hint at Nikki's pneumonia (such as a reference to "macrophages" found in her lung tissue and a very abnormal lung weight), which Dr. Urban did not investigate. APPX12. Dr. Urban did not share this information with the jury or explore whether Nikki's infected lungs had anything to do with the viral illness Nikki had before her collapse that was not responding to antibiotics, although there was clear evidence in her medical records that she had both a current and chronic viral illness in the days leading up to and following her collapse. APPX9; APPX14. Before trial, Dr. Urban did not consider how infected lungs may have caused Nikki to stop breathing or how, once she stopped breathing, that would have affected the circulation of blood around a brain that had shut down.

367. The Court finds and concludes that Dr. Urban's trial testimony and the significant medical evidence that she did not consider suggest that she was laboring under a presumption that child abuse had occurred. *See also* 43RR83 (Dr. Urban testifying at trial that, although she did not see any significant injuries elsewhere on Nikki's body: "having seen many child abuse cases, it's not unusual that most of the

injuries are actually concentrated around the head itself."). Records made at the time of the autopsy show that Dr. Urban was informed in advance that there was already a presumption of "child abuse" and a local Palestine detective told her that Nikki "may have been sexually assaulted." 9EHRR156-157.

368. Dr. Urban's repeated use of terms such as "struck" and "blows" and "inflicted" at trial suggested an intentional act that she could not have known had occurred. *See*, *e.g.*, 43RR72. Instead of an objective scientific assessment of all relevant evidence, her focus was quite narrow and reflected a rush to judgment, possibly as a result of working closely with law enforcement before and during the autopsy. 3EHRR38-39. Additionally, much of the scientific perspective that Dr. Urban offered at trial does not withstand scrutiny in light of changes in scientific understanding, as explained at length in Section I ("Changes in Relevant Scientific Understanding") above. The Court's findings regarding the new science relevant to understanding what caused Nikki's death are incorporated here by reference.

369. Dr. Urban's opinions regarding shaking and multiple impact sites, and her disregard of the biomechanical understanding of the injury-potential of short falls are at odds with contemporary, evidence-based science. 4EHRR77-78. A full critique of her autopsy, in light of expert testimony adduced in this proceeding, is found in Section III ("New Evidence of Significant Flaws in the 2002 Autopsy") above.

370. For all of these reasons, and based on the totality of evidence now available, the Court concludes that Dr. Urban's opinions at trial about the nature and cause of Nikki's condition at the time of autopsy are unreliable. Dr. Urban's opinion that Nikki sustained "multiple blows" to the head is contradicted by the CT scans taken of Nikki's head that were discovered in the courthouse basement in August 2018. 2EHRR85-87; APPX70. Dr. Urban's opinion that Nikki's condition was caused by a combination of "blows" and violent shaking that would have immediately caused a change in Nikki's level of consciousness, while causing no skull fractures, neck damage, or contusions, is also not reliable in light of current scientific understanding. Finally, her conclusion that Nikki's death was a homicide without considering Nikki's medical history is unreliable and the Court finds that it should be rejected. The reasons why the Court finds Dr. Urban's testimony in this habeas proceeding unreliable are discussed in Section III.A below.

II. TRIAL WITNESSES WHO OFFERED LAY OPINIONS TO SUPPORT THE STATE'S GUILT-PHASE THEORY

371. Beyond the testimony from medical professionals described above, the State relied at trial on a small set of lay witnesses to support the inference that Mr. Roberson had intentionally injured his daughter Nikki. Those lay witnesses were: his ex-girlfriend Teddie Cox, two minor children (Teddie Cox's daughter Rachel and niece Courtney), and Verna Bowman. The Court finds and concludes that these

witnesses did not offer reliable support for the proposition that Mr. Roberson caused Nikki's injuries.

A. Teddie Cox

372. Although Ms. Cox was not present when Mr. Roberson discovered that Nikki was unconscious, at trial, in response to leading questions, Ms. Cox agreed with the prosecutor that Mr. Roberson had not seemed to be in a big hurry to get Nikki to the hospital or "seemed upset" about Nikki's condition. 42RR183-184; 42RR185-186; 42RR190. Ms. Cox also testified as to what he had reputedly told her at the ER about what had happened with Nikki: "He said they had fallen asleep watching a movie that night and that he heard her crying and he woke up and Nikki was at the foot, close to the foot of the bed, but she was on the floor. He woke up and made sure that she was okay and then he put her in the bed with him and they went back to sleep." 42RR187. Ms. Cox further testified that Mr. Roberson, at some unidentified time, told her "she'd fell off and hit her head on the brick," which seemed to be a reference to the cinderblocks holding up the mattress and box springs. 42RR188; APPX40-APPX45. Yet Mr. Roberson consistently reported that he did not see Nikki fall off the bed; he just heard a cry, woke up, and found her on the floor. *See* APPX7.

373. Ms. Cox had no personal knowledge of what had happened to Nikki during the last days of her life as Ms. Cox was in the hospital herself at the time. Her

willingness to agree with the prosecutor that Mr. Roberson had not seemed sufficiently upset, did not care for Nikki, and that she once saw him "shook her" is not credible in light of her repeated admission on the stand that she changed her story about what had happened and her assessment of Robert depending on "how [she] feel[s]" at the moment and whether she was "mad" at him at the time. 43RR11; 43RR36; 43RR48.

374. Moreover, the trial record shows that Ms. Cox was an intellectually impaired and unstable individual. She had been placed in special education classes as a child, failed to graduate from the 9th grade, was still married to a man (Cox) who had been imprisoned for sexually assaulting her daughter, and had been institutionalized following a suicide attempt soon before trial. 42RR131-34; 42RR158; 43RR3-8; 43RR40-41. Ms. Cox's trial testimony was not credible.

B. Minors Rachel and Courtney

375. The two minor children in Ms. Cox's care who were called to testify as to whether they had ever seen Mr. Roberson "shake" Nikki were given a teddy bear, which bore no anatomical similarity to two-year-old, 28-pound Nikki, and were then invited to demonstrate the shaking. 42RR44-61; 42RR63-77. The Court finds this demonstration was not scientific yet was highly prejudicial. In light of new scientific evidence adduced in this proceeding, described at length above, a demonstration of that nature should not have been allowed. Additionally, these children, Rachel and

Courtney, would have been ages 9 and 10, respectively, at the time of Nikki's death. Evidence suggests that they had been subjected to traumas that had nothing to do with Mr. Roberson that would likely have affected them; moreover, by the time they testified, they had been told that Mr. Roberson had caused the death of a child whom they knew and occasionally lived with, a circumstance that would certainly have induced an adverse bias against him. Additionally, Rachel's own mother, Ms. Cox, testified that she did "not trust [her] little girl" Rachel "around any men," seemingly because Rachel had been sexually abused by Mr. Cox, to whom Ms. Cox was still married at the time of Mr. Roberson's trial. 43RR19. The testimony of these children—claiming that they had once seen Mr. Roberson "shake" Nikki—is not reliable. But even if it were given credence, that testimony, adduced by the State to support its theory that Nikki's death had been caused by violent shaking, is only relevant to the extent that the "shaking baby/shaking impact syndrome" theory upon which the State relied at trial can withstand scrutiny in light of current scientific understanding. The Court, for reasons explained at length above, finds that it cannot withstand scrutiny.

C. Verna Bowman

376. The State also adduced testimony at trial from Verna Bowman. Mrs. Bowman's testimony established a timeline as to when Mr. Roberson had retrieved Nikki, at the Bowmans' request, on January 30, 2002 around 9:30 PM, and that Mr.

Roberson had called Mrs. Bowman the following morning, asked her to come to the ER, and told her "'Nikki fell off the bed and hit her head on the table or something.'" 43RR155. Mrs. Bowman also testified that, once she arrived at the hospital, she talked to Mr. Roberson, and, according to Mrs. Bowman, he again told her "That [Nikki] fell off the bed and hit her head on the table or something." 43RR156. Mrs. Bowman testified at trial that his explanation did not sit well with her "because, you know, just falling off of a bed is not going [to] do that, give a baby that type of injury." 43RR156. Nothing in the trial or habeas records suggests that Mrs. Bowman had any special knowledge of biomechanics or forensic pathology or was aware of the new science at issue in this proceeding.

377. The trial record does show that Mrs. Bowman had had previous experiences of finding Nikki unconscious and turning blue, which had prompted Mrs. Bowman to take Nikki to the hospital. In describing one of the previous apnea incidents, Mrs. Bowman testified: "[Nikki] just made a little noise and I turned around to see what was wrong and she was just laying there." She was "limp." Mrs. Bowman said that she then "shook her, you know, trying to get her to catch her breath because she turned blue and purple." 43RR127-128. At trial, the extraordinary similarity between Mrs. Bowman's experience with Nikki in the past and Mr. Roberson's experience with Nikki the morning of January 31, 2002 was not

developed before the jury. *Compare id. with* Mr. Roberson's statement to law enforcement:

> This morning when she wouldn't wake up, I crawled up on the bed and grabbed her face and shook it to wake her up. Then when she didn't wake up I slapped her face a couple of times. I picked her up—picked up her hand and it flopped back on the bed, down on the bed. That is when I started getting scared.

APPX7. That is, both Mrs. Bowman and Mr. Roberson had reacted to finding Nikki unconscious by shaking her to try to get her to start breathing again; yet Mr. Roberson's reference to shaking Nikki to try to revive her was treated as an admission of guilt (even though it related only to the attempt to revive Nikki).

378. Furthermore, nothing in the record indicates that Mrs. Bowman had conveyed to Mr. Roberson that Nikki had a history of turning blue from oxygen deprivation. Mr. Roberson had not been present in Nikki's life when those first episodes had occurred. The record does establish, however, that Mrs. Bowman had endeavored to keep Nikki from visiting Mr. Roberson's mother, Carolyn Roberson, while Nikki was being actively treated for her breathing apnea. APPX90; APPX76. The record also shows that Mrs. Bowman harbored a great deal of animosity toward Mr. Roberson's mother due to the custody dispute over Nikki and related CPS interventions that had begun long before Mr. Roberson had become involved in Nikki's life. By November 2001, after Nikki had turned two, the Bowmans had

agreed to cease fighting for custody of Nikki and conceded to Mr. Roberson's becoming Nikki's primary custodian.[45] 6EHRR162.

379. By the week of Nikki's final illness, the record shows that Carolyn Roberson, Mr. Roberson, and the Bowmans all played some role in getting Nikki to the ER on January 28th and to her pediatrician's office on January 29th. The night of January 30th, Mrs. Bowman expressly asked that Mr. Roberson leave the hospital in town and drive 10 miles out to the country to retrieve Nikki and keep her with him that night. 6EHRR146. Therefore, the only reasonable inference is that Mrs. Bowman believed that it was appropriate and safe for Nikki to be with Mr. Roberson on the night before she was found unconscious, even though she had been sick all week, had a fever of 104.5 the day before, and had been prescribed multiple strong medications. The Court finds and concludes that if Mrs. Bowman believed otherwise, then her role in encouraging Mr. Roberson to take custody of Nikki on January 30th should have been investigated. In any event, her trial testimony cannot be seen as reliable support for the State's theory that Mr. Roberson had intentionally caused his daughter's death.

III. THE STATE'S HABEAS WITNESSES WHO OFFERED MEDICAL/SCIENTIFIC OPINIONS TO SUPPORT THE STATE'S GUILT-PHASE TRIAL THEORY

[45] Yet at the same time, evidence shows that Mrs. Bowman continued to try, but failed, to develop evidence that Nikki was being abused by the Robersons through social worker Georgeann Mitchell. *See* 6EHRR194.

380. During the habeas proceeding, the State presented two witnesses: Dr. Jill Urban and Dr. James Downs. Dr. Urban, as explained above, is the medical examiner who performed the autopsy on Nikki Curtis in February 2002 and then testified for the State during Mr. Roberson's February 2003 trial. Dr. Downs was an expert retained by the State in this habeas proceeding. Dr. Downs agreed with Dr. Urban's opinion that Nikki died from "blunt force trauma" caused by intentionally inflicted "blows" to the head. Both of these doctors are forensic pathologists who have worked as medical examiners.

A. Dr. Jill Urban

381. As discussed extensively above, Dr. Urban performed the autopsy on Nikki Curtis on February 2, 2002 and concluded that same day that the cause of death was "blunt force injuries" and the manner of death was a homicide. APPX12. At trial she testified that Nikki's head injuries had been caused by a "shearing" motion, *i.e.*, "shaking," that had caused the "little bitty veins" connecting the dura to the brain to tear, which then caused all of the blood in the subdural space Dr. Urban saw during the autopsy. 43RR75; *see also, e.g.*, 43RR79 ("When a child is say, shaken hard enough, the brain is actually moving back and forth within, again, within the skull, impacting the skull itself and that motion is enough to actually damage the brain."). Dr. Urban also told the jury that she "believed" she saw signs of "multiple

impacts over the entirety of the head" caused by a combination of "shaking" and "blows." 43RR74.

382. In 2016, Dr. Urban submitted an affidavit, at the State's request, reaffirming her conclusions regarding cause and manner of death. APPX100. However, in her affidavit, she deviated from her trial testimony, most notably by distancing herself from shaking as a mechanism of injury, emphasizing that she had not listed "shaking baby" as the cause of death, which was accurate. *See id.* However, she repeatedly described to the jury her belief that shaking had been a cause of the "blunt force injuries" listing in her autopsy report.

383. Mr. Roberson subpoenaed Dr. Urban because she is a critical fact witness. The State, however, characterized her as its expert and called her as a witness instead. 9EHRR. The State relies on her post-conviction defense of her 2002 findings to support its position that Mr. Roberson should be denied habeas relief.

384. While testifying in this habeas proceeding, Dr. Urban was more explicit about retreating from shaking: affirmatively stating her opinion that this case does *not* involve shaking. 9EHRR117; 9EHRR204; 9EHRR208 ("I don't know that there is a shaking component here."). She now claims instead that all of the blunt force injuries were caused by striking Nikki "against something" and that the "strikes" or "blows" were associated with "impact sites," although she had described the initial injury as being caused by shearing/shaking at trial. 9EHRR188-190; 9EHRR192;

9EHRR193. Dr. Urban made this shift without acknowledging the divergence from her trial testimony. Yet it is the *trial* testimony from the State's experts, including Dr. Urban, that this Court must consider in reaching conclusions about Mr. Roberson's claims. This is particularly true of his claim that the science the State relied on to obtain his conviction has changed or was wrong.

385. The Court finds that Dr. Urban's unacknowledged, but clear, shift in opinion is an implicit admission that the scientific understanding she shared with the jury at trial has changed or was wrong.

386. Additionally, the Court finds significant reasons arising from Dr. Urban's testimony in this habeas proceeding to reject her current opinions regarding cause and manner of death. Those reasons are outlined below.

1. The evidence establishes that Dr. Urban conducted an inadequate investigation.

387. Dr. Urban testified that Nikki's autopsy was already the 456th of 2002 as of February 2nd, which suggests a reason why she may have rushed to reach a conclusion as to cause and manner of death the same day as the autopsy. 9EHRR86. Regardless of the reason, the Court finds that, in retrospect, in light of the vast material information that she did *not* investigate or consider, Dr. Urban's conclusions reflect a rush to judgment. Because she lacked crucial history, she was

unable to do a differential diagnosis, which involves ruling out all other potential causes before reaching a conclusion.[46]

388. It is uncontested that Dr. Urban did not consider a vast amount of information that other experts, including the State's retained expert, opined should have been considered.[47] Dr. Urban does not appear to have considered any of the following before deciding to adhere to her 2002 conclusions:

- Nikki's medical history from birth, including the records of her recent illness the week of her collapse and the drugs that had been prescribed to her by both a pediatrician and an ER doctor, 9EHRR107; 9EHRR108; 9EHRR138; 9EHRR161-163;

- The Palestine Regional ER records related to Nikki's admission and treatment the day of her collapse, 9EHRR64;

- The CT scans taken of Nikki's head when she was admitted to the Palestine Regional ER the morning of her collapse, 9EHRR109;

- The EMS records reflecting Nikki's treatment in transport from Palestine to Dallas, 9EHRR185;

- A medical reference book to determine whether Nikki's organs were of an abnormal weight at autopsy (which both the lungs and the brain were); 9EHRR139-140.

- The scene where Nikki collapsed including: the fact that the bed where she had been sleeping was propped up on cinder blocks, 9EHRR145-146;

[46] The State's retained expert, Dr. Downs, agreed with Dr. Ophoven that the ethics of forensic practice require doing a differential diagnosis. 10EHRR71.

[47] Dr. Downs testified, for example, that a forensic pathologist has to obtain evidence "from whatever source" and opined that "[t]o practice medicine without history would be malpractice." 10EHRR27; 10EHRR30.

- The expertise of a biomechanical engineer or biomechanical research regarding the injury-potential of short falls, 9EHRR145-146;

- Data about the potential height, trajectory, or impact surface associated with the reported fall, trajectory of the fall, or the impact surface, 9EHRR145-146;

- The relevance of Nikki's height, weight, age to determine whether it was physically possible to generate sufficient force through shaking her to cause the injuries observed, 9EHRR145-146;

- The wash rag and bedding obtained from the scene containing a very small amount of blood, 9EHRR153-154;

- Any information regarding "promethazine" a drug found in Nikki's system that Dr. Urban she did not know, as identified by a toxicology report that Dr. Urban had requested, 9EHRR166-167; and

- All of the intervening medical treatment, transports, and medications that were applied to Nikki after she arrived at the ER on January 31st until she arrived at the crime lab on February 2nd, including having a pressure monitor surgically implanted in her head, 9EHRR183-184.

389. Evidence adduced for the first time in this habeas proceeding established that Dr. Urban had ordered tests from specialists, including a toxicology report, and did not wait for those test results before reaching a conclusion regarding cause and manner of death. APPX99. As Dr. Wigren explained, the toxicology report showed that Nikki still had a lethal dose of promethazine in her system when Dr. Urban performed the autopsy. Dr. Urban did not provide a convincing explanation as to why she did not wait for the results of the toxicology screen or why she did not investigate once it was clear that Nikki had a high quantity of a drug unfamiliar to Dr. Urban in her system at the time of autopsy. 9EHRR97-98; *see also* APPX105.

390. Dr. Urban did not have the benefit of Dr. Mack's 2021 report before this proceeding commenced. But Dr. Urban provided no explanation as to why she did not consult with a radiologist after the CT scans had resurfaced or why, in 2002, she did not consider the two sets of CT scans taken of Nikki's head at Palestine Regional (on January 31, 2002) and then at Children's Medical Center (on February 1, 2002), even though Dr. Squires referred to and relied on at least one set of scans as evidence that only a single impact site was observed on Nikki's head before the autopsy. APPX70; *see also* 42RR103.

391. The Court further finds that Dr. Urban's reluctance to own responsibility for her inadequate investigation was troubling. She repeatedly claimed that she "did not have access" to certain information, when there is no evidence that she ever tried to obtain it. 9EHRR107; 9EHRR170. But even with the few medical records in her possession—from the two days at Children's Hospital—Dr. Urban could not say whether she reviewed them before or after doing the autopsy. 9EHRR160. Whenever she may have reviewed them, she has now admitted that, based on those records alone, she was laboring under the false hearsay report that Nikki had been "totally well" the day before her collapse. 9EHRR162-163. That is, Dr. Urban agreed that a child with a 104.5-degree fever who had been prescribed Phenergan suppositories and cough syrup with codeine was *not* "totally well." 9EHRR164.

392. The only excuse Dr. Urban offered for her failure to investigate was provided by State's counsel who suggested Nikki was her "crime scene." 9EHRR210. The Court finds that an admission of this nature only underscores concerns that Dr. Urban may have prejudged this case to be a homicide and then conducted a truncated investigation. Even the State's retained expert, Dr. Downs, opined that "every case starts at some scene" and claimed that he always "went to every scene." 10EHRR30; 10EHRR62. Furthermore, Dr. Downs stated that he would have gotten Nikki's medical records "from birth to death;" and he opined that Dr. Urban's failure to do so was "suboptimal." 10EHRR181; 10EHRR182.

2. The evidence establishes that Dr. Urban adopted a defensive posture, functioning more like an advocate for the State's position than a neutral purveyor of relevant facts.

393. Dr. Urban has been employed by the Dallas County medical examiner's office since she completed her residency in forensic pathology in July 2000, a year and a half before she performed the autopsy on Nikki. 9EHRR8-9; 9EHRR117. At that time, SWIFS' lab was not yet accredited and thus not governed by recognized quality-control standards. 9EHRR158.[48]

[48] The Court takes judicial notice of the fact that the Texas Forensic Science Commission's website includes a list of Forensic Lab Accreditation Status in this state. The information about SWIFS, where Dr. Urban performed the autopsy on February 2, 2002, shows that SWIFS was not accredited with respect to any recognized standards in *any* area until 2003 after Dr. Urban performed the autopsy on Nikki Curtis. Moreover, that accreditation was withdrawn by the accrediting body in 2008 and only reinstated several years later. Public reports are available at https://www.txcourts.gov/media/1452463/texas.pdf (last visited Jan. 18, 2022).

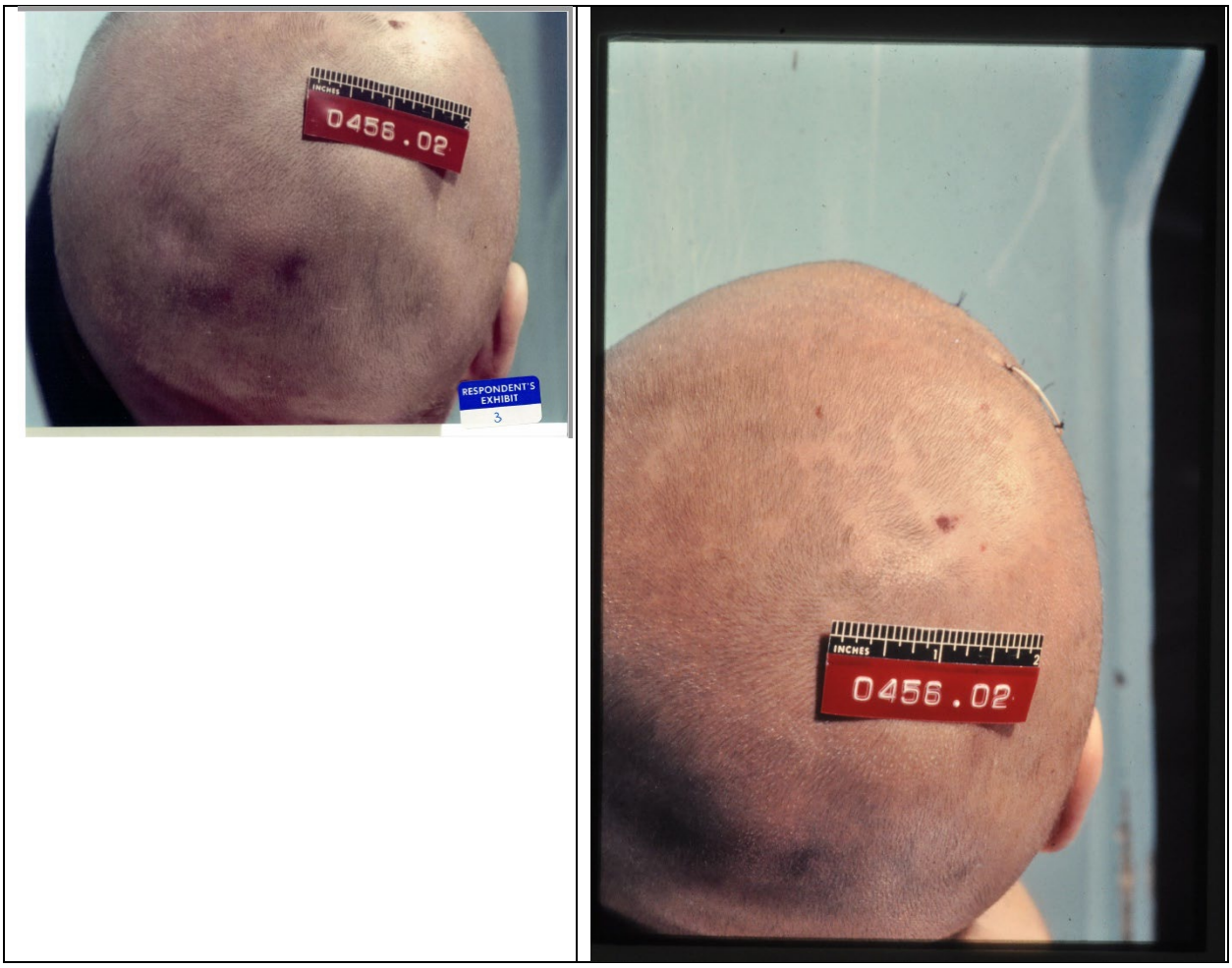
394. At the outset of Dr. Urban's direct examination, the State introduced a document into evidence that had never been previously disclosed, although Mr. Roberson had previously made requests for Dr. Urban's "complete file." 9EHRR19-22; 9EHRR156-157; SX1; *see also* APPX99 (purporting to be a "complete" copy of Dr. Urban's autopsy file although it contains no photographs or SX1). Reputedly, this document was created at the time of the autopsy and includes handwritten notes of the "injuries" that Dr. Urban observed on Nikki's exterior. According to her testimony in this proceeding, Dr. Urban saw **three impacts sites on Nikki's head**: one at the back of her head, one on the top of her head, and one on the left side of her face. She also identified a torn frenulum. She opined that for her, these impact sites were sufficient for her to conclude that Nikki's death was a homicide. 9EHRR219. Yet Dr. Urban could not articulate what standard she used before making a determination regarding cause and manner of death. She volunteered: "I would say clear and convincing, preponderance of the evidence." 9EHRR217. Yet "clear and convincing" and a mere "preponderance" are two different standards; and neither of them rise to the level of "beyond a reasonable doubt," which, in our criminal justice system is necessary to support a criminal conviction.

395. Although Dr. Urban's autopsy photographs were already in the record, because they were admitted during her trial testimony, much of Dr. Urban's direct examination was devoted to proving-up reproductions that had been blown up,

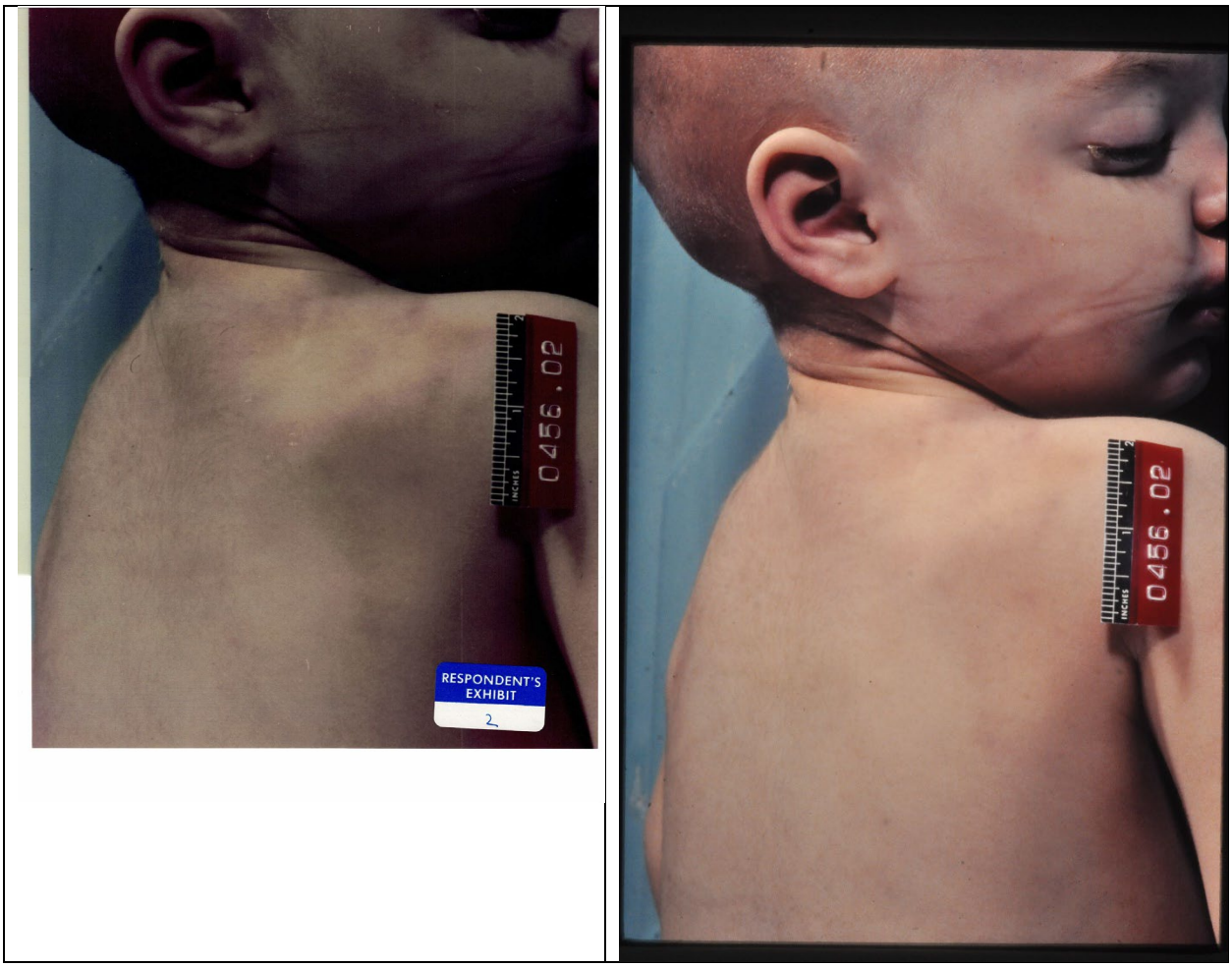
cropped, and the lighting adjusted. *See*, e.g., 9EHRR24-33; 9EHRR42-48; 9EHRR68-72; 9EHRR76-88; 9EHRR94-96; 9EHRR156-157.[49] As explained above, the Court finds that several of the original autopsy photographs were misleading to the jury in that they were presented as if they reflected Nikki's original injuries—as opposed to the state of intracranial bleeding Dr. Urban found over two days *after* Nikki had experienced: a comatose condition with fixed and dilated eyes that was never reversed; significant intracranial pressure that had had to be monitored using a device surgically inserted into her skull; prolonged hypoxia; and multiple intrusive measures in an attempt to reverse her comatose condition that would have affected the volume and distribution of intracranial blood observed during the autopsy. But the photocopies of the original autopsy photographs that were introduced into evidence during Dr. Urban's direct examination in this habeas proceeding further exaggerated the bleeding and bruises due to shadows and selective editing not in the originals, which the Court finds was not helpful. For example, compare:

[49] Dr. Urban had been asked through a subpoena duces tecum issued in this proceeding to bring her entire file to court, but did not do so. *See* Supp CR.

On left: RX7 (darkened, exaggerating light bruises on face); on right: original autopsy photograph 2603.



On left: RX3 (cropped to eliminate pin in head from pressure monitor and darkened, exaggerating bruising associated with single impact site); on right: original autopsy photograph 2616.



On left: RX2 (cropped and darkened, exaggerating light bruise on shoulder); on right: original autopsy photograph 2613.

396. Dr. Urban admitted during this habeas proceeding that, during the past twenty years, she has not "written much" and has no publications in peer-reviewed journal. 9EHRR10-11. She also volunteered that "a lot of these cases run together." 9EHRR121. Despite these acknowledgements, she testified that she saw no reason to change any aspect of her trial testimony and claimed to have learned nothing in the intervening years that would prompt her to reconsider any of her initial findings or trial testimony. 9EHRR127. The Court finds that the lack of receptivity

to new information resulted in her maintaining positions that are self-contradicting, contrary to contemporary scientific understanding, and unreliable.

397. Although Dr. Urban admitted that she had not reviewed the CT scans at all (before the 2002 autopsy or before testifying in 2021), she purported to describe what the scans show. She incorrectly opined that the scans show "generalized" swelling, not swelling associated with a single impact. 9EHRR109. Dr. Urban's opinion is inconsistent with the CT scans as interpreted by radiologist Dr. Mack's report. APPX93. Dr. Urban stated that the CT scans (that she did not consider) were incorrect if they depicted a single impact site, as radiologist Dr. Mack reported, and as accepted by Dr. Squires, Dr. Ophoven, Dr. Wigren, and Dr. Auer. 9EHRR216-217.

398. Similarly, Dr. Urban suggested that "we do not know" if Nikki's heart had continued working after she stopped breathing. 9EHRR111. Yet had she looked at the Palestine Regional ER records, it is clear that Nikki was given chest compressions and was later given epinephrine, evidencing that her heart had indeed stopped, as had her breathing. APPX5; APPX11.

399. Dr. Urban offered the opinion that head trauma can cause a person to stop breathing, contrary to information provided by brain specialist Dr. Auer. Dr. Urban did not consider that Nikki had stopped breathing because of the respiratory-depressing drugs in her system and/or her undiagnosed pneumonia and/or her

diagnosed respiratory infection. Nor did Dr. Urban consider that breathing stoppage led to hypoxia and ischemia, which played a role in creating the triad of conditions that Dr. Urban saw during the autopsy once she looked under Nikki's scalp. 9EHRR109.

340. Dr. Urban admitted that, if the heart stops and breathing stops for 10 to 12 minutes, the patient will experience brain death; but she claimed that "[c]irculation can continue in brain death" thereafter. When asked to provide support for that proposition, which is contrary to the expert opinions of others, including brain expert Dr. Auer, Dr. Urban did not offer any. 9EHRR182. She just asserted her disagreement.

3. The evidence establishes that Dr. Urban had no adequate explanation for rejecting the opinions that Nikki had undiagnosed interstitial viral pneumonia.

341. Dr. Urban's attempt during this habeas proceeding to address the pneumonia finding was not convincing. She attested, for instance, that she did not see "pus" in the lungs, yet she herself had made a note in the autopsy report (APPX12) that she had seen "neutrophils" in Nikki's lungs, which *is* evidence of pus. 9EHRR102; 8EHRR112. In any event, as Dr. Auer explained, what he saw in Nikki's lung tissue was *not* "neutrophils," as Dr. Urban had written in her autopsy report, but, instead, interstitial viral pneumonia in the lungs, which occupies the cellular walls. It does not fill the air sacs with pus. Some of the evidence of the viral

infection were the "macrophages" that Dr. Urban had noted in her autopsy report but did not investigate. She did not address Dr. Auer's instruction that macrophages cannot be inhaled through a ventilator. 8EHRR86. Instead of explaining how Dr. Auer might be wrong, Dr. Urban simply agreed with the unsubstantiated suggestion by State's counsel, who is not a medical doctor, that "macrophages" are "common in people who breathe." 9EHRR105-106.

342. Nor did Dr. Urban have a response to Dr. Auer's explanation regarding the presence of "smudge cells" in Nikki's lungs, which Dr. Urban did not see. 9EHRR105-106. As Dr. Auer explained, smudge cells in the lungs indicate that the virus had started destroying the nuclei of cells; it is a red flag indicating a pathology, the way a cancer cell is. 8EHRR84-86.

343. Dr. Urban also tried to explain away the infected lungs by suggesting that the lung had collapsed while being revmoed; but the air sacs in Nikki's lungs, as seen in Dr. Urban's own autopsy slides, were open, not collapsed. As Dr. Auer explained, with interstitial viral pneumonia, the infection takes over the lung cells themselves; it does not fill the air sacs and cause the lungs to collapse. It causes a gradually thickening of the cellular walls. 8EHRR60-61.

344. Dr. Urban admitted that, unlike Dr. Auer, she has not written any treatises on forensic pathology, has not consulted with a pulmonologist about what he observed in Nikki's lung tissue, has not done any research in a laboratory about

interstitial pneumonia, and has not collected and studied 40 cases similar to Nikki's. 9EHRR142.

345. The Court finds that Dr. Urban's attempt to dismiss as "ventilator pneumonia" the evidence of interstitial viral pneumonia identified by Dr. Auer was unconvincing.

4. The evidence establishes that Dr. Urban had no adequate explanation for rejecting the opinions of more experienced experts regarding the cause and appropriate interpretation of the condition found beneath Nikki's scalp at autopsy.

346. Although Dr. Urban shifted from her trial testimony about the mechanism of injury, she continued to focus on the triad as the main "injuries" that she claimed proved inflicted trauma: subdural blood, brain swelling, retinal hemorrhage. 9EHRR113-144. In this habeas proceeding, Dr. Urban defended her conclusion that Nikki's death was a homicide by reaffirming the part of her trial testimony where she claimed to have seen evidence of "multiple blows" or "impacts" to Nikki's head **based on reading the blood beneath Nikki's scalp**. *See, e.g.*, 43RR74 (Dr. Urban testifying at trial that "In particular, with this much hemorrhage it's very difficult to elucidate exactly much blows there were. But I'm confident with these separate areas of dense hemorrhage and separate areas on the head that there were multiple blows to different points on the head.").

347. Repeatedly, Dr. Urban offered the opinion that she interpreted "dense subdural blood" as an "impact site"; and she equated the "subdural hemorrhage"

with "blunt force injuries." 9EHRR38; 9EHRR41; 9EHRR43-40; 9EHRR50; 9EHRR52-54; 9EHRR70-71. She also treated "contusion" as synonymous with "areas of hemorrhage within the scalp and subscapular [sic] area." 9EHRR129. She acknowledged that hemorrhage was "everywhere," but insisted that the darker blood "are definite impact sites." 9EHRR49. She then claimed that there were three "discrete impact sites": one on the top of Nikki's head, one on the back of the head, and one on the left side of her head. *Id*. She believed that these impact sites "match up" with the blood under the scalp. 9EHRR131.

348. Dr. Urban could provide no scientific support for her belief that the blood she observed under Nikki's scalp proved that she had been struck or hit. She relied solely on her own belief: "I believe blood was there [in the subdural space] as a result of an impact." 9EHRR130.

349. As Dr. Auer explained, Nikki's brain was "non-perfused" (*i.e.*, dead) during the entire time she was receiving treatment to try to revive her, which meant blood could not circulate into or through her brain; thus, the blood being pumped through her system to the brain was being rerouted through the dura, the eyes, etc. while she was in a coma. Once Nikki's brain shut down—as evidenced by her eyes being "fixed and dilated" when she arrived at the ER the morning of January 31st—her brain never read again as "perfused." That is, she suffered from "permanent global ischemia." *See* R. Auer, MD, *Non-Perfused Brain and Retino-Dural*

Hemorrhage, CANADIAN JOURNAL OF NEUROLOGICAL SCIENCES, Volume 46, Supplement s2: ABSTRACT: 58th Annual Canadian Association of Neuropathologists Meeting, September 2019, pp. S61-S62[50] ("restoration of high cardiac output using adrenaline-CPR means that on resuscitation, re-routing of blood that can no longer go through the non-perfused brain detours through dura, face, scalp, eyes and optic nerve sheaths. The diversion of blood around non-perfused brain results in facial bruising and retino-dural hemorrhage that can be **misinterpreted** as head trauma, and a common inference of child abuse in the courts.") (emphasis added); *see also* APPX110; APPX110A.

350. Dr. Urban also had no sound explanation for her own finding that the weight of Nikki's brain, which she measured at 1550 g, was far in excess of normal brain weight for Nikki's age (which is 1050 g). As Dr. Auer, a specialist who has specifically studied this phenomenon, explained: the increased brain weight was caused by brain swelling, not trauma. The increased weight arose because, with a non-perfused brain, none of the edema fluid could be removed from the brain—because nothing was circulating in or out once the brain became and remained "non-perfused," as it had with Nikki even before she arrived at the ER on January 31, 2002 with her eyes "fixed and dilatated." 2EHRR79; 2EHRR82.

[50] *Available through* Cambridge Univ. Press at https://www.cambridge.org/core/journals/canadian-journal-of-neurological-sciences/article/nonperfused-brain-and-retinodural-hemorrhage/E7F942B8564264521B648B4500C4B5DB.

351. Dr. Urban saw intracranial bleeding around the brain, when Nikki's brain was non-perfused, and equated the rerouted blood with trauma. But she could point to no contusions in the brain, no skull fractures, and no relevant skin contusions—because there were none other than the single, small goose egg at the right posterior of Nikki's head, which Dr. Urban largely ignored—even though it is the only impact site visible in the head CT scans taken at the time, which Dr. Urban did not review.

352. Dr. Urban also continued to characterized a torn frenulum in Nikki's mouth as a "blunt force injury" that she claimed was caused by a "blow." 9EHRR114. Yet Dr. Urban offered no explanation as to how the torn frenulum observed at autopsy had anything to do with what she observed under Nikki's scalp.

353. Dr. Urban's opinions regarding the ultimate issue of cause and manner of death were credibly challenged in multiple ways by forensic pathologists (Drs. Plunkett, Ophoven, Bonnell, and Wigren) with far more experience than she had as well as by a highly credentialed neuropathologist, Dr. Auer. Her own testimony suggested troubling defensiveness, not a reasonable difference of opinion.

354. The Court finds and concludes that Dr. Urban's testimony as to why she believed that Nikki's injuries had been "inflicted" reflected multiple insurmountable conflicts with the other credible experts' testimony, which had more explanatory power and better accounted for the facts.

5. Dr. Urban made numerous admissions that further undermine the reliability of her opinions regarding the cause and manner of Nikki's death.

355. Dr. Urban never read radiologist Dr. Mack's report. 9EHRR134. Nor did Dr. Urban consult with any radiologist about the CT scans of Nikki's head in 2002 or during this proceeding. Yet Dr. Urban admitted that one should defer to a radiologist regarding proper interpretation of x-rays/CT scans. 9EHRR171.

356. Dr. Urban admitted that she now knows that Phenergan, the source of the high level of promethazine found in Nikki's system at the time of the autopsy, has a "Black Box Warning" against prescribing it to children Nikki's age. But Dr. Urban claimed not to know whether the warning says anything about "respiratory depression or respiratory failure," which it plainly does. 9EHRR167-169. Moreover, Dr. Urban admitted to being unaware of Nikki's history of breathing trouble or of the respiratory infection that had been diagnosed right before her death; thus, Dr. Urban lacked the basic information to understand why drugs associated with breathing stoppage (promethazine and codeine), which had been prescribed to Nikki days before her death, were relevant. 9EHRR170.

357. Dr. Urban admitted that "a small amount of additional oozing and bleeding" could have been caused by the brain swelling and documented coagulation disorder that started after Nikki's hospitalization. 9EHRR56. She also admitted, more generally, that the blood in the subdural space could have increased and moved

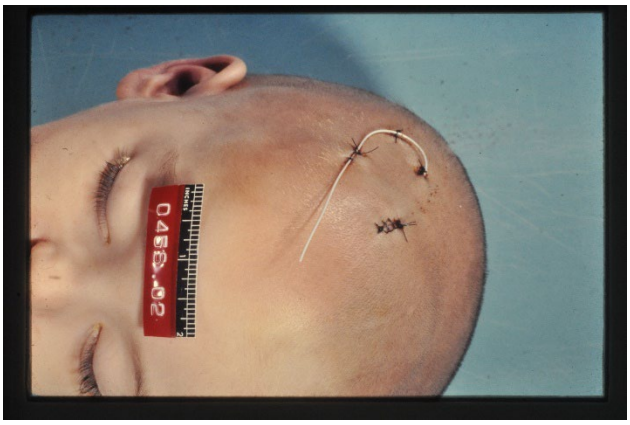
over time. 9EHRR132. Finally, she admitted that Nikki had DIC, which causes "increased susceptibility to bleeding," yet did not include this information in the autopsy report put before the jury or factor it into her assessment of Nikki's condition. 9EHRR186. Dr. Urban did not seem to recognize that these admissions are incompatible with her opinion that she could "match" up external impact sites with the blood she observed over two days after Nikki's initial hospitalization.

358. At one point, Dr. Urban admitted: "I can't link a specific subdural hemorrhage to a specific impact site," yet that is precisely what she claimed to do at trial and then again in this habeas proceeding. 9EHRR71.

359. Dr. Urban admitted that she had not captured in any photograph the "impact site" she claimed to see on the top of Nikki's head. 9EHRR136. She claimed she saw that impact site when she "pulled back the scalp." She failed to acknowledge that, by pulling back the scalp, she herself was moving the blood around, as Dr. Wigren demonstrated using the autopsy photographs. 3EHRR208-213.

360. Dr. Urban admitted that the only impact site to the head that was captured in any autopsy photograph is the one depicting the "goose egg" at the back of Nikki's head. 9EHRR177. She further admitted that such a goose egg "could be caused by a fall." 9EHRR149. Yet she did not investigate the report of a fall or any role it might have played in creating any aspect of Nikki's condition.

361. Dr. Urban admitted that one of the photographs that she showed the jury and this Court depicted pins inserted in Nikki's head where a pressure monitor, that had been surgically implanted in her skull at Children's Hospital had been removed. 9EHRR181. *See* original autopsy photo 2592, not discussed in Dr. Urban's autopsy report, clearly showing pins from removal of pressure monitor and related bruising:



Dr. Urban did not explain these facts to the jury or that a pressure monitor had been embedded in Nikki's skull because her intracranial pressure was quite high. Nor did Dr. Urban consider how the high intracranial pressure and the surgical insertion of the pressure monitor itself would have altered the exterior and interior of Nikki's head before Nikki's body was conveyed to the crime lab for the autopsy.

362. Dr. Urban admitted that it is possible to injure a frenulum when medics "manipulate the mouth," but she claimed that she "personally" has not seen a frenulum torn from intubation. 9EHRR65. But Dr. Urban has never treated living

patients; therefore, she has never had an opportunity to observe or perform an intubation. Others more experienced were clear that the frenulum is easily torn during intubation, which can be a violent process. APPX1; 8EHRR113. Critically, Dr. Urban's admission, even if begrudging, indicates that she cannot say with any reasonable degree of medical certainty that the frenulum was torn from a "blow" to the mouth, as she testified at trial and in this proceeding.[51]

363. Dr. Urban admitted that "there are lots of reasons why a person might develop retinal hemorrhage that are not related to trauma." 9EHRR67; *see also* 9EHRR110. This opinion was consistent with that of the other medical experts who testified in this proceeding, but it is inconsistent with both Dr. Urban's and Dr. Squires' trial testimony. Also, in light of this admission, it is unclear why Dr. Urban continued to include retinal hemorrhage as an example of a "blunt force injury" just as she had in her autopsy report. APPX12; 9EHRR76-81 (extended testimony regarding photographs of Nikki's eyes depicting hemorrhage). After walking through these photographs showing lots of hemorrhage in Nikki's eyes, Dr. Urban then retreated a bit, stating:

[51] While State's counsel represented that Nikki arrived at the hospital with a "mouth injury," there is no record of such; the only information regarding Nikki's mouth was obtained from Mr. Roberson, who described to Detective Wharton wiping a small amount of blood off of her mouth with a rag after he found her on the floor. That information was confirmed by the wash rag itself, which contained small drops of blood. There was no evidence adduced that the blood was the result of a torn frenulum or that her mouth was injured in any other way. She could have spit up the small amount of blood due to her ongoing respiratory infection and cough, conditions that were documented in her medical records but not considered. APPX14; APPX9.

> retinal hemorrhage[:] And as I referenced earlier, this can be associated with head trauma, but there can also be other causes of retinal hemorrhage including increased intracranial hemorrhage, which she had due to her brain swelling. So whether or not this is exactly an injury or, you know, whether this is an inflicted injury or an artifact, I can't say definitely.

9EHRR81. Since all agree that the presence of retinal hemorrhage is not specific to trauma, it does not support her characterization of that condition as a "blunt force injury." *See also* APPX34C (2013 article reporting *thirty non-traumatic conditions* that can cause retinal hemorrhage, which had been used as a primary indicator to support an SBS diagnosis at time of Roberson's trial).

364. Dr. Urban ultimately admitted there can be blood without trauma (such as from a nose bleed or menstruation). Her acknowledgement that blood does not "definitely" "every time" prove trauma is incompatible, however, with her insistence that the mere presence of subdural blood supports her belief that Nikki sustained trauma in the form of inflicted impacts to the head. 9EHRR128.

365. Dr. Urban admitted that there were no bruises on the brain itself, "minimal bruising" on Nikki's face and head, and no skull fractures of any kind. 9EHRR129; 9EHRR181; 9EHRR187. Yet Dr. Urban maintained that Nikki had sustained blows to the head so forceful that they had caused the subdural bleeding because Dr. Urban believes "there can be forceful impact on the head that leave no or minimal mark[s]. 9EHRR150. Dr. Urban claimed to see no incoherence with her finding that Nikki had sustained massive internal head injuries through inflicted

trauma without sustaining any significant bruises visible externally, any skull fractures, or any bruising to the brain itself. 9EHRR188. The Court finds this position contrary to the credible experts' testimony in this proceeding and contrary to common sense.

366. For all of these reasons, the Court finds and concludes that Dr. Urban's defense of her 2002 autopsy and her conclusions regarding the cause and manner of Nikki's death are unreliable and should be rejected.

B. Dr. James Downs

367. The State also presented Dr. James Downs of "forensX, LLC." RX40. For multiple reasons, the Court finds that Dr. Downs was not a credible witness and his opinions about the cause of Nikki's condition and death are not reliable.

1. Dr. Downs has no credibility with respect to spotting pneumonia.

368. In an attempt to rebut Dr. Auer's comprehensive findings, including the opinion that Nikki's death was caused primarily by an undiagnosed interstitial viral pneumonia, Dr. Downs repeatedly claimed that Nikki's lungs were "normal little kid lungs" and that he saw "no pneumonia." 10EHRR74; 10EHRR76; 10EHRR212; 10EHRR220; 10EHRR242. Dr. Downs also asserted that he did not believe he had "ever missed" a pneumonia "since they're pretty much readily apparent grossly." 10EHRR221.

369. Yet the Court finds that a court recently concluded that Dr. Downs had missed a key finding of pneumonia in a child autopsy that he performed years ago and about which he testified in a death-penalty case that resulted in a conviction. In a recent appellate court decision by Alabama's Court of Criminal Appeals, the habeas applicant, John Ward, who had been sentenced to death for intentionally causing the death of his four-month-old son, was granted relief based in part on new evidence that Dr. Downs had failed to recognize (or at least failed to tell the jury) that the child had **pneumonia** at the time of his death. *See Ward v. State*, CR-18-0316, 2020 Ala. Crim. App LEXIS 62 (Ala. Crim. App. Aug. 14, 2020); *see* also APPX160.

370. *Ward* provides the following history relevant to assessing the reliability of Dr. Downs' opinions in the present case. Dr. Downs, then the Alabama state medical examiner, performed the autopsy in question in 1997. In Ward's 1998 trial, Dr. Downs told the jury that the child had suffered from "battered child syndrome" and that the cause of the child's death was "multiple blunt force injuries and suffocation." *Id.* at *3-*4. Approximately ten years later, for reasons unclear from the court's opinion, the doctor who was then Chief State Medical Examiner, ordered a review of Dr. Downs' work. *Id.* at *8. "[F]our Senior State Medical Examiners" were asked to review Dr. Downs' "original case notes, histology slides, and photographs" from the autopsy of Ward's son. *Id.* After that review, all four

pathologists agreed that the child had "significant acute bronchopneumonia" at the time of his death; two of the forensic pathologists agreed that the pneumonia, not blunt force injuries, had caused the child's death. *Id.* at *9. But because a majority of the four did not agree on the cause of death, the autopsy was not amended at that time. *Id*. Nor were the results of the internal investigation and the pneumonia findings shared with Ward at that time. *Id.* Ward did not receive a copy of "the memorandum—or know of its existence—until September 22, 2017." *Id.* That was ten years later—and a few months *after* Ward had filed a habeas petition alleging "that newly discovered evidence showed that [his son] died from pneumonia and thus Ward was actually innocent[.]" *Id.* at *7. Ward had been able to ascertain that his son had pneumonia only by obtaining an independent review by a retained forensic pathologist, Dr. Janice Ophoven. *Id.* Only after Ward had independently learned about this alternative explanation of his son's death and sought relief on that ground was the memorandum describing the critique of Dr. Downs' initial autopsy disclosed to Ward. *Id.* at *7-*9.

371. In the recent *Ward* decision, the Alabama Court of Criminal Appeals concluded that the new evidence of the child's pneumonia "directly contradicted testimony from Dr. Downs at Ward's trial that [his son] must have been suffocated based on some physical signs that, Dr. Downs said, were consistent with death by suffocation and because he could discern *no other cause of death*." *Id.* at *10

(emphasis added). The *Ward* court further emphasized that Dr. Downs was "the only expert witness who testified at Ward's trial about the cause of [his son's] death" and Dr. Downs had "said nothing in his report or his trial testimony about whether [the child] had pneumonia." *Id.* at *11.

372. During the recent evidentiary hearing in this case, Dr. Downs claimed "being unaware" of the recent determination by the Alabama Court of Criminal Appeals regarding his failure to find or reveal that the child in *Ward* had had pneumonia. 10EHRR222. Considering that Mr. Roberson has adduced significant new evidence that Nikki too had undiagnosed pneumonia at the time of her death and that the only medical examiner who testified at his trial (Dr. Urban) failed to investigate or reveal to the jury that Nikki had pneumonia, Dr. Downs' opinions regarding cause of death in this case must be viewed with skepticism. Other reasons exist to discount his opinions entirely.

2. Dr. Downs ventured far beyond his field of expertise.

373. Dr. Downs is a medical doctor who spent most of his career as a medical examiner and is trained in clinical, anatomical, and forensic pathology. 10EHRR10-11. He has no special training in neuropathology, radiology, pediatrics, pharmacology, or biomechanics. 10EHRR106-108. Yet during the evidentiary hearing, he purported to offer opinions in each of these fields and others.

374. While admitting that he is not trained in radiology, Dr. Downs claimed that he nevertheless knows how to read x-rays and CT scans. 10EHRR171. He claimed that he "tried" to consult with a radiologist about this case, but did not succeed. 10EHRR110. He purported to interpret CT scans taken of Nikki after blowing them up and cutting and pasting components of different images and then incorporating them into a PowerPoint presentation. 10EHRR52-56. Dr. Downs then claimed that "blood" that he saw in the x-rays allowed him to see "additional" impact sites that everyone else had missed—including the only radiologist to interpret the head scans. 10EHRR52-56. During its cross-examination of a different witness, counsel for the State had asked: "wouldn't it be better for a person that is certified in radiology" to interpret "X-rays and CT scans?" 4EHRR100. The Court agrees that it would be better for an appropriately qualified expert to do so. Therefore, the Court finds that Dr. Downs' attempt to venture outside of his field instead of relying on a trained radiologist further hurt his credibility.

375. Dr. Downs' testimony regarding his personal view about the contents of the CT scans, which he has not been appropriately trained to interpret, is especially problematic since his interpretation was at odds with, and seems to have been adopted to contradict, radiologist Dr. Mack's report. The Court finds that the State could have, but did not, retain a qualified radiologist or neuroradiologist to interpret the CT scans that were rediscovered in August 2018 in the courthouse

basement. The Court further finds that Dr. Downs was not qualified to opine on this topic. *See* TEX. R. EVID. 705(b); *Broders v. Heise*, 924 S.W.2d 148, 153 (Tex. 1996) (requiring trial court to exclude expert testimony where the expert is not specifically qualified to opine on the subject).[52]

376. Dr. Downs spent a great deal of time testifying about biomechanical issues, simultaneously arguing that he has known for "years and years" that short falls can be fatal while also arguing that the body of biomechanical research into the injury-potential of short falls is wrong as is the biomechanical research showing that shaking has not been shown to have the injury-potential to cause the kind of internal head injuries in Nikki. 10EHRR65; 10EHRR97-99; 10EHRR102; 10EHRR141; 10EHRR241. Although Dr. Downs claimed to be aware "for decades" that short falls can kill, he was untroubled by Dr. Urban's failure to investigate Nikki's fall from a

[52] Dr. Downs' opinions about the contents of CT scans would be inadmissible as those opinions were formed without consultation with a qualified radiologist. The trial court is responsible for ensuring that "those who purport to be experts truly have expertise concerning the actual subject about which they are offering an opinion." *Broders*, 924 S.W.2d at 152. Before a trial court admits expert testimony, it must find that the witness is "qualified as an expert by reason of his knowledge, skill, experience, training, or education[;]" that the expert testimony is reliable; and that the expert's testimony is relevant. *Vela v. State*, 209 S.W.3d 128, 131 (Tex. Crim. App. 2006) (quoting TEX. R. EVID. 702). Qualification is distinct from reliability and relevance and, therefore, must be evaluated independently. *Vela*, 209 S.W.3d at 131. That a witness is an expert in some matters, or that he/she "possesse[s] knowledge and skill not possessed by people generally," does not necessarily mean "that such expertise will assist the trier of fact regarding the issue before the court." *Broders*, 924 S.W.2d at 153 (quoting opinion below, emphasis added). To be qualified, the witness's "background must be tailored to the specific area of expertise" in which he/she will testify. *Vela*, 209 S.W.3d at 133. The inquiry into qualification thus focuses on the "fit" between the expert's qualifications and the subject matter at issue. *Broders*, 924 S.W.2d at 153.

22.5-inch bed propped up on cinder blocks. 10EHRR241-242. When asked during cross-examination to cite evidence as to why his opinions should trump that of relevant research in the field of biomechanics, Dr. Downs respond by saying "I'm not a physicist. I'm not a biomechanical engineer." 10EHRR156-159. The Court finds that is a true statement. Moreover, Dr. Downs has no special training in biomechanics and thus was not qualified to rebut the testimony of qualified biomechanical engineer, Dr. Ken Monson. Dr. Downs' attempt to do so was not credible.

377. Dr. Downs further purported to offer expert testimony regarding "factors," such as being poor, that he believes can lead a person to commit child abuse. He offered an extensive argument, devoid of scientific support, as to why random elements of Mr. Roberson's social history that Dr. Downs claimed to know would have made Mr. Roberson prone to abuse Nikki. 10EHRR85-92. Dr. Downs has no apparent training in sociology, social work, psychology, child abuse pediatrics, or any other field that might have made him potentially qualified to opine about the socio-economic and mental health factors relevant to understanding child abuse. The Court further finds that his opinions on this subject were not credible.

378. Dr. Downs claimed that he saw "potential bite marks" on Nikki's mouth and suggested that he has expertise in "odontology." 10EHRR177. Dr. Downs also testified that he has been able to identify perpetrators of assaults by interpreting "bite

mark" evidence "[a]ctually quite a few times." 10EHRR238. He did not seem aware that in Texas, forensic attempts to interpret "bite mark" evidence is now seen as junk science. *See Ex parte Chaney*, 563 S.W.3d 239 (Tex. Crim. App. 2018) (granting habeas relief under Article 11.073 based on a substantial sea-change in the field of forensic odontology, larging discrediting the field).

379. Dr. Downs claimed that he has done "research" on child head trauma, but could not cite any publications of his work in any peer-reviewed journal. 10EHRR13; 10EHRR129. Moreover, he dismissed the idea that a pathologist like himself could do "evidence-based medicine" because, in his view, that is only relevant to "treating patients," which he has never done. 10EHRR27-28; 10EHRR105.

380. Dr. Downs claimed that he has "written on ethics" and that "ethics are very important to" him. 10EHRR14. Dr. Downs was a signatory on an amicus brief, filed with a court, that described various ethical propositions that are supposed to guide forensic pathology. Those precepts include the following: "Even when a witness is qualified as an expert in pathology, a Court must not give him or her carte blanche to proffer any opinion he chooses." 10EHRR185-187. Yet as explained above, Dr. Downs did not adhere to that ethical principle in this case.

3. Dr. Downs' approach to this case suggested a cavalier approach to the relevant, underlying facts.

381. Dr. Downs testified that he agreed that responsibly presented opinion evidence from forensic scientists "must report any relevant uncertainty in their findings." 10EHRR186. Yet Dr. Downs' testimony in this proceeding was announced with absolute certainty and the contention that this was "a very easy case," 10EHRR153, even as he disregarded or mischaracterized considerable relevant evidence adduced in this proceeding.

382. For instance, in asserting that Nikki was not ill at the time of her collapse, Dr. Downs cited a note Dr. Ross had made that Nikki was "free of illness." 10EHRR57. Yet Dr. Ross's own trial testimony makes clear that he admitted on the stand at trial that this was one of several errors in his notes from January 31, 2002. Dr. Ross specifically admitted that, based on Nikki's medical history, his notes for January 31st should have stated "viral illness." 42RR13. Moreover, the assertion that Nikki was "free of illness" is contradicted by her medical records including those from the visit to Dr. Ross's office on January 29th, less than two days before her collapse, when her temperature was recorded as 104.5 degrees and she was assessed as having an antibiotic-resistant respiratory infection. APPX9. Likewise, Dr. Downs' insistence that there was "no evidence of infectious process" in Nikki is contrary to the record. 10EHRR72. Dr. Ross testified that Nikki had had an upper respiratory infection when seen in his office; that her ear drums were infected and

visibly "red" when observed her in the ER; that her infection had been progressing despite a regiment of antibiotics. 42RR18; 42RR32-33.

383. Dr. Downs denied that Nikki's brain was already dead/nonperfused when she arrived at the hospital, despite the testimony that her eyes were "fixed and dilated" when she arrived at the hospital. 10EHRR50; 10EHRR213.

384. Dr. Downs initially claimed that he saw no evidence that Nikki had been given epinephrine in the hospital and then admitted that there was a reference to it being given by at least January 31, 2002 at 7:45—over 1.5 days before the autopsy. 10EHRR59. Dr. Downs also admitted, on cross-examination, that hospital records showed that Nikki had also been given vasopressin, dopamine, and heparin, all of which increase intracranial pressure. 10EHRR214-215. Dr. Downs did not, however, take into account how those drugs would have affected the volume and position of the blood inside Nikki's head as observed at the time of the autopsy, as Dr. Auer, the brain specialist, did.

385. Dr. Downs claimed that the brain itself "had quite a few injuries," yet none are noted in the autopsy report or neuropathology report. Additionally, neuropathologist Dr. Auer, the brain expert, looked for and found no bruising or other injuries to the brain itself. 8EHRR96; 3EHRR79. Even Dr. Urban admitted that she had found no evidence that the brain itself was injured. 9EHRR188.

386. Dr. Downs, incorrectly, asserted that there was "never any mention or notation that [Nikki] had any kind of respiratory issues ever." 10EHRR73. This assertion is contrary to the evidence of her history of breathing apnea and to several notations in her medical records, including the last illness that resulted in a prescription for Phenergan with codeine specifically because Dr. Ross found she had a respiratory infection. APPX9.

387. In terms of the drugs that had been prescribed to Nikki during her last month and days, Dr. Downs did not feel that this information was significant to his assessment. 10EHRR173. He dismissed the high quantity of Phenergan/promethazine found in her system as a "red herring." 10EHRR76. Although he testified that a forensic pathologist should study all medical records, "birth to death," he was unfamiliar with the history of Phenergan prescriptions in Nikki's medical records. 10EHRR181; 10EHRR195-197. He did not recognize, therefore, that the amount of Phenergan Nikki had been prescribed had tripled right before her death. 10EHRR197.

388. Dr. Downs admitted that he did not know what a fatal dose of Phenergan would be—or how Phenergan mixed with the narcotic drug codeine might have affected a child Nikki's age. 10EHRR207. He was also unfamiliar with the Black Box warning on Phenergan that states, for instance:

- "Phenergan tablets and suppositories may impair the mental and/or physical abilities required for the performance of potentially hazardous tasks. The

impairment may be amplified by concomitant use of other central-nervous-system depressants."

- "Phenergan tablets and suppositories may lead to potentially fatal respiratory depression."

- "Use of Phenergan tablets and suppositories in patients with compromised respiratory function (i.e. -- e.g., COPD and sleep apnea) should be avoided."

- "Caution should be exercised when administering Phenergan tablets and suppositories to pediatric patients 2 years of age and older because of the potential for fatal respiratory depression."

- "Excessively large doses of antihistamines, including Phenergan tablets and suppositories, in pediatric patients may cause sudden death."

- "When given concomitantly with Phenergan tablets and suppositories, the dose of barbiturates should be reduced by at least one-half, and the dose of narcotics should be reduced by one-quarter to one-half."

10EHRR203-206.

4. Dr. Downs exhibited bias against Mr. Roberson instead of objectively considering the relevant facts and science.

389. Dr. Downs declined to "speculate" about the relevance of toxic levels of Phenergan/promethazine found in Nikki's system at the time of the autopsy. The Court notes that Dr. Downs was not, however, reluctant to speculate about his opinion that Nikki's condition had been "inflicted."

390. Dr. Downs testified at length about his opinion that Mr. Roberson kept "changing his story" about what had happened to Nikki. 10EHRR67. Yet the record is clear that Mr. Roberson never claimed to know what had happened and stated that

he had not witnessed the fall but only found Nikki on the floor after she had, seemingly, fallen out of bed. APPX7. To support hisview of Mr. Roberson's guilt, Dr. Downs testified at length about a timeline of events that was untethered to and often contrary to the record evidence. 10EHRR69-73. Dr. Downs also seemed to accept as fact, without objectivity, the hearsay report from the Bowmans about Nikki's condition the day before her collapse: "we know she was playing and seemed fine," 10EHRR73, even though this characterization of Nikki's condition is contrary to Nikki's medical records and the strong medications she had been prescribed.

391. Dr. Downs' lack of objectivity was evident throughout his testimony. For instance, he purported to judge Mr. Roberson's delay in getting Nikki to the hospital as indicative of guilt, which is not a medical judgment. Also, while doing so, Dr. Downs misrepresented the facts, stating that "at roughly 9:50" Mr. Roberson had called his girlfriend "instead of 9-1-1." 10EHRR87. Yet the hospital records show that Nikki was already intubated by 9:50 AM. APPX14.

392. Similarly, Dr. Downs invoked evidence of a "bloody rag and bloody pillow" found at the scene that he plainly did not investigate. 10EHRR63. The blood on these items amounts to a few spots that the lead detective acknowledged he would not have noticed but for Mr. Roberson showing them to the investigators. 7EHRR23-24; 7EHRR26; 41RR187.

393. Dr. Downs exhibited a similar lack of objectivity when he characterized a note in the medical records, made before the autopsy, stating that "father is going to face capital murder charges," was "relevant history." 10EHRR174-175.

394. Dr. Downs repeatedly insisted that he had not "manipulated" evidence—such as autopsy photographs and CT scans—while also admitting that he had adjusted the lighting, cropped them, and put pieces of different images together to construct new images for his own purposes. 10EHRR34; 10EHRR 37; 10EHRR64; 10EHRR80-81. His PowerPoint presentation, admitted as a demonstrative, included inflammatory materials of unknown source that have never been admitted into evidence and reflect a partisan agenda more than an attempt to provide the Court with the unvarnished truth. SX41. For instance, his PowerPoint related to this case did not address the fact that the autopsy found no evidence of any broken ribs, torso bruising, neck injuries, or skull fractures—all injuries associated with trauma (caused by shaking or impact). 10EHRR135.

5. Dr. Downs' conclusions regarding causation are internally inconsistent and inconsistent with contemporary scientific understanding.

395. Dr. Downs opined that he agreed with medical examiner Dr. Urban that Nikki died from multiple blunt force injuries and that the manner of death was homicide. 10EHRR22. Dr. Downs asserted that he and Dr. Urban were right about the cause of death because "all these physicians" when Nikki was hospitalized in

2002 reached "the same conclusion." 10EHRR62. Dr. Downs does not seem aware that the entire premise of this proceeding is that the scientific understanding that was used to convict Mr. Roberson has changed. Therefore, the fact that others in 2002 agreed with his and Dr. Urban's opinions is not relevant if their opinions are contrary to contemporary scientific understanding. The Court finds that the contemporary scientific understanding has changed considerably, as discussed at length above.

396. The Court also finds and concludes that Dr. Downs' opinions about the ultimate issue are burdened with inconsistences and exaggeration.

397. While Dr. Urban claimed to see evidence of three impact sites, Dr. Downs claimed that he could "clearly" see six impact sites on Nikki's head, yet he also referred to "eight" injuries. 10EHRR33; 10EHRR38; 10EHRR42. As he testified, the number of impact sites that he claimed to see increased. 10EHRR58. He eventually suggested that he believed that Nikki had been hit "multiple times" in the "same spot," but without those blows creating a corresponding external bruise. 10EHRR149.

398. Of the three impact sites to the head that Dr. Urban claimed to see, Dr. Downs admitted that there was no photograph of the impact site she claimed to see on the top of Nikki's head. 10EHRR35; 10EHRR178. He further admitted that the only impact site associated with any visible external marks/bruises was the "goose egg" captured in the CT scans at the back of Nikki's head. 10EHRR179. As noted

above, the Court finds and concludes that Dr. Downs is not a radiologist like Dr. Julie Mack who provided a credible report interpreting the head CT scans in this case as showing a single impact site at the back of the head. *See* APPX93.

399. Dr. Downs repeatedly agreed with Dr. Urban's interpretation of the subdural blood as proving the existence of distinct "impact sites" with darker blood being proof of different impacts. 10EHRR36; 10EHRR38; 10EHRR41; 10EHRR45; 10EHRR97. Yet during cross-examination, Dr. Downs admitted that the amount and location of subdural blood that Dr. Urban had observed during the autopsy would not have been the same as what was present when Nikki was admitted to the hospital. 10EHRR190.

400. Aside from the subdural blood, Dr. Downs relied on the presence of the two other components of the SBS triad: brain swelling and retinal hemorrhaging. Yet he resisted characterizing these three symptoms as a "triad." 10EHRR47. He asserted that no "responsible physician" has "ever" used the triad alone to diagnose SBS/AHT, claiming that would be "malpractice." 10EHRR121. Yet that was precisely the teaching of the American Academy of Pediatrics at the time of Mr. Roberson's trial. APPX22.

401. Dr. Downs argued that the triad is "common" in cases of childhood trauma, and therefore proves that inflicted trauma had occurred. 10EHRR99-100. But this is the "circular" reasoning that has been recognized as the problem at the

heart of the SBS phenomenon: that the presence of subdural hematoma, brain swelling, and retinal hemorrhage were considered proof that shaking had occurred and so cases in which these conditions were found were considered to prove that SBS/AHT had occurred. 4EHRR54-55; *see also* 8EHRR35.

402. While relying on the triad to diagnose "impacts" and trauma, Dr. Downs also admitted on cross-examination that other phenomenon can cause the triad, which he dismissed as "nothing new." 10EHRR146-147. But the Court finds that the rejection of the triad as a means to diagnose inflicted head trauma *is* new since Mr. Roberson's trial. *See, e.g.*, APPX29 (2009 position paper of American Academy of Pediatricians).

403. Dr. Downs, like Dr. Urban, cited the presence of retinal hemorrhages as proof of trauma and an example of a blunt force injury. 10EHRR43. Yet Dr. Downs also conceded that phenomena other than trauma can cause retinal hemorrhages. 10EHRR151.

404. Neuropathologist Dr. Auer explained at length that, when a person ceases to breath, hypoxia (oxygen deprivation) sets in and that can cause the triad of neurological conditions Nikki experienced: blood vessels leaking into the subdural space, edema or brain swelling from the increased intracranial pressure, and then retinal hemorrhages from the pressure on the optic nerve and eyes. *See* APPX110; APPX110A. Contrary to the expert opinions of Dr. Auer, whose research focuses on

hypoxia and its effect on the brain, Dr. Downs argued that hypoxia is caused *by* inflicted head trauma and insisted that "nothing else" explained Nikki's death. 10EHRR45; 10EHRR47; 10EHRR78; 10EHRR82; 10EHRR83; 10EHRR94. But Dr. Auer, the brain expert, explained that blows to the head do not cause a person to stop breathing but in fact have the opposite effect. When the head is injured through trauma, breathing accelerates. 8EHRR95-96.

405. Dr. Downs also endeavored to critique Dr. Auer, by arguing that it was not "logical" to suggest that blood was trapped in the subdural space because "there's no space for it;" yet both Dr. Downs and Dr. Urban relied on the presence of voluminous blood in the subdural space as proof of their multiple impact hypothesis. 10EHRR217-218. Therefore, the Court finds that it is Dr. Downs' critique that is not logical.

6. Dr. Downs was laboring under an interest in preserving the legitimacy of the SBS/AHT hypothesis.

406. It was established during the evidentiary hearing that Dr. Downs is affiliated with a "shaken baby" advocacy organization known as the "Shaken Baby Alliance" that, among other things, purports to teach prosecutors how to prosecute shaken baby cases. 10EHRR112-115. This organization, run by former Kindergarten teacher Bonnie Armstrong, counts Dr. Down's wife as a board member. *Id*. Dr. Downs admitted during cross-examination that this organization likely recommended him to the State in this case. *Id.* This organization exists, and its fund-

raising is premised on, the belief that SBS/AHT is a sound medical diagnosis. Therefore, the organization has an interest in seeing challenges to its reliability fail.

407. The Court finds and concludes that Dr. Downs' close affiliation with the "Shaken Baby Alliance" suggests a bias even though Dr. Downs, like Dr. Urban, initially endeavored to distance himself from the trial testimony that shaking was a mechanism that had contributed to causing Nikki's death. Dr. Downs, for instance, claimed that he had not used the term "shaken baby" "for years." 10EHRR118. Yet a 2017 brochure advertised Dr. Downs as a presenter at a "Shaken Baby Alliance" conference held years after the American Academy of Pediatrics had recommended dropping the term "shaken baby" because of the controversy surrounding the hypothesis. *See* APPX29.[53]

408. Dr. Downs admitted knowing that, in 2015, the American Academy of Forensic Sciences, the leading professional organization in his field, published an open letter criticizing SBS and its use in prosecutions because of its lack of "scientifically-conducted validation and forensic rigour." 10EHRR128. But Dr. Downs stated that he disagreed with the organization's official position with respect to SBS/AHT. 10EHRR123-128.

[53] Dr. Downs admitted during cross-examination that he was aware of the controversy surrounding both the use of "SBS" and the newer label "AHT." 10EHRR115; 10EHRR118; 10EHRR119.

409. Dr. Downs repeatedly stated that this was "not a shaking case" 10EHRR95-97; 10EHRR144. But he also affirmed his personal belief that "it is possible to shake a child to death without an impact." 10EHRR111. Dr. Downs further offered the personal belief that a toddler of Nikki's age (26 months) and size (28 pounds) could be violently shaken and sustain brain damage but no neck injury. He could not cite any current scientific evidence to support his personal beliefs. 10EHRR123; 10EHRR137; 10EHRR138; 10EHRR140. He simply "believe[s] it can happen." 10EHRR136.

410. After stating repeatedly that this was not a "shaking case," Dr. Downs then seemed to switch gears and opine that he believed Nikki's injuries were caused by shaking after all: "I think a shaking-type motion did occur here because I have multiple impacts, and that argues a back-and-forth motion in order to get repeated impacts." 10EHRR148. Also, once he was shown Dr. Squires' trial testimony stating that the presence of subdural blood "all over" is "indicative of shaking," he conceded entirely. Dr. Downs attested that Dr. Squires "sees more of these cases or saw more of these cases than I do." 10EHRR153-154. In other words, Dr. Downs seemed to ultimately defer to Dr. Squires as having superior expertise when she opined at trial that "the retinal hemorrhages are just further -- it's one more thing that really lets you know that those eyes were being shaken and that the blood vessels broke." 10EHRR154. Dr. Squires' trial opinion corresponds with basic premises of SBS that

have since been rejected, including the concept that shaking can cause blood vessels, including in the eyes, to break and cause subdural and retinal hemorrhage. As explained above, the Court has found that no valid science supports that hypothesis.

411. The Court finds and concludes that Dr. Downs' attempt to affirm SBS as a legitimate hypothesis while also insisting that "this is not a shaking case" and then changing his opinion while on the stand further undermines Dr. Downs' credibility.

412. For all of these reasons, the Court finds and concludes that Dr. Downs was not credible and his purported expert opinions were not reliable.

FINDINGS OF FACT REGARDING FALSE AND MISLEADING SEXUAL ASSAULT TESTIMONY

413. In this proceeding, Mr. Roberson adduced testimony for the first time from an expert demonstrating the false and misleading nature of the sexual assault testimony the State presented at trial through ER nurse Andrea Sims. As explained above, Sims claimed to be a certified SANE until, on cross-examination, she admitted that she was not actually certified. 41RR144.

414. The Court, relying on the expert testimony of experienced SANE and SANE trainer, Kim Basinger, finds and concludes that Nurse Sims' testimony was false and misleading.

A. Testimony of Kim Basinger

1. Nurse Basinger's qualifications

415. Kim Basinger is a registered nurse who specializes in trauma and is also a sexual assault nurse examiner or "SANE." 6EHRR60. She has been certified as a SANE through the Attorney General's Office of Texas to perform sexual assault exams on adults, adolescents, and children. She was among the first five nurses to receive the certification in 1998. She has been a SANE trainer for the Attorney General's Office since 2002, when she also became certified by the International Association of Forensic Nursing. 6EHRR61-62. She has performed approximately 400 SANE exams on adults and 800-900 on children. 6EHRR63. She attends many trainings and conferences and is often a presenter. Courts have accepted her as an

expert on SANE exams many times; and she has testified at the request of both the prosecution and the defense. 6EHRR66-67. *See also* APPX111 (Basinger CV).

416. The Court accepted Nurse Basinger as an expert in the standard of care that applies to SANE exams and in forensic nursing, without objection from the State. 6EHRR68.

417. The Court finds and concludes that Nurse Basinger was qualified to opine and that she was a credible witness.

2. Nurse Basinger's methodology

418. In preparing to opine in this case, Nurse Basinger reviewed the paperwork prepared by Nurse Sims related to her SANE exam of Nikki, Sims's trial testimony, and the photographs introduced into evidence at trial during Sims's testimony. 6EHRR65.

3. The basic standards that govern SANEs and SANE exams

419. Under Texas law, a SANE exam must be requested by law enforcement before it is undertaken. 6EHRR70. A SANE exam cannot be undertaken unless there is at least a suspicion of child abuse. 6EHRR82.

420. Nurse Basinger explained that a SANE exam generally starts with taking a history from the patient, regardless of age. And if the patient is unable to talk, then a history is obtained from any available collateral sources, including EMS, other nurses, and lay witnesses. 6EHRR69-70.

421. The ethics that are supposed to inform SANE exams, as with all nursing, starts with the principle to do no harm. 6EHRR80. Additionally, there is an obligation to stay "true to [one's] field" and keep up with research and advances in the field through training. 6EHRR80. The principle way that SANEs can keep up in their field is to become certified as a SANE. 6EHRR89-90.

422. Nurse Basinger explained the important distinction between "a certificate" on one hand, which merely indicates that one has attended a course, and "certification" on the other, which requires clinical experience and involves supervision. 6EHRR73.

423. A nurse can sign her name followed by an "RN" designation if she has that degree. Then, if one has specialty certifications, those will follow the signature on the same line; but to use the initials associated with certification, one has to have obtained the certification from the appropriate board. Taking a class will result in a "certificate," but that is insufficient to obtain "certification." 6EHRR73-74.

424. Nurse Basinger explained that it is misleading to sign one's name and then "SANE" on the same line if one is not in fact formally certified. 6EHRR74. Yet that is what Nurse Sims did on the SANE exam performed on Nikki on January 31, 2002. APPX6; 6EHRR126.

425. Nurse Basinger was clear that it is *not* the role of a SANE to decide if a sexual assault occurred. Instead, the primary concern is "to take care of the health

and welfare of the patient" and document whatever is observed. The obligation is to be an objective fact-finder, not to inject "personal opinions" into the process. Additionally, the primary focus is supposed to be on caring for the patient. 6EHRR81; 6EHRR83; 6EHRR84.

4. Nurse Basinger's opinions regarding Nurse Sims' trial testimony

426. Nurse Basinger explained that, for a nurse employed in a rural community like Palestine, doing a SANE exam on a two-year-old child would be a "rare thing." 6EHRR64. It is unclear if Nurse Sims had ever done a SANE exam on a child Nikki's age before because she was not asked about that experience at trial, her CV was not offered or admitted into evidence, and she did not ever obtain SANE certification, which would have involved keeping a record of her experience.

427. Nurse Basinger noted that Andrea Sims had not been a registered nurse for very long before January 2002 when she performed the SANE exam on Nikki. Sims had been an "LV" or licensed vocational nurse, which involves a one-year training program and only permits the individual to perform simply tasks that do not require critical thinking, like taking blood pressure. 6EHRR85. The Court finds that this information relevant to assessing Sims's credibility and qualifications was not before the jury.

428. According to Nurse Basinger's investigation, Sims took a SANE training right after she became an RN, yet the rules at the time in the State of Texas

and the International Association of Forensic Nursing required that a nurse had to have been an RN for at least two years before they could take the SANE training. 6EHRR86. Therefore, Sims either took a training before she was authorized to do so or she testified incorrectly about when she had first taken a SANE training. Moreover, she initially told the jury that she was a "certified" SANE, which was not true. On cross-examination, she admitted that she had never actually been certified. 41RR104; 41RR144.

429. At trial, Nurse Sims claimed that she had done approximately 200 SANE exams "in the course of [her] career as a SANE nurse." 41RR104. According to Nurse Basinger, despite her own expertise, she did not get to a volume like that in four years and, for instance, did "more like 12" exams a year initially. 6EHRR91-92. The Court finds it unclear whether Nurse Sims exaggerated her experience while testifying or if she had played some role in initiating a strikingly high number of SANE exams during the few yeas she had been a licensed RN. Either way, the Court finds that, in light of the context provided by Nurse Basinger, the sheer number of SANE exams that the uncertified Nurse Sims claims to have performed raises concerns about her credibility as well as her judgment.

430. The trial record established that Nurse Sims was on duty in the ER and part of the team doing triage on Nikki when she did her SANE exam. Nurse Basinger noted that this was "not best practice." 6EHRR95. The reason why it would not be

"best practice" is confirmed by Sims's own trial testimony describing Nikki's condition on January 31st when Nurse Sims was supposed to be providing care in the ER. Nikki was intubated at 9:50 AM, then CPR was performed to get her heart restarted, then the heartbeat was described as "tachycardia," which meant that the heart was beating too fast to counter the inadequate circulation of oxygenated blood. 41RR112; 6EHRR96-97. Then, at 10:10 AM, Nikki was taken to get a CT scan of her chest to ensure that the breathing tube had been properly inserted and, ultimately, the x-ray revealed that the tube had *not* been properly inserted and had to be pulled out and reinserted. 6EHRR97-98. At some point thereafter, before Nikki was transported to Dallas for further treatment, Nurse Sims did a SANE exam although Nikki had not been stabilized. 6EHRR99. The Court finds, based on Nurse Basinger's expert opinions, that because a SANE is supposed to prioritize patient care, undertaking a SANE exam under the circumstances suggests that Nurse Sims acted more as an adjunct of law enforcement than as a nurse.

431. Nurse Sims told the jury that she decided that Nikki had been "sexually assaulted" after she did the SANE exam. Yet, according to Nurse Basinger, that is a legal conclusion that SANE nurses are expressly trained *not* to offer. 6EHRR100-101.

432. As for Nurse Sims' testimony suggesting that she saw a bruise on Nikki's face that looked like a handprint, Nurse Basinger opined that the

photographs taken in the hospital after Nikki had been intubated show only light bruising on her face and nothing in the shape of a hand. 6EHRR103-104. More troubling, the pictures that were seemingly taken during the SANE exam show hands pulling on Nikki's buttocks, creating traction contrary to the way SANE nurses are trained because doing so affects dilation. 6EHRR105; 6EHRR107. The photographs, introduced into evidence during Sims' testimony, depict multiple hands pulling on Nikki's buttocks. And as Nurse Basinger pointed out, at least three of the hands in these photographs are not wearing gloves, contrary to basic practice among health-care providers. *See* SX21; SX22; *see also* 6EHRR105-106.

433. At trial, Nurse Sims had offered several bases to support her opinion that Nikki had been anally penetrated, none of which Nurse Basinger found to be sound.

434. First, Nurse Sims speculated that the dilation of Nikki's anus was not normal, yet Nikki was in a comatose state and thus was far from normal. As Nurse Basinger explained, when a patient has been intubated and given any sedatives or is unconscious, that process causes anal dilatation. Additionally, "[a]ny insult to the central nervous system, a head injury or a spinal cord injury, can cause the anus to relax and dilate"—and it was already obvious that Nikki had brain damage at the time Sims performed the SANE exam. 6EHRR108-109.

435. Second, Nurse Sims testified that she saw "anal laxity," which she asserted was caused by sexual assault. 6EHRR110. Yet, as Nurse Basinger explained, suppositories and enemas can cause anal laxity; and Nikki had received suppositories in the days before her collapse. 6EHRR110-112. Additionally, Nurse Basinger, after evaluating Sims' own photographs saw neither anal laxity nor even an indication of complete dilation. 6EHRR112.

436. Third, Nurse Sims testified that she saw "anal tears" and offered her belief that such tears are "only" caused by a sexual assault. Yet, as Nurse Basinger (and other healthcare providers who testified) recognized, the skin in the anal region is especially vulnerable to tearing. Nurse Basinger noted that many things can cause that area to tear: chronic constipation, passing hard-formed stool, and diarrhea. A child is especially vulnerable to tearing if, like Nikki, there was diarrhea over a period of time, which can cause "a lot of irritation down there"; that irritation then causes the skin to crack, *i.e.*, tear. 6EHRR116. From Sims's testimony, it was unclear if she had read Nikki's recent medical records and seen that she had had diarrhea for over a week before her hospitalization. 6EHRR120.

437. Fourth, Nurse Sims testified at trial about Nikki having a torn frenulum, which Sims described as another sign of sexual assault. Nurse Basinger explained that a frenulum is a small piece of skin, with one example being found where the upper lip connects to the gumline. 6EHRR122. But Nurse Sims had not even seen

the inside of Nikki's mouth because she was intubated and masked throughout the time Nurse Sims had any contact with her. Nurse Sims only learned that a torn frenulum was observed several days later during the autopsy. She then told the jury that intubation would not tear a frenulum. 41RR136-137. Nurse Basinger disagreed with Nurse Sims's insistence that a frenulum *cannot* be turn by intubation, explaining that, when intubated, the tube is held tightly against the patient's lip and, if rocked back and forth, can cause the frenulum to tear. Nurse Basinger opined that she has seen torn frenulums in intubation attempts, either from the tube or from the instrument that is used to be able to see the vocal cords, which is a metal blade attached to a flashlight-like handle. That metal blade goes in the mouth, over the tongue, and then is lifted up during the intubation process. 6EHRR123. Nurse Basinger's opinion rebuts Sims' opinion and is consistent with that provided by other medical experts in this proceeding. *See, e.g.,* 8EHRR113. Moreover, Nurse Basinger referred the Court to an article, "Diagnosing Abuse: A Systematic Review of Torn Frenulum and Other Intraoral Injuries." This medical article expressly notes that one of the things that can tear a frenulum is intubation and cautions against rushing to conclusions regarding abuse. 6EHRR124-125; APPX115.

438. Nurse Basinger noted that the results of the sexual assault exam that Nurse Sims had performed ultimately showed no semen, no spermatozoa, and no

trace evidence to support the conclusion that there had been some kind of sexual abuse. 6EHRR119.

439. Nurse Basinger further observed that Nurse Sims' testimony referencing "a pedophile" and how they do not want to go to a particular area of a child's body was inappropriate, especially since pedophilia is a psychiatric diagnosis that nurses are not qualified to make. 6EHRR122.

440. Overall, Nurse Basinger concluded that, if Nurse Sims had taken the SANE training, then she did not apply that training in this case and her conclusions were unreliable. 6EHRR125. Additionally, Nurse Basinger noted that Nurse Sims's SANE exam paperwork (APPX6) was replete with errors. 6EHRR126-130 (noting that Nurse Sims recorded Nikki's temperature as "9," described her cardiovascular system as "normal" although Nikki had stopped breathing and her resuscitated heart experienced tachycardia, described her neurological system as "normal" when she was brain dead and unresponsive). Nurse Sims also included in the paperwork a drawing that was an "overexaggeration" of the anal tears that she claimed to have seen. 6EHRR130.

441. For all of these reasons, Nurse Basinger concluded that the opinions that the jury heard from Nurse Sims regarding sexual abuse were not reliable, prejudicial, and were in fact false. 6EHRR130-131. The Court agrees.

FINDINGS OF FACT REGARDING STATE'S RELIANCE ON OPINIONS ABOUT MR. ROBERSON'S DEMEANOR AND PURPORTED "CONFESSION"

442. The Court finds and concludes that the State relied at trial and in this habeas proceeding on lay perceptions of Mr. Roberson's demeanor following his daughter's collapse to support the inference that Mr. Roberson was guilty of intentionally harming his daughter.

443. The Court further finds that the State has relied on this kind of evidence to argue that all of Mr. Roberson's new evidence regarding the cause of Nikki's death, even if true, does not establish that, "on the preponderance of the evidence the person would not have been convicted." TEX. CODE CRIM. PROC. art. 11.073(b)(2); *see also Ex Parte Chabot*, 300 S.W.3d 768, 772 (Tex. Crim. App. 2009) (requiring habeas applicant to establish that the State relied on false or misleading testimony at trial that was "material").

444. Because the State has relied on evidence of Mr. Roberson's demeanor and conduct extraneous to the alleged offense, including an alleged confession attested to only in the punishment phase of trial, the Court has considered evidence adduced in this habeas proceeding, on Mr. Roberson's behalf, to rebut the State's contention that such evidence is material.

A. The State's Reliance on Testimony Regarding Roberson's Demeanor

1. Trial testimony regarding Roberson's demeanor

445. As described above, at trial, the State adduced and relied on testimony from multiple witnesses regarding Mr. Roberson's flat affect and "odd" behavior in the wake of his daughter's collapse. *See, e.g.*, 41RR69; 41RR73; 41RR86; 41RR93; 41RR121-122. In this habeas proceeding, to provide further context, Mr. Roberson adduced testimony from the lead detective and one of the State's key trial witnesses, Brian Wharton, who had testified about his perception of Mr. Roberson's blunted and odd behavior at trial.

446. Detective Wharton described his memory of Mr. Roberson's demeanor as unemotional and detached and admitted that this bothered the law enforcement team and witnesses at the hospital. 7EHRR14-16. Detective Wharton testified specifically that he perceived Mr. Roberson's demeanor as "odd," "not normal," and that everyone on the law enforcement team thought there was something wrong with him. 7EHRR15. Detective Wharton also recalled that, when he asked Mr. Roberson if the officers could go to his house to see where Nikki had been injured, Mr. Roberson did not resist in any way; moreover, he consented to the search of his house and to giving statements to law enforcement without displaying any emotion. 7EHRR21-22; 7EHRR28. As an example of Mr. Roberson's "odd" behavior, Detective Wharton testified, as he had at trial, that Mr. Roberson had gone to the kitchen to make a sandwich while the detectives were searching his house. 7EHRR25. Detective Wharton further testified that Mr. Roberson's lack of a normal

affect never changed throughout the process, as if Mr. Roberson "was there, but he wasn't there[.]" 7EHRR20.

447. In this proceeding, Detective Wharton admitted that he had no experience with Mr. Roberson before the investigation of Nikki's death. He also testified that he did not know or learn anything during the course of the investigation about Mr. Roberson's family background or whether he any mental impairments or mental illness. 7EHRR18. Detective Wharton further acknowledged that, while working for the Palestine police department, he did not receive any training in recognizing signs and symptoms of mental illness. 7EHRR19.

2. Trial testimony regarding Roberson's purported confession

448. During this writ proceeding, beginning in its Answer, the State has argued that Mr. Roberson's "own expert" at trial "testified that the defendant told her that Mr. Roberson said that he lost it" and then shook Nikki. *See, e.g.*, 7EHRR46; 7EHRR62. More specifically, the State has relied on a "confession" allegedly obtained by a defense-retained trial expert, clinical psychologist Kelly Goodness, who testified during the punishment phase of Mr. Roberson's trial. The State has argued that an excerpt from Dr. Goodness's punishment-phase testimony regarding the purported "confession" from Mr. Roberson that he "shook" Nikki shows that he would have been convicted anyway. *See, e.g.*,,8EHRR163; 8EHRR165-166.

449. The precise trial testimony regarding this purported confession is as follows:

Q (defense counsel):	Did you talk to Robert about this offense?
A (Goodness):	Yes.
Q:	And did he give you an account of it?
A:	Yes.
Q:	What was that account?
A:	That he had lost it. That Nikki was crying and that he had shook her. That was one of his accounts. Let me back up a second. ***At first, he told me he didn't remember. And after I convinced him that was not going to fly with me, he then told me that he lost it.***

48RR24 (emphasis added).

450. The Court notes that, while testifying for the State, both Dr. Urban and Dr. Downs brought up "confessions" by perceived "perpetrators" as relevant to assessing whether a child had sustained inflicted injuries. 9EHRR118; 10EHRR13. Dr. Downs in particular purported to describe different "versions" of Mr. Roberson's "story" as a means to support his conclusion that Nikki's injuries had been "inflicted." 10EHRR66-68; 10EHRR87-88.

B. Mental-Health Expert's Assessment

451. To explain the behavior that Detective Wharton and others had deemed odd and inappropriate, and to challenge the reliability of the confession coerced by Dr. Goodness, Mr. Roberson presented a mental health expert, Dr. Diane Mosnik.

452. The Court finds and concludes that Dr. Mosnik was qualified to opine and her testimony was relevant in light of the State's reliance at trial, and in this habeas proceeding, on lay opinions regarding Mr. Roberson's affect as indicative of his guilt, and on the trial testimony of psychologist Dr. Goodness regarding the purported confession that she had obtained.

453. The Court further finds and concludes that Dr. Mosnik's testimony was credible.

1. Dr. Mosnik's qualifications

454. Dr. Diane Mosnik is a clinical neuropsychologist, forensic psychologist, and forensic neuropsychologist in private practice. 7EHRR64. She has been licensed since 2001 in Texas and a few years thereafter in Wisconsin. 7EHRR65; 7EHRR73. She was selected to participate in a special program for clinical neuropsychology at the Chicago Medical School with medical students where she was trained to read EEGs and neuroimaging, among other things. 7EHRR74-75. She has served as a professor at the Baylor College of Medicine, teaching medical students, neurology residents, psychiatry residents, psychology

interns and fellows; she has also worked in the Texas Medical Center. 7EHRR74; *see also* APPX123 (Dr. Mosnik's CV).

455. Dr. Mosnik has been accepted as an expert by state and federal courts in Texas and Wisconsin and has testified over 30 times. 7EHRR77. The Court accepted Dr. Mosnik as an expert in forensic neuropsychology and forensic psychology over the State's relevance objection. 7EHRR81.

2. Dr. Mosnik's methodology

456. Before forming any opinions, Dr. Mosnik reviewed many records, including Mr. Roberson's mental health records, medical records, TDCJ records, police records, trial transcripts describing his behavior, school records, and letters he had written. 7EHRR66; 7EHRR87.

457. Dr. Mosnik also conducted neuropsychological testing on Mr. Roberson and reviewed previous testing that had been performed by others. 7EHRR66. Dr. Mosnik administered tests specifically to evaluate behavior and compared Mr. Roberson's performance on those tests to a "normative database." She also tested for malingering and exaggeration. 7EHRR86.

458. Dr. Mosnik conducted interviews with collateral witnesses, including individuals who knew Mr. Roberson during his developmental period, *i.e.*, before he turned 18. 7EHRR83; 7EHRR88. She then undertook a "differential diagnosis," which she defined as "ruling in or out a variety of medical, neurological, and

psychiatric, and neurodevelopmental conditions" that could explain Mr. Roberson's behavior at the time of his daughter's death. 7EHRR76.

459. More specifically, Dr. Mosnik was asked to serve as an independent examiner and determine whether there was an appropriate diagnosis, in the mental health profession's Diagnostic and Statistical Manual, that would provide a medical explanation for what people had, at the time of Nikki's death, characterized as an inappropriate affect, odd or "not normal" behavior. 7EHRR67-68; 7EHRR 82.

3. Dr. Mosnik's conclusions and the basis for her expert opinions

460. Dr. Mosnik noted that Mr. Roberson's medical history included an "abundance" of documentation indicating that he had sustained "brain damage" and had "brain dysfunction." 7EHRR68.

461. After undertaking her independent assessment, Dr. Mosnik diagnosed Mr. Roberson as having Autism Spectrum Disorder, aka autism, after ruling out other potential diagnoses found in the Fifth Edition of the Diagnostic and Statistical Manual. 7EHRR76; 7EHRR91; 7EHRR93.

4. Dr. Mosnik's opinion that Roberson's Autism Spectrum Disorder explains his "odd" affect and behavior

462. Dr. Mosnik explained that autism is a "neurodevelopmental condition" that surfaces during the developmental period (before the age of 18) and continues throughout life. Dr. Mosnik explained that autism is not the same thing as mental retardation (now known as intellectual disability). People with autism have

significant deficits in the areas of social and emotional processing, social perception, and understanding social relationships. They also can exhibit repetitive movements, interests, and speech, and tend to have a strong preference for routine and a very structured, simplistic environment. 7EHRR101. These deficits had to have been apparent during the developmental period in order to make a diagnosis. 7EHRR93-95.

463. Dr. Mosnik described characteristics of people with autism that she observed in Mr. Roberson: impairment in social exchanges, in the ability to interpret facial expressions, and in the ability to express emotion in what is perceived as "normal" fashion. She also noted that people with autism often have body language that does not match their own emotion; it is not that they do not feel emotions, but the expression does not appear to the "outside world" as normal. 7EHRR98-99.

464. Dr. Mosnik explained that people with autism can easily get "off topic" and focus on minutia. 7EHRR101. Dr. Mosnik noted that Mr. Roberson, like many with autism, has an idiosyncratic speech pattern, and his speech and writing are characterized by a lot of repetition. 7EHRR107. Her testing revealed that Mr. Roberson's speech patterns were very stilted and simplistic. 7EHRR121. His writing is characterized by a very simplistic grammar and syntax except when he is copying technical information from other sources. 7EHRR152.

465. Dr. Mosnik's testing showed that Mr. Roberson had deficits in all categories relevant to an autism diagnosis and, overall, his social problem-solving was equivalent to that of someone 11.2 years old. 7EHRR105.

466. Dr. Mosnik reported reviewing the trial testimony of Kelly Gurganus, Robin Odem, Andrea Sims, Brian Wharton, and Teddie Cox, all of whom described their perception of Mr. Roberson's behavior as odd; Dr. Mosnik explained why they might have had these perceptions. 7EHRR110-127. Dr. Mosnik noted that laypeople who do not know anything about autism can interpret the behavior of someone with autism as inappropriate. 7EHRR111. People with autism are easily misjudged because their social behavior is inconsistent with "normal" expectations for various social contexts. 7EHRR114. As an example, Dr. Mosnik pointed to Mr. Roberson's attempt to dress an unconscious child instead of rushing to the hospital—a behavior that seems very atypical if one does not understand Mr. Roberson's deficits and how people with autism rely on routine and structure to function. 7EHRR116-117. Instead of emotional indifference, that behavior demonstrated Mr. Roberson's deficits in problem-solving and his reliance on routine. 7EHRR127.

467. In addition to reviewing the trial testimony describing Mr. Roberson's affect as "off," Dr. Mosnik also relied on testimony in the habeas evidentiary proceeding.

468. Dr. Mosnik cited Detective Wharton's testimony as providing an example of Mr. Roberson's significant impairments in the ability to show emotion that aligned with his feelings. 7EHRR121. She observed that "making a sandwich while police are investigating you is a very strange behavior," but when viewed through the lens "of autism, that is not unusual." 7EHRR122-123.

469. Dr. Mosnik also relied on the testimony in the writ proceeding of Casey Brownlow, who had known Mr. Roberson as a boy (thus during the "developmental period" relevant to assessing whether Mr. Roberson had a developmental disorder). Mr. Brownlow provided testimony regarding Mr. Roberson's behavior as a boy and then later in life when Mr. Brownlow reconnected with Mr. Roberson, which Dr. Mosnik found further confirmed her autism diagnosis.

470. Mr. Brownlow testified that he had met Mr. Roberson when they were in the seventh grade. They were in the same class in school in Palestine. 7EHRR49-50. Mr. Brownlow's relationship with Mr. Roberson was largely limited to making eye contact with him in the hall. Mr. Brownlow explained that their exchanges were limited because Mr. Roberson was not part of the rest of the close-knit group that hung out socially, he was "an outsider." 7EHRR50-53. Mr. Brownlow described Mr. Roberson as "different from the rest of us," "almost like Forrest Gump." 7EHRR51. He was also treated differently, pushed around and bullied. 7EHRR51-52. Mr. Brownlow never saw Mr. Roberson fight back or do anything "[o]ther than just

taking it." 7EHRR52. Mr. Brownlow further noticed that Mr. Roberson was "disheveled when he came to school[.] . . . His clothes at times didn't look clean, and he would oftentimes have bruises that you could see." 7EHRR55.

471. Mr. Brownlow explained that he lost track of Mr. Roberson when Roberson dropped out of school at some point during high school. 7EHRR53. Many years later, Mr. Brownlow reconnected with Mr. Roberson and they exchanged some letters. Mr. Brownlow described Mr. Roberson's letters as like those he "would get from his sons from summer camp. . . . Smiley faces at the end of sentences. Sad faces at the end. Very childlike. Very childlike. Sweet in an innocent kind of way." 7EHRR56-57. Mr. Brownlow also noted that all of Mr. Roberson's letters were very similar and repetitious. 7EHRR57.

472. Dr. Mosnik cited Mr. Brownlow's testimony as corroborating other information she had learned from interviewing family members: that Mr. Roberson had limited friendships and had been bullied and teased at school and pushed around in the school setting. 7EHRR89. She also learned from his mother that Mr. Roberson was delayed in his speech, required speech therapy, and had engaged in repetitive behaviors as a child. *Id.*

5. Dr. Mosnik opined that the confession that Dr. Goodness obtained from Roberson was coerced, unethical, and unreliable.

473. Dr. Mosnik was also asked to assess the testimony and methodology of defense-retained trial expert, Dr. Kelly Goodness. 7EHRR85. Dr. Mosnik identified

six different bases for concern about Dr. Goodness's approach to Mr. Roberson and and her assessment of him.

474. First, Dr. Goodness lacked relevant experience. At the time of Mr. Roberson's trial, Dr. Goodness had only completed her degree a few years earlier. 7EHRR130. Her degree was in psychology; she was not a neuropsychologist and thus not trained to do the neuropsychological testing that she purported to do. 7EHRR130-131.

475. Second, Dr. Mosnik explained that the testing Dr. Goodness purported to do, without having the appropriate training, raised ethical concerns because it violated both the standard of care and the practice, as ordinary psychologists are *not* trained to interpret tests of brain functioning but *are* trained not to go beyond their area of expertise. 7EHRR131.

476. Third, with her testimony, Dr. Goodness violated basic training regarding the limits of forensic psychology. Dr. Mosnik explained that the ethical guidelines for the field of forensic psychology, the field in which Dr. Goodness was reputedly trained, directs that the forensic examiner must exercise "extreme caution" when reporting any evidence or information that could be incriminating against the defendant/client. Unless specifically asked to assess "not guilty by reason of insanity" or "not guilty by reason of mental disease or defect," forensic psychologists are not to ask questions about guilt or innocence because they are not

investigators. 7EHRR133. Dr. Mosnik opined that testifying about a "confession" that Dr. Goodness herself had unethically coerced was itself unethical. 7EHRR134.

477. Fourth, Dr. Goodness claimed to have reviewed Mr. Roberson's medical records, yet she did not discuss the complete absence of evidence of aggressive behavior in the information available to her (although she had been retained to assess whether Mr. Roberson would be a danger in the future). 7EHRR134. Dr. Mosnik found no evidence in Mr. Roberson's voluminous records that he had a history of aggressive or violent acts. 7EHRR128-129. Although accusations were made at trial by his ex-wife, there were no records corroborating any of her allegations (and, instead, there was evidence that she had lost custody of the children they had had together). *Id*.

478. Fifth, Dr. Goodness seemed unaware that Mr. Roberson was an individual highly susceptible to suggestion, pressure, coercion; instead, she boasted that "I told him this isn't going to fly with me" thereby admitting that she had pressured a client to change his answers in response to her coercive questioning. 7EHRR134-136. This conduct is especially troubling since Dr. Goodness does not seem to have considered Mr. Roberson's autism. And, as Dr. Mosnik explained, individuals with autism are very compliant and tend to agree with what people say to them. Because they have an elevated degree of suggestibility, they are more vulnerable to changing their story to please the examiner. 7EHRR136.

479. Sixth, even as Dr. Goodness testified about how she had coerced Mr. Roberson into changing his story, she admitted that he was a "poor historian"—clearly indicating that she knew of his vulnerability with respect to remembering accurately, and yet disregarded that vulnerability. 7EHRR137.

480. For all of these reasons, Dr. Mosnik concluded that Dr. Goodness's testimony regarding the "confession" that she had coerced from Mr. Roberson was not relevant or reliable with respect to ascertaining his guilt. Dr. Mosnik opined that coercing a "confession" to use against a highly impaired and vulnerable client is contrary to the professional standards of forensic psychology. 7EHRR137.

481. The Court finds and concludes that Dr. Mosnik's assessment is convincing and demonstrate that reliance on evidence of Mr. Roberson's demeanor, "odd" affect, and purported confession is unreasonable.

C. Additional Reasons for Rejecting the State's Reliance on the Purported "Confession"

482. The Court further finds and concludes that Dr. Goodness was a punishment-phase witness who was asked by defense counsel to assess Mr. Roberson and then testify based on the *assumption* that Nikki had died as a result of shaken baby syndrome. The face of the trial record demonstrates that defense counsel accepted, without adversarial testing, that SBS, generally, was a legitimate hypothesis and, specifically, was the only reasonable explanation for Nikki's death.

See, e.g., the following statements made by **defense counsel** at trial, notwithstanding Mr. Roberson's not-guilty plea:

- "This is, however, unfortunately a shaken baby case. The evidence will show that Nikki did suffer injuries that are totally consistent with those applied by rotational forces more commonly known as shaken baby syndrome." 41RR57-58.

- "this child did not die from a fall of 22 inches." 41RR60.

- "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." 41RR61.

Because defense counsel was convinced that SBS explained Nikki's death, the experts that defense counsel retained, including Dr. Goodness, were asked to presume that Mr. Roberson had caused Nikki's death by violently shaking her. Moreover, by the time defense punishment-phase witnesses, including Dr. Goodness, testified, the jury had already found Mr. Roberson guilty, which required accepting the validity of the State's SBS/AHT causation theory.[54]

483. Based on the Court's findings that new science renders the SBS/AHT hypothesis unreliable, the Court finds and concludes that defense-retained,

[54] The Court notes that the State, in its questioning of some witnesses in this proceeding, relied on testimony obtained from other punishment-phase trial witnesses, such as Mr. Roberson's ex-wife, about extraneous offenses, seemingly to imply that he was capable of the requisite intent to commit the offense that was at issue in the guilt phase of trial. Putting aside questions about the reliability/credibility of those witnesses, the Court finds that such evidence is irrelevant to the issues raised in this proceeding and would not be admissible under the Texas Rules of Evidence in the guilt-phase of new trial. *See* TEX. R. EVID. 404(a) & (b).

punishment-phase trial expert Dr. Goodness was operating under the incorrect assumption that Mr. Roberson had caused Nikki's death by shaking her violently, and based on that incorrect assumption, coerced a "confession" from him that is itself unreliable and contrary to the current scientific understanding of the natural and accidental factors that likely caused Nikki's death.

484. The Court further finds and concludes that, even if it were true that Mr. Roberson responded to Dr. Goodness's coercion with a confession that he may have "lost it" and "shook Nikki," that would not, according to neuropathologist Dr. Auer, be worthy of consideration "because shaking isn't a mechanism of brain damage." 8EHRR166; *see also* 8EHRR176 (Dr. Auer agreeing that, even if an individual had confessed to shaking, to climbing Mount Everest, or to anything else, that would not determine how one should apply science to the interpretation of microscopic slides or autopsy photographs).

485. The Court further finds that confessions by caregivers should not be considered useful data points in assessing cause of death, especially in light of the studies that have addressed their patent unreliability. 8EHRR177. *See also*, *e.g.*, Deborah Tuerkheimer, FLAWED CONVICTIONS: "SHAKEN BABY SYNDROME" AND THE INERTIA OF INJUSTICE, 99-101 (Oxford Univ. Press 2014) (former prosecutor analyzing role of induced confessions from caregivers in SBS wrongful convictions); Richard Leo, *False Confessions: Causes, Consequences, and*

Implications, JOURNAL OF THE AMERICAN ACADEMY OF PSYCHIATRY AND THE LAW, Vol. 37, Issue 3 (Sept. 2009) (explaining that coerced confessions "are consistently one of the leading, yet most misunderstood, causes of error in the American legal system and thus remain one of the most prejudicial sources of false evidence that lead to wrongful convictions" and analyzing the empirical research on the causes of false confessions). *See also Aleman v. Vill. of Hanover Park*, 662 F.3d 897, 907 (7th Cir. 2011) (finding confession obtained from a caregiver under intensive questioning about whether the child may have been shaken to death was "worthless as evidence, and [as] a premise for arrest.").

486. Moreover, even the medical examiner who performed the autopsy, Dr. Urban, retreated from her trial testimony that shaking had caused Nikki's condition. *See* 9EHRR117; 9EHRR204; 9EHRR208 ("I don't know that there is a shaking component here."). Additionally, the State's retained expert, Dr. Downs, repeatedly attested that, although he continues to believe that shaking can cause brain damage absent evidence to support the hypothesis, he does not believe there was shaking in this case. 10EHRR95-97; 10EHRR144. 10EHRR111; 10EHRR136.[55] The State cannot reasonably argue now that shaking did *not* cause Nikki's death after all and

[55] The Court also notes, as explained above, that Dr. Downs retreated from his insistence that this is "not a shaking case" after he was presented with Dr. Squires' trial testimony asserting that shaking was, in her opinion, the primary mechanism of injury. That shift on the stand is one of several reasons the Court has found Dr. Downs' opinions to be unreliable.

yet a purported confession to shaking is relevant to establishing Mr. Roberson's guilt.

487. Due to the findings explained above, the Court concludes that the State's reliance on (1) Mr. Roberson's affect and behavior following the crime and (2) a purported "confession" obtained from a punishment-phase witness based on a presumption that Nikki had been shaken to death is not reasonable. The Court further concludes that, were the State to endeavor to rely on such evidence in a new trial, a motion in limine under Texas Rules of Evidence 401 and 403 would be granted to keep such evidence out as irrelevant or at least as more prejudicial than probative. Additionally, a *Daubert* motion would likely be granted due to the unreliability of Dr. Goodness's opinion about a confession coerced contrary to her own profession's ethical standards. Additionally, the Court finds that, were such evidence admitted, that would open the door to permit Mr. Roberson to adduce evidence in the guilt phase of his Autism Spectrum Disorder that would be exculpatory.

CONCLUSIONS OF LAW AS TO APPLICANT'S CLAIMS

I. CLAIM ONE: NEW SCIENTIFIC EVIDENCE ESTABLISHES BY A PREPONDERANCE OF THE EVIDENCE UNDER ARTICLE 11.073 THAT ROBERT ROBERSON WOULD NOT HAVE BEEN CONVICTED.

488. Claim One arises under Article 11.073 of the Texas Code of Criminal Procedure. Article 11.073 is a legal basis that was unavailable when Mr. Roberson filed his previous writ applications in 2004 and 2005. Additionally, the Court of Criminal Appeals has already held in this case that Mr. Roberson has satisfied Article 11.071 § 5(a)(l). That is, the Court of Appeals has already recognized that Mr. Roberson could not have alleged his "new science" claim in his previous writ applications, because the legal basis for such claims created by Article 11.073 did not yet exist and thus was legally unavailable. *See* TEX. CODE CRIM. PROC. art. 11.071, § 5.[56] The Court further concludes that Mr. Roberson has adduced more than sufficient evidence to establish his right to relief under Claim One.

A. Legal Standard

489. Article 11.073 provides that a court may grant a convicted person habeas relief if:

(1) the convicted person files an application, in the manner

[56] Because Article 11.073 went into effect after Mr. Roberson's initial and *pro se* subsequent writ applications were filed, the relevant date for determining whether the new science was ascertainable is the date of his trial (2003), not the date of his previous state habeas applications. In the present case, however, the choice between the two potentially applicable dates (2003 v. 2005) does not control the outcome; the evidence establishes that the relevant new scientific evidence was not available even by the later date.

provided by Article 11.07, 11.071, or 11.072, containing specific facts indicating that:

(A) relevant scientific evidence is currently available and was not available at the time of the convicted person's trial because the evidence was not ascertainable through the exercise of reasonable diligence by the convicted person before the date of or during the convicted person's trial; and

(B) scientific evidence would be admissible under the Texas Rules of Evidence at a trial held on the date of the application; and

(2) the court makes the findings described by Subdivisions (1)(A) and (B) and also finds that, had the scientific evidence been presented at trial, on the preponderance of the evidence the person would not have been convicted.

TEX. CODE CRIM. PROC. art. 11.073(b).

490. Subsection (d) further provides:

In making a finding as to whether relevant scientific evidence was not ascertainable through the exercise of reasonable diligence on or before a specific date, the court shall consider whether the field of scientific knowledge, a testifying expert's scientific knowledge, or a scientific method on which the relevant scientific evidence is based has changed since:

(3) the applicable trial date or dates, for a determination made with respect to an original application; or

(4) the date on which the original application or a previously considered application, as applicable, was filed, for a determination made with respect to a subsequent application.

491. In determining whether the relevant scientific evidence was not

reasonably ascertainable before or during Mr. Roberson's trial, the Court must consider "whether the field of scientific knowledge, a testifying expert's scientific knowledge, or a scientific method on which the relevant scientific evidence is based" has changed. TEX. CODE CRIM. PROC. art. 11.073(d). "Scientific knowledge" includes:

> Knowledge that is grounded on scientific methods that have been supported by adequate validation. Four primary factors are used to determine whether evidence amounts to scientific knowledge: (1) whether it has been tested; (2) whether it has been subjected to peer review and publication; (3) the known or potential rate of error; and (4) the degree of acceptance within the scientific community.

Robbins II, 478 S.W.3d at 691-692 (quoting BLACK'S LAW DICTIONARY 1004 (10th ed. 2014)). "Scientific method" means "[t]he process of generating hypotheses and testing them through experimentation, publication, and republication." *Id.* at 691 (quoting BLACK'S LAW DICTIONARY 1547 (10th ed. 2014)).

492. As the Court of Criminal Appeals has explained, Article 11.073 encompasses claims based on both "bad science" and "bad scientists." "'Bad science' and 'bad scientists' are inseparable. A scientist may not intend to present bad science, nor must that scientist be a bad scientist in every situation. . . . The result of inexperience or out-dated knowledge may be testimony that may rightfully be called bad science, even if not intentionally so, and that testimony may persuade a jury to convict when it should not." *Robbins II*, 478 S.W.3d at 693 (Johnson, J., concurring). As such, the legislature "enact[ed] Article 11.073 without any express

limitation on what constitutes 'scientific knowledge' [.]" *Ex parte Robbins*, 560 S.W.3d 130, 161 (Tex. Crim. App. 2016) ("*Robbins III*") (Newell, J., concurring).[57]

B. The Court Finds and Concludes That Claim One Is Meritorious

493. The Court finds and concludes that Mr. Roberson has satisfied the three elements of this claim.

1. Relevant scientific evidence has been adduced that was not available at the time of Roberson's trial through the exercise of reasonable diligence before or during his trial.

494. The new scientific evidence was not available in part because the relevant fields of scientific knowledge have changed since Mr. Roberson's 2003 trial. The Court notes that, when Mr. Roberson's subsequent writ application was filed in 2016, the Court of Criminal Appeals had already acknowledged a sea change in the medical consensus regarding the validity of SBS/AHT diagnosis. *See, e.g.*, *Ex parte Henderson*, 384 S.W.3d 833, 833-34 (Tex. Crim. App. 2012) (remanding for new trial where developments in the science of biomechanics led the medical examiner who had testified at trial to attest that he now believes "there is no way to determine with a reasonable degree of medical certainty whether [the decedent's] injuries resulted from an intentional act of abuse or an accidental fall"); *Ex parte*

[57] *See also Robbins II*, 478 S.W.3d at 706 ("Regardless of whether a conviction is based on an unreliable field of science *or* unreliable scientific testimony, the result is the same: an unreliable verdict that cannot stand the test of time. It is built upon the shifting sands of 'junk' science or a 'junk' scientist, and it is the purpose of Article 11.073 to provide a statutory mechanism for relief and a retrial based upon 'good' science and 'good' scientific testimony.") (Cochran, J., concurring).

Vasquez, WR-59, 201-03 (Tex. Crim. App. Mar. 23, 2016) (unpublished) (granting stay and later remanding for trial court to review the merits of claims that, *inter alia*, new scientific evidence regarding cause of death of four-year-old contradicted evidence the State relied on at trial); *cf. Robbins II*, 478 S.W.3d 678 (finding male caretaker convicted of capital murder of a child was entitled to habeas relief based on new science on short falls that was not available at the time of trial).[58]

495. Additionally, in this proceeding, Mr. Roberson adduced considerable evidence regarding how the SBS/AHT hypothesis emerged absent evidentiary support, how the specific premises of the SBS/AHT hypothesis have since been falsified, and how a contemporary scientific understanding exposes numerous errors in the autopsy undertaken by a relatively inexperienced medical examiner.

496. Mr. Roberson has presented relevant scientific evidence that the State's theory of causation (SBS/AHT) is unreliable and lacks scientific validity. Mr. Roberson has also presented contemporary scientific evidence, that Nikki's death was actually caused by her undiagnosed interstitial viral pneumonia in conjunction with prescription drugs that depressed her respiratory system and a short fall that likely caused the single impact visible in CT scans taken soon after her collapse,

[58] The Texas Legislature was motivated to enact Article 11.073 in part to address concerns about the scientific integrity of criminal convictions raised in cases like *Ex parte Robbins*, 478 S.W.3d 678, 695-696 (Tex. Crim. App. 2014), reh'g denied sub nom. *Ex parte Robbins*, WR-73,484-02, 2016 WL 370157 (Tex. Crim. App. Jan. 27, 2016) (unpublished) (J. Cochran, concurring).

none of which the medical examiner considered. This evidence falls within the scope of Article 11.073 and was not available before or during Mr. Roberson's trial.

497. Moreover, the new evidence concerning the unreliability of Dr. Urban's autopsy is directly relevant to the scientific validity and reliability of the State's trial and post-conviction theories of cause and manner of death. Therefore, the evidence adduced in this proceeding relates to both "bad science" and "bad scientists," and concerns changes in scientific knowledge, scientific methods, as well as the scientific knowledge of the particular causation experts (Dr. Urban and Dr. Squires) who testified for the State at trial.

2. The new scientific evidence would be admissible under the Texas Rules of Evidence.

498. The new scientific evidence would be admissible under the Texas Rules of Evidence at a trial held on the date in 2016 when Mr. Roberson filed his subsequent application for habeas relief. Specifically, the evidence would be admissible to support a challenge to the reliability and admissibility of Dr. Urban's autopsy results and to the causation testimony that she and child abuse expert Dr. Squires provided on the State's behalf at trial. *See* TEX. R. EVID. 702, *Daubert v. Merrell Dow*, 509 U.S. 579 (1993); *Kelly v. State*, 824 S.W.3d 568, 573 (Tex. Crim. App. 1992).

499. The evidence Mr. Roberson has presented in support of Claim One is directly relevant and would be admissible at a new trial to challenge the admissibility

of the State's theory of causation presented at trial as well as to challenging the State's new evidence in this proceeding from medical examiner Jill Urban and retained expert Dr. Downs. Mr. Roberson adduced evidence attacking the reliability of the autopsy, Dr. Urban's experience, and her trial and post-conviction testimony, and that evidence would be admissible, as it implicates all prongs of a *Kelly*/*Daubert* challenge.

500. The new evidence would also be admissible through cross-examination of any of the State's witnesses, including Dr. Downs or any similar expert, or through affirmative evidence adduced through defense experts similar to Drs. Ophoven, Plunkett, Bonnell, Monson, Wigren, and Auer.

3. Roberson has established that, by a preponderance of the evidence, but for the discredited science, he would not have been convicted.

501. If the new scientific evidence adduced in this proceeding had been available to Mr. Roberson during his 2003 trial, he would not have been convicted of capital murder. Several features of this case make the SBS diagnosis particularly unreliable. The current scientific consensus is that violent shaking would generally break a child's neck—and that SBS will virtually never cause the death of a toddler unless that child's neck is broken. Nikki's neck was entirely free of injury. The current scientific consensus also rejects the notion that SBS can be used as an exclusionary diagnosis; research, testing, and new discoveries have unearthed a slew

of alternative causes of the triad, from undetected congenital defects to contracted illnesses to hypoxia and ischemia. None of this research was available during Mr. Roberson's trial.

502. In making the inquiry under Article 11.073(b)(2) of the Texas Code of Criminal Procedure, this Court may consider the existence of other evidence incriminating the applicant and the extent to which the State emphasized, at trial, the evidence now called into question. *Robbins II*, 478 S.W.3d 692 (finding 11.073(b)(2) satisfied where the medical examiner's discredited testimony was the only evidence that conclusively established cause of death and the State "also emphasized her testimony in its closing statement"); *Ex parte Steven Mark Chaney*, 563 S.W.3d 239 (Tex. Crim. App. 2018) (granting relief under Article 11.073 based on invalidated bitemark evidence where the State's case would have been "incredibly weakened" had the new scientific evidence been presented at trial, where the prosecution had emphasized the bitemark evidence in its closing argument, and where, during a motion for new trial hearing, one juror testified that the bitemark evidence was "what did it for her").

503. The Court should consider the new habeas evidence "in light of the totality of the record," to assess the effect it would have had at trial. *See*, *e.g.*, *Ex parte De La Cruz,* 466 S.W.3d 855, 871 (Tex. Crim. App. 2015) (instructing that materiality of false evidence claim should be assessed based on the totality of the

record). That "totality" would include the sexual assault testimony presented at trial and Mr. Roberson's challenges to the reliability and credibility of that and other trial evidence. *See Ex parte Kussmaul et al*, 548 S.W.3d 606, 623-27 (Tex. Crim. App. 2018) (granting relief under Art. 11.073 based on new DNA testing, where applicant also presented evidence challenging the reliability of the co-defendants' confessions); *Chaney*, 563 S.W.3d at 274 (assessing materiality of *Brady* claim cumulatively with evidence presented in support of Art. 11.073 claim).

504. The Court may also consider the effect that the new scientific evidence would have had on defense counsel's strategy at trial. *See Kussmaul*, 548 S.W.3d at 623-27 (considering the testimony of trial counsel that had he known about the exculpatory DNA results, he would not have advised his client to take a guilty plea); *see also Thomas v. State*, 841 S.W.2d 399, 406 (Tex. Crim. App. 1992) (considering, in deciding materiality of *Brady* claim, how the absence of certain evidence might have "affected the preparation and presentation" of the defense case); *Ex parte Mares*, No. 76,219, 2010 WL 2006771 (Tex. Crim. App. May 19, 2010) (not designated for publication) at *8 (deciding whether *Brady* violation was material by considering, *inter alia*, whether "applicant would have adopted a different defense strategy" if the suppressed evidence had been disclosed). It is uncontested that the defense at trial *conceded* that this was a "classic" case of SBS and did not challenge the State's causation theory in any way.

505. Finally, while the Court's assessment must be based on the totality of the record, it necessarily focuses on the new evidence that Mr. Roberson could have presented at trial, ***not*** on other evidence the State could develop or present at a retrial (*e.g.*, testimony such as that from Dr. Downs). This is because Article 11.073 only applies to evidence that "was not available to be offered ***by a convicted person*** at the convicted person's trial" or that "contradicts scientific evidence relied on by the state at trial." TEX. CODE CRIM. PROC. art. 11.073(a). Therefore, "[t]he test for materiality under Article 11.073(b)(2) does not factor in what the State could have presented." *Robbins III*, 560 S.W.3d at 149-150 (Richardson, J, concurring). "The test under the statute is whether, had the scientific evidence . . . been presented ***at trial,*** on the preponderance of the evidence Applicant would not have been convicted." *Id*.

506. The relevant materiality standard is far less onerous than the clear and convincing standard that applies to Actual Innocence claims. The standard may be satisfied even where the record contains some evidence that the jurors could view as incriminating. *See Kussmaul*, 548 S.W.3d at 641 (granting relief under Article 11.073 but not on actual innocence grounds, where other incriminating evidence included fiber comparison evidence, firearms and toolmark identification evidence, eyewitness testimony that the co-defendants were seen with the victims on the night of the crime, and the co-defendant's confessions which were of questionable

reliability but could not be "completely discredit[ed]").

507. As detailed above, whatever shift in focus the State has elected to make in this proceeding, the trial was plainly based on an SBS/AHT causation theory. The only "new" evidence the State mustered was from Dr. Downs, who endeavored to bolster Dr. Urban's "multiple impacts" opinion that is contradicted by the CT scans. And as explained at length above, Dr. Downs was not a credible or consistent witness.

508. The Court finds that in light of the numerous problems with the State's causation theory at trial and the numerous errors associated with the autopsy of Nikki Curtis, Mr. Roberson has more than satisfied the standard to show that, by a "preponderance" of all the evidence, he would not have been convicted.

509. SBS/AHT was the linchpin of the State's case. As Detective Wharton testified in this proceeding, the shaking baby hypothesis arose before Nikki was even transported from Palestine Regional to Children's Hospital in Dallas; and no other explanation for Nikki's condition was ever offered by or to law enforcement other than shaken baby syndrome. 7EHRR31-32. Law enforcement did not investigate Nikki's social or medical history or any other possible cause of death. 7EHRR31. Instead, they relied on the medical expertise offered first by child abuse expert Dr. Squires, which was obtained before the autopsy was even performed and utilized to obtain an arrest warrant. Additionally, the State relied on autopsy findings of the

medical examiner, Jill Urban. These two medical doctors were the only experts to testify about the cause of Nikki's death at trial; and both opined relying on the SBS/AHT hypothesis that was, at the time of trial, accepted as medical orthodoxy. Additionally, "shaken baby" was discussed with virtually every member of the venire panel, raised as the State's theme in Opening Statements, raised with numerous fact witnesses, and relied on in the State's Closing and Rebuttal Arguments.

510. All of the State's medical witnesses at trial expressly rejected the concept that a short fall could have played any role in Nikki's death or that her recent illness or medical history were relevant to understanding her condition.

511. Multiple aspects of the State's SBS/AHT case are not only inconsistent with contemporary scientific understanding, but the investigation overlooked numerous other potential causes of Nikki's condition developed for the first time in this habeas proceeding.

512. Without the State's unreliable causation evidence from medical personnel and its causation experts Drs. Squires and Urban, the State had only testimony based on unsound presumptions about Mr. Roberson's demeanor and his conduct toward Nikki from patently unreliable lay witnesses. For instance, the State asked questions and elicited testimony at trial about Mr. Roberson taking time to dress Nikki before driving to the hospital. The State also asked questions and elicited

questions about Mr. Roberson's emotional affect in the hospital and how he responded to questions from law enforcement. *See, e.g.*, 41RR69; 41RR73;41RR 86; 41RR93; 41RR121-122. Even if this kind of testimony were deemed properly admissible, Mr. Roberson adduced new evidence of his Autism Spectrum Disorder that effectively rebuts any inference that this behavior should be construed as evidence of guilt.

513. The State also relied extensively on false and misleading testimony that Nikki had sustained a sexual assault to permit an inference that Mr. Roberson had the requisite intent to harm Nikki. Because the Court has determined that the sexual abuse testimony was false and misleading, the Court must also find that the State's guilt-phase case was not only quite weak but built upon a highly prejudicial, yet entirely baseless, argument-by-distraction.

514. Without the medical/scientific evidence, the State had no credible case that Mr. Roberson had intentionally harmed Nikki, let alone caused her death. The State has not mustered any credible evidence as to why its reliance on SBS at trial should be overlooked, why the errors in the autopsy are immaterial, or why Dr. Urban's multiple impact theory, which is contradicted by the CT scans, all other credible experts, and by common sense, should be considered significant enough to warrant discounting all of the new evidence establishing that Nikki Curtis died of an undiagnosed pneumonia with accidental elements arising from the prescription

drugs in her system and a short fall that likely caused the single impact site or "goose egg" on the back of her head.

515. Accordingly, based on the totality of the record and the factual findings made above, the Court finds, by at least a preponderance of the evidence, that had the new scientific evidence been available at trial, Mr. Roberson would not have been convicted.

C. Conclusions as to Claim One

516. Based on the availability of new science and the factual findings and conclusions set forth above, the Court concludes that Robert Roberson is entitled to habeas relief and should receive a new trial.

517. This Court recommends granting relief under Claim One.

II. CLAIM TWO: BECAUSE THE STATE RELIED ON FALSE, MISLEADING, AND SCIENTIFICALLY INVALID TESTIMONY, ROBERT ROBERSON'S RIGHT TO DUE PROCESS UNDER *EX PARTE CHABOT* AND *EX PARTE CHAVEZ* WAS VIOLATED.

518. The Court finds and concludes that Mr. Roberson's conviction was obtained in reliance on false testimony that was material. The Court further finds and concludes that Claim Two was not available to him when his previous habeas applications were filed (in 2004 and 2005) because the legal basis for the claim was not recognized until 2009 and his claim is also based on new evidence not discoverable in 2004-2005. *See Ex parte Chabot*, 300 S.W.3d 768, 772 (Tex. Crim. App. 2009). Moreover, the Court of Criminal Appeals has already found that Claim

Two satisfied the threshold requirements of section 5(a) of Article 11.071. The Court now concludes that Mr. Roberson has adduced more than sufficient evidence to satisfy Claim Two.

A. Legal Standard

519. The Due Process Clause of the Fourteenth Amendment prohibits the State from using false testimony to convict or sentence a defendant. *Napue v. Illinois*, 360 U.S. 264, 269 (1959); *Giglio v. United States*, 405 U.S. 150, 153-54 (1972). In *Ex Parte Chabot*, the Court of Criminal Appeals held that a conviction secured by false evidence violates due process, even if the State neither knew nor should have known that the evidence as false. 300 S.W.3d 768, 772 (Tex. Crim. App. 2009). That is, in 2009, it was established that, under Texas law, a defendant's right to due process is violated whether the State presents false testimony knowingly or unknowingly. *Id.* An applicant need not show a witness committed "perjury"; rather, "it is sufficient that the testimony was 'false.'" *Ex Parte Chavez*, 371 S.W.3d 200, 208 (Tex. Crim. App. 2012). "[A] witness's intent in providing false or inaccurate testimony and the State's intent in introducing that testimony are not relevant." *Id.* A "*Chabot* claim" thus has only two elements: "the testimony used by the State must have been false, and it must have been material." *Ex Parte Robbins*, 360 S.W.3d 446, 459 (Tex. Crim. App. 2011) ("*Robbins I*").

520. Whether testimony is false under *Chabot* turns on "whether the

testimony, taken as a whole, gives the jury a false impression." *Chavez*, 371 S.W.3d at 208 (internal citations omitted). Testimony typically presents a "false impression" when a "witness omitted or glossed over pertinent facts." *Robbins I*, 360 S.W.3d at 462. An applicant need not prove that the testimony was literally untrue; as this Court has explained, "'[t]estimony that is untrue' is one of many ways jurists define false testimony [and the] Supreme Court has indicated that 'improper suggestions, insinuations and, especially, assertions of personal knowledge' constitute false testimony.'" *Id.* at 460; *see also Alcorta v. Texas*, 355 U.S. 28, 31 (1957) (equating false testimony with testimony that is misleading because a witness withheld key facts).

521. To show that false testimony is material, an applicant must "prove by a preponderance of the evidence that the error ***contributed*** to his conviction or punishment." *Chabot*, 300 S.W.3d at 771 (internal quotations omitted) (emphasis added). This degree of harm is shown if there is a "reasonable likelihood that the false testimony affected the applicant's conviction or sentence." *Chavez*, 371 S.W.3d at 207 (quoting *Ex Parte Ghahremani*, 332 S.W.3d 470, 478 (Tex. Crim. App. 2011)).

522. The Court of Criminal Appeals has expressly recognized that this relaxed materiality standard is "more likely to result in a finding of error than the standard that requires the applicant to show a reasonable probability that the error

affected the outcome," which applies to claims under *Brady v. Maryland*, 373 U.S. 83 (1963), and its progeny. *Ghahremani*, 332 S.W.3d at 478; *accord Estrada v. State*, 313 S.W.3d 274, 287 (Tex. Crim. App. 2010).

523. The Court of Criminal Appeals has also found it appropriate to look to the State's Closing Arguments in assessing the materiality of false and misleading testimony. *See Matter of MP.A.*, 364 S.W.3d 277,287 (Tex. 2012); *Service Corp. Int'l v. Guerra*, 348 S.W.3d 221, 237 (Tex. 2011) (finding prejudice where the attorney "colorfully and skillfully emphasized" the improper evidence in argument).

B. The Court Finds and Concludes That Claim Two Is Meritorious.

524. Mr. Roberson's claim, as pled, was based on two categories of false testimony, not simply a few misstatements. Those categories are: (1) the testimony that Nikki's death was caused by intentionally inflicted shaking and impacts, premised on science that this Court has determined is no longer reliable; and (2) the highly prejudicial, but baseless, sexual assault allegations.

525. The Court finds that, at the time that the habeas application was filed, Mr. Roberson did not have access to some key evidence that further supports his false testimony claims. This new evidence not only demonstrates the falsity of the State's trial presentation, and not only raises considerable doubt about the contention that Nikki's death was a homicide, but establishes that her death was the

result of natural and accidental factors that cannot be attributed to Mr. Roberson. The key evidence, not discoverable in June 2016, includes: (1) the CT scans of Nikki's head, found in the courthouse basement in August 2018, which prove that she had sustained only a single impact to the back of her head before she was brought to the Palestine hospital; and (2) the microscopic autopsy slides of Nikki's lungs showing that she had undiagnosed interstitial viral pneumonia. The latter were only made available for review by a specialist (neuropathologist Dr. Auer) as the result of a court order entered during this proceeding. The Court concludes that Mr. Roberson has adduced more than sufficient evidence to establish his right to relief under Claim Two.

1. The State relied on false testimony to obtain Roberson's conviction.

526. Mr. Roberson alleged and has proven that the State relied on two categories of false testimony: (1) the testimony regarding the legitimacy of SBS/AHT as an explanation for Nikki's death, including a series of premises that have all since been discredited; and (2) the testimony that Nikki had been sexually assaulted.

a. *The State's SBS/AHT causation theory was false.*

527. For multiple reasons identified above, the Court finds and concludes that the testimony from medical personnel and, in particular, the State's causation

experts, Drs. Squires and Urban, was false and misleading. That falsity is demonstrated by the substantial evidence developed in this post-conviction proceeding of the unreliability of the SBS/AHT hypothesis and the unreliability of Dr. Urban's autopsy findings. The Court adopts and expressly incorporates here the Findings made above (*see specifically* "Findings of Fact Regarding the Change in Scientific Understanding Since 2003, the Inaccurate Evidence Presented as 'Science' at Trial, and the New Evidence Falsifying the State's Theory of Guilt" and *"*Findings of Fact Regarding the Unreliability of the State's Witnesses").

b. The State's sexual assault evidence was false.

528. For multiple reasons identified above, the Court finds and concludes that the sexual assault testimony of Andrea Sims was false and misleading. The Court adopts and expressly incorporates here Findings made above (*see specifically* "Findings of Fact Regarding the Unreliability of the State's Witnesses" related to Nurse Sims and "Findings of Fact Regarding False and Misleading Sexual Assault Testimony").

529. Nurse Basinger was clear that it is *not* the role of a SANE to decide if a sexual assault occurred. Instead, the primary concern is "to take care of the health and welfare of the patient" and document whatever is observed. The obligation is to be an objective fact-finder, not to inject "personal opinions" into the process. 6EHRR81; 6EHRR83; 6EHRR84. Yet Nurse Sims assumed the role of investigator

and prosecutor—dictating the lens through which Nikki's condition was viewed from the outset by other hospital personnel, local law enforcement, the child abuse expert in Dallas (Dr. Squires), and the medical examiner (Dr. Urban). Nurse Sims' purported findings during an incompetent SANE exam provided support for an abuse allegation of a particularly heinous nature. Her trial testimony included extensive discussion of her opinion that Nikki had been anally penetrated and otherwise sexually assaulted while in Mr. Roberson's care. Evidence adduced for the first time in this habeas proceeding shows that Nurse Sims was not just overreaching in suggesting evidence of sexual abuse, she misrepresented the nature of her experience, her training, and the support for her "findings."

530. Nurse Sims' testimony cannot be squared with the evidence adduced through highly qualified SANE trainer, Nurse Kim Basinger.

2. The false testimony was material.

531. The Court concludes that the false testimony was material to the jury's verdict. That is, the Court concludes that Mr. Roberson has proven "by a preponderance of the evidence that the error[s] contributed to his conviction or punishment." *Chabot*, 300 S.W.3d at 771 (internal quotations omitted). The required degree of harm is shown if there is merely a "reasonable likelihood that the false testimony affected the applicant's conviction or sentence." *Chavez*, 371 S.W.3d at 207. Mr. Roberson's new evidence far exceeds the requisite standard.

Although materiality should be assessed by considering the effect of the totality of false testimony, the Court concludes that, collectively or severally, the two categories of false testimony were material.

a. The State's false causation evidence was material.

532. The jury was led to believe, through the testimony of multiple members of the medical profession and through the State's two causation witnesses, that the State's SBS/AHT hypothesis and the autopsy findings were based on sound scientific principles. It was repeatedly urged that Nikki died as a resulted of inflicted violence in the form of shaking and impact, and false testimony regarding these contentions permeated the trial.

533. In its Opening Statement, the State sounded the theme of violent shaking and noted that medical experts would testify in support of the State's theory:

- "You'll hear about her head popping back and forth as he was shaking her. You'll also hear from experts, treating physicians, hospital staff, what their conclusions were."

- "You'll hear from Janet Squires, the treating physician at the Children's Medical Center. In fact, she's the Director of General Pediatrics at Children's Medical Center. Her diagnosis was massive brain injury and the only reasonable explanation was trauma and that the injuries sustained by Nikki were wholly inconsistent with the version given by the defendant of Nikki falling off a bed and causing those injuries. She found this area of impact to the back of the head that we talked about. Her opinion, be that Nikki died or rather was the victim of child physical abuse consistent with the picture of what they call **shaken impact syndrome**."

41RR53-55 9emphasis added).

534. The State's theme of violent shaking was developed at length through State's expert Dr. Squires. This Q & A is but one example:

> Q. Okay. So let's talk about that. When you saw her, she wasn't going to live, and your diagnosis was massive brain injury and your only explanation was trauma. And medical findings is a picture of **shaken impact syndrome**. All right. It's a pretty significant diagnosis, doctor. Can *you* explain to us then what **shaken impact syndrome** is?
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> A. There's a very well known, well described entity in children and it goes by several terms. Most of the lay public knows term **shaken baby syndrome**. And what, and if I may just for a minute, explain **shaken baby**. When one human being is much smaller than-- Let me say it this way. Children are uniquely at risk that if you take a child and you shake them, their **head will go back and forth** very forcefully and you know that you can cause major brain injury doing that. And one of the features is that you might not be able to see anything on the outside and have all these significant brain injury. And the reason babies are so prone to that, there's lots of reasons, but mainly it's because they're so small compared to how big whoever it is **shaking them**. In addition, their heads are big compared to their bodies, their neck muscles are weak, and they don't-- They're not conscious enough to protect their neck. In addition their brains have higher water content. So for all those reasons, shaken baby has been a well described entity. Now, some people think that with **shaken baby** that the most part of the damage is that they're often shaken and then thrown against something. And at the time when the **head is moving back and forth** very, very vigorously and then all of a sudden it stops against something; that at that moment is probably when a lot of the damage is being done because **these shearing forces** actually go through the brain itself. There are some experts that think that you cannot kill a child by **just shaking alone**, but you have to-- And they call it **shaken impact**. So the term is about the same. I will say that most, when I would consider most of the experts do think that **shaking alone**, if done vigorously, will kill a child, but most children are **shaken and then thrown against something**. And it's in the whole context of the head being vigorously **shaken back and** forth and then slammed against-- It can be a mattress, so that maybe there's no signs of trauma at all and yet as that head is moving and then suddenly stops,

those shear forces go through it and cause tremendous damage to the brain, deep in the brain.

Q. And in Nikki's case you did have-- you had dramatic evidence of an impact to the back of her head?

A. I would like to say, you know, one possibility is that the impact happened at a different time. I mean, you know, I can't, a hundred percent. What I know is that there was an impact because it was swollen. Clearly, the most likely thing was that there was an impact that had to-- But the actual brain injury, we do not feel is explained by a simple impact.

Q. All right. And the items we talked about, the subdural hemorrhages, the retinal hemorrhages, and the brain swelling; what are they indicative of?

A. Well, it is my opinion, my estimation after a consultation with all that there was some **component of shaking** that happened to explain all the deep brain injury out of proportion, I would say, to the injury to the skull and the back of the head. There had to have been something more than just impact. We see children fall out of windows and all sorts of things and we know what an impact injury looks like and when you see this much damage deep to the brain, then you see subdural blood. The reason subdural blood is so important is there are little blood vessels that go between the bone and the dura. And when you **shake a baby those blood vessels break** and you get blood over the top of the brain. So whenever we see lots of subdural blood, I don't mean localized right under a fracture, but all over, usually that's indicative of **this shaking**. And then the retinal hemorrhages are just further-- It's one more thing that really lets you know that those **eyes were being shaken and that the blood vessels broke**.

Q. And then you've got some additional findings there. As far as the onset of symptoms with a child that's hurt this badly, is it a prolonged thing where it just develops hours and hours or how does that happen?

A. It's a spectrum. Some **shaken babies** are very mild and people might not even realize it. Other children, if you **shake them hard enough** and you hurt them bad enough, they stop breathing immediately. So

> anything in-between. It is my assessment in this child that after the event that caused all this deep brain injury she would not have been normal. And any reasonable person would know that she wasn't normal. However, she could live for several hours and might not totally stop breathing long enough-- She certainly could live for hours after the event, but she would never have talked, walked, and been thought to be normal by anybody.

42RR105-109 (emphasis added).

535. Notably, Dr. Squires, who had seen at least one set of CT scans taken of Nikki's head, did not agree with the State's suggestion that (1) there was evidence of multiple impacts or (2) that the single impact site was "dramatic." Dr. Squires even opined that the minor impact may have "happened at a different time." *See id.*

536. According to Dr. Squires, violently shaking had caused the triad of internal head injuries that in turn were said to explain Nikki's death.

537. The theory that Nikki's death was caused by a *combination* of violent shaking and "multiple impacts" to the head was developed through medical examiner, Dr. Urban. Dr. Urban relied on her purported expertise as a forensic pathologist and her graphic autopsy photographs depicting minimal external bruises on Nikki and a large quantity of blood under Nikki's scalp, which Dr. Urban told the jury had been caused by inflicted trauma in the form of shaking and blows, two ways to inflict "blunt force injuries." She, incorrectly, also testified about seeing "multiple impact sites" by reading the subdural blood. She did not mention the CT scans that proved otherwise. *See, e.g.*:

- "Typically in a-- Especially in a child this age, blunt force can be caused both by-- well, by an impact to the head, so being struck with something or being struck against something. **Shaking also falls into this definition of blunt force** and when enough-- And although it doesn't seem like, you know, shaking is not necessarily striking a child, when you are-- When a child is say, **shaken hard enough, the brain is actually moving back and forth within, again, within the skull**, impacting the skull itself and that motion is enough to actually damage the brain." 43RR78-79.

- "The subarachnoid hemorrhage alone is not going to kill this child. Subdural hemorrhage alone, the subscalpular hemorrhage alone. You know, it's a small amount of blood loss. Again, these injuries themselves are not going to kill this child, but what is going to kill this child are the actual injuries to the brain. And so these other things, the subarachnoid hemorrhage and the subdural hemorrhage are markers that the brain is injured in this way. What actually happens is when **the brain is shook or struck hard enough** in cases such as you might find here, the actual nerves, the actual individual cells that make up the brain are injured. So those same cells that create our memories or tell our hearts to beat and remind our lungs to breathe are actually damaged and along with, when those cells are damaged like that we get the bleeding into the brain and we get the swelling or the edema." 43RR80-81.

538. Dr. Urban was asked to explain the seemingly counter-intuitive fact that Nikki could have this "degree of injury" inside her head without broken bones (or even fractures) and with minimal bruising. Dr. Urban opined that this was possible because of what happens when you shake a child with a "weak" neck:

> Q. All right. Then let me visit with you about this. In older children is it unusual to have this degree of injury and not have a bunch of broken bones? Neck injuries and things like that; is that unusual?
>
> A. No, it's not.
>
> Q. What's the reason?
>
> A. Well, in a child this age, the neck is actually fairly flexible and that's one of the reasons that blows to the head or **shaking is so dangerous**

> because the neck is not actually strong enough to support the head. And, you know, if you ever looked at a small child, their head is very large in proportion to the rest of their body. And so when the head is struck or, again, if the child is **shaken**, it's this very large object sitting on a fairly weak neck. And, you know, the weakness in the neck protects the neck from getting hurt, but it really just doesn't protect the head from getting hurt.

43RR82 (emphasis added).

539. The theme of violent shaking in combination with "multiple impacts" was then sounded repeatedly during the State's Closing Arguments, starting with a reminder that the defense had conceded that "this is a shaken baby case," thus, the jury was told, Nikki's death was "not accidental" and "[t]he story given by Mr. Roberson in his confession was not truthful." 46RR15. Counsel for the State at trial painted a picture of an imagined violent assault on Nikki, relying repeatedly on the testimony from experts and the "science" they had provided to support the State's theory of guilt:

- "You heard from Dr. Squires in Dallas, Director of General Pediatrics at Children's Medical Center. And you heard her testimony that these were inflicted injuries consistent with not just shaken baby syndrome, this is not a child that was just shaken out of frustration, but shaken impact syndrome. This is a child that not only was shaken, but was beaten about the head. Child abuse, she ruled. You heard from Dr. Urban, the Medical Examiner. Not just shaken, but blunt force injuries to Nikki, received multiple blows to the head. Multiple blows to the head. Not just, 'I lost it,' you know, 'Please be quiet.' Sits her gently on the bed. But we're talking shaking and beating is what Nikki sustained." 46RR26.

- "Did he shake her? And you heard what that would do to her. It's like turning off a light switch. Shake and it scrambles the brain and they're rendered in a state of unconsciousness and you heard they will never be the same again. So

does he throw her down again and start punching her? Or do we want to believe the other one? Maybe he punched her for a few times first and she wouldn't quit crying so he then he picked her up and shook her. Then she stopped crying." 46RR62.

- "You've seen the autopsy report. The experts agree. There's seven doctors that wrote off on it as homicide. Intentionally inflicted injuries is what they characterize it as. Shaken impact syndrome. Multiple blows to the head. Not as 'I'm out of control.' It's an intentionally and knowingly produced injury." 46RR63.

- "And then, ladies and gentlemen, you heard the testimony from the doctors, that after this injury Nikki wouldn't have been normal. She would have been laying on the ground. She would have been ever been unable to walk, talk, conscious, unconscious, difficulty breathing, murmuring, gasping, gurgling, moaning, muffled cries is what he heard. And the last thing that she saw before he killed her was the hate in her dad's eye when he was shaking her to death is what she saw." 46RR66.

540. Both the quantity and nature of the false testimony establish its materiality. Without the false premises of SBS/AHT, the false assertions that nothing else explained Nikki's collapse other than inflicted injuries, and the false claim that Nikki had sustained "multiple impacts" in the form of "blows" the State could not have proven that a crime had been committed. In short, there is more than a "reasonable likelihood" that this false testimony affected the jury's judgment and was, therefore, material to the conviction. *Chavez*, 371 S.W.3d at 207.

b. The State's false sexual assault testimony was material.

541. The State's sexual-assault theme was a dominant part of Mr.

Roberson's trial.[59] The topic was raised with every member of the venire panel. In the State's Opening Statement, the State invoked Nurse Sims, who purported to be a certified SANE who had found "anal tears": "You'll hear from Andrea Sims who is a registered nurse and is also the SANE examiner, the Sexual Assault Examination Nurse, who performed a sexual assault examination on Nikki and found that he probably sexually assaulted her. She found anal tears on 2 year-old Nikki." 41RR54.

542. The State presented Nurse Sims as a "certified" and highly qualified SANE. Yet that was not true. Particularly troubling is that she offered opinions, under the guise of an expert, that are directly contrary to SANE training.

543. Nurse Sims was no minor witness. Her testimony spans 50 pages of the trial Reporter's Record and dominated the first day of the trial. 41RR101-151.

544. During this habeas proceeding, it was established that Nurse Sims is

[59] Even before trial, the State characterized the sexual abuse allegations as key to its ability to prove an intentional killing and providing a "motive":

> MR. LOWE: One thing, this isn't a felony murder case. We're not proving felony murder. We have got to prove intentional killing of that child or knowing killing of that child. So he may not like the evidence that's out there that's of a sexual nature, but it's sure relevant to what was an intentional or knowing killing of a child. So that evidence, when we get to it, we're going to have to wrestle with it. You're going to have to see how it is in trial, but it goes to motive, scheme, plan, absence of mistake.

5RR23-24.

the first person who contacted law enforcement. 7EHRR9. She shared with law enforcement her view that she had seen "anal tears" on Nikki at the outset of the investigation while Detective Wharton was still at the hospital. 7EHRR11-12. This "sexual component," attested to by Nurse Sims, along with some light bruising, led them to believe that Nikki had been intentionally injured. 7EHRR13; 7EHRR31.

545. Detective Wharton agreed that no other evidence was ever adduced to support the sexual assault allegation other than Sims' claims, and Wharton admitted "I could not see what she was saying she saw." 7EHRR35. He assumed that the conversation about a sexual assault ended when the sexual assault kit came back and "there was no evidence." 7EHRR35. He testified in this proceeding that he did not personally have confidence in the allegation that a sexual assault had been committed. 7EHRR36. Yet the State went forward with these allegations in reliance on Nurse Sims' claims and purported expertise.

546. The false opinions that Nurse Sims provided were also material because, as Nurse Basinger observed, even though the State withdrew the sexual assault charge right before the case was submitted to the jury, "[i]t would be very difficult to un-ring that bell." 6EHRR141.

547. Moreover, the trial record shows that the State continued to refer to Andrea Sims and her sexual assault "findings" and continued to insist that Mr.

Roberson had sexually abused his daughter in Closing Arguments, even after the specific count in the indictment based on a sexual assault had been dropped. The State continued to ring this false and very loud bell. The State even sought to bolster Sims' false testimony with recourse to matters involving third parties not proven at trial and by minimizing the fact that neither Dr. Squires nor Dr. Urban had agreed with Sims' findings:

- "You heard from Andrea Sims that there was a probable sexual assault. Not only was she the Sexual Assault Examination Nurse, but she was also a registered nurse that was working in the emergency room that day. She saw evidence of three anal tears. You heard her conclusion, probably sexual assault." 46RR21.

- "[Defense counsel] talked a lot about us abandoning the sexual assault of a child allegation. What he didn't tell you is that the law requires us to choose one or the other. You'll recall in voir dire we indicted under alternative theories of capital murder. The law says at the end of the State's case in chief we've got to pick, and we did, and now he wants to hold it against us." 46RR53-54.

- "The fact of the matter is, ladies and gentlemen, sexual assault of a child, these type predators and abusive predators, also, whether they be physically or sexually, they don't require an audience. Typically they don't go out and do it enmasse so a lot of people can see and tell about it. Patricia Conklin didn't know her four daughters had been sexually assaulted. But now she's going to lay claim to what a great father Robert was." 46RR56.

- "The sexual assault. Did we just throw that out in bad faith? No. I want to talk about the evidence with regard to sexual assault. And it doesn't mean you can't consider it, as [defense counsel] said." 46RR58.

- "You heard from Andrea Sims who is the only one in this county, she's the SANE examiner, sexual assault nurse. She's the one who examines these kids. We have her cases all the time; Andrea Sims. She's the one and she

looks and she performs that special examination to determine whether or not sexual assault took place and her conclusion was that more probably than not, it did. Probable sexual assault. That's in her findings. She talked about three anal tears. There's evidence there that Mr. Roberson sexually assaulted his daughter."

- "Dr. Squires, and I think her testimony was mischaracterized, she did mention that she also saw the tears. Now, she also mentioned the possibility that they could be healing over the time from when Andrea Sims saw the injuries to the time that she saw them."

- "You also heard Dr. Urban. I think her testimony was mischaracterized. She didn't see any anal tears. That's a given. But when we also asked the question, 'Doctor, just because you don't find any physical evidence does that necessarily-- does that rule out completely that the child's been sexually assaulted?' 'No. In fact, often times there's no evidence of physical trauma when a child has been sexually assaulted.' [Defense counsel] talked about how there was no semen found. Well, he only had five hours to clean it up before he decided to shimmy on down to the hospital. He had five hours. Is he going to leave that evidence laying around? . . . . And then coincidentally enough we have evidence of anal tears after that. There's evidence of sexual assault here. The fact of the matter is we had to choose. Now they want to hold that against us." 46RR58-61.

548. Andrea Sims' claim regarding "anal tears" and her other false testimony regarding sexual abuse dominated the State's Closing Arguments and cannot reasonably be deemed "immaterial" even though the jury was not ultimately asked to make a specific finding on that issue.

c. The State adduced no other competent evidence of Roberson's guilt.

549. The Court concludes that, other than the false testimony, the State adduced no competent evidence to support a guilty verdict.

550. Specifically, the Court concludes that the State's reliance on the

coerced "confession" that defense punishment-phase expert Kelly Goodness purportedly obtained from Mr. Roberson is unreasonable. The Court likewise concludes that the State's reliance on testimony regarding Mr. Roberson's demeanor and flat affect is unreasonable. The Court incorporates here the findings made above as to why that evidence does not affect the Court's conclusion regarding the materiality of the false testimony. The Court adopts and expressly incorporates here the Findings made above (*see specifically* "Findings of Fact Regarding State's Reliance on Opinions about Mr. Roberson's Demeanor and Purported 'Confession'").

C. Conclusions as to Claim Two

551. Had the jury been aware of the lack of scientific foundation for SBS/AHT, the studies that have dismantled all of its basic premises, the science that exposes the multiple errors Dr. Urban committed in undertaking the autopsy, and the false nature of Nurse Sims' credentials, methodology, and conclusions regarding sexual abuse, the jury would not have convicted Mr. Roberson of capital murder. The jury would not have even concluded that a crime had occurred.

552. A review of the whole record and the emphasis that the State placed on evidence that has been established as false makes the materiality clear. Indeed, the State's entire argument as to how the critical *mens rea* element had been satisfied hinged on the false SBS/AHT testimony, the false testimony regarding

"multiple impacts" to the head, and the false sexual abuse testimony.

553. The Due Process standard adopted in *Chabot* reflects a commitment to rejecting use of state power to give juries "a false impression" and to prioritizing criminal proceedings grounded in the truth. *Ex parte De la Cruz*, 466 S.W.3d 855, 866 (Tex. Crim. App. 2015). That standard was violated in this case.

554. Mr. Roberson has proven his *Chabot* claim. He was convicted of capital murder based on evidence that has now, in light of the new science, been shown to be literally false or to have left the jury with a materially false impression. He was also convicted relying on the drumbeat of salacious and baseless sexual assault allegations that misled the jury. Whether the State or its witnesses knew that the testimony was false is irrelevant. *Chavez*, 371 S.W.3d at 208. Mr. Roberson was convicted based on a considerable volume of inaccurate and false testimony.

555. Accordingly, the Court concludes that Robert Roberson is entitled to habeas relief and should receive a new trial.

556. This Court recommends granting relief under Claim Two.

III. CLAIM THREE: ROBERT ROBERSON IS ENTITLED TO HABEAS RELIEF BECAUSE HE IS ACTUALLY INNOCENT.

557. Texas law recognizes that incarceration or execution of the actually innocent violates the Due Process Clause of the Fourteenth Amendment. *State ex*

rel. Holmes v. Court of Appeals, 885 S.W.2d 389, 397 (Tex. Crim. App. 1994); *Ex parte Elizondo*, 947 S.W.2d 202, 209 (Tex. Crim. App. 1996); *see also Herrera v. Collins*, 506 U.S. 390 (1993). Mr. Roberson is entitled to relief from his capital murder conviction and death sentence because there is clear and convincing evidence that no reasonable juror would have convicted him of capital murder in light of all the evidence now available. The new evidence presented here demonstrates that Robert Roberson is actually innocent of capital murder because Nikki's death was not a homicide.

558. By remanding Claim Three for further factual development, the Court of Criminal Appeals has already decided that Mr. Roberson satisfied the threshold requirements with respect to section 5(a)(1) and/or (5)(a)(2). *See* TEX. CODE CRIM. PROC. art. 11.071, § 5(a)(2).

A. The Legal Standard

559. In reviewing an Actual Innocence claim, the court ordinarily assumes the trial was error-free but that new facts establish the applicant's innocence. *Ex parte Elizondo*, 947 S.W.2d at 208. In other words, to grant relief, the habeas court must be convinced that the new facts establish innocence. *Id.* at 209. Thus, prevailing on an "Actual Innocence," *Herrera*-type claim requires overcoming a high burden. The Court of Criminal Appeals has described the burden as "Herculean" because the

applicant must establish that no reasonable juror would have convicted him in light of the new evidence. *Ex parte Brown*, 205 S.W.3d 538, 545 (Tex. Crim. App. 2006).

560. *Herrera* rests on the assumption "that in a capital case a truly persuasive demonstration of 'actual innocence' made after trial would render the execution of a defendant unconstitutional, and warrant federal habeas relief if there were no state avenue open to process such a claim." 506 U.S. at 417; *see also In re Davis*, 557 U.S. 952 (2009) (permitting freestanding innocence claim and instructing that the "District Court should receive testimony and make findings of fact as to whether evidence that could not have been obtained at the time of trial clearly establishes petitioner's innocence"); *House v. Bell*, 547 U.S. 518, 555 (2006) (assuming, without deciding, the existence of a freestanding innocence claim).

561. Under Texas law, where the new evidence precludes a conviction, the previous punishment violates the right to due process. *Elizondo*, 947 S.W.2d at 209.

562. In sum, *Elizondo* recognizes what should be a self-evident proposition: executing someone who is innocent violates the federal Constitution; and that constitutional rule is more important than its precise doctrinal formulation. As Justice O'Connor noted in her *Herrera* concurrence: "Regardless of the verbal formula employed … [,] the execution of a legally and factually innocent person would be a constitutionally intolerable event." 506 U.S. at 419.

B. The Court Finds and Concludes That Claim Three Is Meritorious.

563. When Detective Wharton was asked during this proceeding if he believed that "justice was done in this case," he responded: "No." 7EHRR37. The Court agrees and concludes that no reasonable juror could find Mr. Roberson guilty beyond a reasonable doubt in light of all of the new evidence adduced in this proceeding. The Court incorporates here all findings above regarding the new evidence outlined above (*see specifically* "Findings of Fact Regarding the Change in Scientific Understanding Since 2003, the Inaccurate Evidence Presented As 'Science' at Trial, and the New Evidence Falsifying the State's Theory of Guilt."). The Court concludes that the new evidence that Nikki's death was definitely not a homicide, but instead the result of accidental and natural causes, is dispositive.

564. As explained above, in the nineteen years since Mr. Roberson's trial, there has been a sea change in the scientific consensus regarding SBS. Reliance on the triad to prove that Nikki's condition was intentionally inflicted would be untenable in today's scientific landscape. The triad of symptoms—subdural bleeding, brain swelling, and retinal hemorrhaging—is the single most problematic aspect of SBS; it is not evidence-based; it is based on a circular, self-fulfilling argument. Confidence in the triad as proof of violent, intentional shaking and other misconceptions of fact, such as Sims' representation that she had seen "anal tears," precluded the medical professionals who treated and examined Nikki from approaching the question of cause of death in a scientific manner. New, evidence-

based explanations of the cause of death account for far more relevant data and are grounded in basic principles of physics and anatomy. The new evidence, applied to the autopsy findings, exposes a rush to judgment and a contemporary reluctance on the part of the medical examiner to learn from intervening scientific developments. No reasonable juror would have convicted Mr. Roberson of capital murder without the State's use of the debunked causation theory that she was injured in part through violent, intentional shaking.

565. Likewise, no reasonable juror could have convicted Mr. Roberson in reliance on Dr. Urban's claim that she had found evidence of "multiple impact sites" if jurors knew about the CT scans. CT scans taken of Nikki's head, including a set taken soon after her admission to the Palestine Regional ER the morning of January 31, 2002, were rediscovered in the courthouse basement in August 2018. Thereafter, both parties had access to the digitized images and had the opportunity to consult with a radiologist. The only radiologist to provide the parties, their experts, and this Court with an interpretation of the most objective evidence of the condition of Nikki's head at the time of admission was Dr. Julie Mack, who found evidence of only a single impact site. APPX93. That site is associated with the "goose egg" observed at the back right of Nikki's head when she was brought to the hospital.

566. Even more, no reasonable juror would convict Mr. Roberson of any crime if presented with all of the new evidence amassed in this proceeding. Mr.

Roberson has adduced new evidence from Dr. Auer, Dr. Ophoven, Dr. Wigren, and Dr. Monson that not only devastates the State's causation theory but provides compelling evidence that Nikki's death was caused by both natural and accidental factors, not any intentionally inflicted head injury. Dr. Auer, Dr. Ophoven, Dr. Wigren, and Dr. Monson all relied on the new radiological evidence showing that Nikki had sustained a single impact to the right back of her head where a "goose egg" had formed and where a small amount of subdural blood and brain swelling was visible at the single impact site at the time the x-ray was taken. All opined that the single impact was consistent with Mr. Roberson's report of a short fall from the bed, but did not explain why she ceased breathing.

567. Dr. Auer and Dr. Wigren reviewed all of the original microscopic autopsy slides and identified other evidence to explain why Nikki would have been prone to falling and why she stopped breathing at some point after sustaining a single, relatively minor impact that was not the primary cause of her death, merely a contributing factor.

568. Dr. Auer concluded that Nikki's undiagnosed pneumonia, "with the layer of drugs suppressing her respiration," caused her to stop breathing and experience cardiac arrest. 8EHRR82. The cardiac arrest then set off a cascade of events that explain what was observed inside Nikki's head when she arrived at the Palestine hospital—subdural hematoma, brain swelling, and retinal hemorrhage. Dr.

Auer then explained at length that the treatment she received once admitted to the hospital, including the drugs she received, would have affected her circulation and caused a volume of blood that could no longer enter her nonperfused brain to detour around the brain, which is what Dr. Urban observed two days later and mistakenly labeled evidence of inflicted trauma.

569. Although Dr. Auer opined that the primary cause of Nikki's death was the undiagnosed pneumonia, he acknowledged that hers is a case of "co-pathology," meaning that many things went wrong causing her to stop breathing, including the promethazine, which was "very dangerous" and is no longer supposed to be given to patients of Nikki's age because of many adverse side effects, including respiratory depression. 8EHRR91. On top of that, the codeine she was prescribed is a narcotic that metabolizes into morphine, which causes breathing to stop. 8EHRR92.

570. Dr. Auer explained that, when a person has hypoxia, it causes them to become woozy, they tend to fall over—especially a toddler like Nikki. Therefore, a fall in her circumstances was predictable. 8EHRR94. But, in Dr. Auer's view, the fall and resulting impact to the back of her head (evidenced by the goose egg seen in the hospital and the CT scans) did not cause Nikki to stop breathing. Dr. Auer explained that head injuries, physiologically speaking, do not prompt a person to stop breathing; instead, the inverse is truth: blows to the head accelerate breathing. 8EHRR95-96. Yet it is uncontrovertible that Nikki stopped breathing. And she had

ceased breathing long enough that her eyes had become fixed and dilated, reflecting that her brain had become nonperfused (dead) by the time she first arrived at the hospital. That would have only taken 10-12 minutes. 8EHRR62.

571. Dr. Ophoven, in accord with Dr. Auer and Dr. Wigren, found that Nikki died because her brain stopped due to "increased intracranial pressure and swelling" that was a function of ischemia (lack of oxygen). 3EHRR34. Based on the information available to her, Dr. Ophoven was unable to conclude what had caused the lack of oxygen; that would have required further investigation, which Dr. Auer and Dr. Wigren undertook. Dr. Ophoven was, however, confident that the evidence available at the time of autopsy does not support a conclusion that the precipitating event was caused by "shaking" *or* by multiple impacts to the head. 3EHRR34. Similarly, she was confident that darker blood in the subdural space is not evidence of multiple impacts as Dr. Urban told the jury. 3EHRR69.

572. Dr. Ophoven opined that the internal head injuries observed in Nikki simply show that she had suffered irreversible damage from oxygen deprivation. 3EHRR81. Dr. Ophoven, like neuropathologist Dr. Auer, saw no evidence of any kind that the brain itself had been bruised. 3EHRR78. Nor did the neuropathology work-up requested by Dr. Urban find any bruises to the brain. 3EHRR79.

573. Dr. Ophoven found that the evidence supports a conclusion of a single impact site on the back of Nikki's head, contrary to Dr. Urban's assessment. But

considerable other evidence, never considered by Dr. Urban or anyone else at the time, shows that the impact site was not the only factor that contributed to the cascade of conditions in Nikki—subdural bleeding, brain swelling, herniation, retinal hemorrhages. 3EHRR49. The blood vessels on the under-side of the dura became damaged by oxygen-deprivation. 3EHRR52. Once damaged, the vessels began to leak into the subdural space, thereafter causing braining swelling, herniation, and retinal hemorrhage. 3EHRR52. The vessels were not broken by "shearing forces" or "shaking," as both Drs. Squires and Urban told the jury.

574. Dr. Wigren identified several factors that were critical to understanding his conclusion that Nikki's death was not a homicide. These factors include: (1) the report of a fall off of a bed; (2) the evidence (CT scans and autopsy photographs) of only a single impact site to the back of Nikki's head that was consistent with the report that she had sustained a short fall; (3) evidence in the toxicology report of potentially toxic quantities of a drug (Phenergan/promethazine) in Nikki's bloodstream at the time of autopsy, a drug which had been prescribed to her on January 29, 2002, fewer than two days before her collapse; (4) evidence that she had also been prescribed cough syrup with codeine, a narcotic that metabolizes into morphine; (5) evidence that the fall occurred while she was in an unsafe and unfamiliar sleep environment, a bed that consisted of a mattress and box springs that had recently been propped up on two layers of concrete cinder blocks, some of which

were sticking out from under the box springs; and (6) evidence that Nikki had undiagnosed pneumonia. 5EHRR201-209; *see also* APPX95 (Dr. Wigren's chart/demonstrative); 5EHRR225-238; 6EHRR25.

575. Dr. Wigren concluded that Nikki's condition was caused by multiple factors that came together to cause an "unfortunate accident" and was "absolutely not" a homicide. 5EHRR240; 5EHRR244. Dr. Wigren, like Dr. Auer, Dr. Ophoven, and Dr. Bonnell, opined that SBS/AHT played no role in causing Nikki's death. 5EHRR244; APPX1; APPX2.

576. No alternative causation theory was presented to the jury at Mr. Roberson's trial. Therefore, all of the expert testimony regarding the appropriate assessment of the cause and manner of Nikki's death is new and satisfies the *Elizondo* standard.

577. The voluminous new evidence explains how the current scientific paradigm debunks the State's SBS/AHT theory; but Mr. Roberson also amassed considerable new evidence that, contrary to the testimony of medical professionals at Mr. Roberson's trial, Nikki's condition was caused by multiple circumstances, not trauma, let alone inflicted trauma attributable to Mr. Roberson.

578. First, Nikki was considerably ill most of her life and exceptionally ill during her last week of life, which was not explained to the jury. Instead, her long-standing health issues were minimized and dismissed. The "respiratory infection"

with which she was diagnosed fewer than two days before her collapse was, as Dr. Auer explained, likely a symptom of her undiagnosed pneumonia, which had been gradually causing the cellular walls in her lungs to thicken and likely also explains the breathing apnea episodes she began having around nine months of age.

579. Second, the jury did not learn anything about the serious medications Nikki had been prescribed, one of which, Phenergan/promethazine, was still in her system at an amount reflecting a toxic quantity. The jury heard nothing about the respiratory depression associated with Phenergan, which has led to the issuance of a Black Box Warning. The jury likewise heard nothing about the likely adverse, synergistic effect of that drug in tandem with the cough syrup with codeine that she had also been prescribed right before her collapse. The jury heard nothing about how life-threatening those medications could be, especially for a two year-old with long-standing respiratory issues and undiagnosed pneumonia.

580. Third, Nikki's subdural bleeding and death may have been set in motion by a head injury sustained before Mr. Roberson took custody of her at approximately 9:30 PM on January 30, 2012. The new science adduced, including science arising from biomechanical research into the injury-potential of short falls, has established not only that such falls can kill young children. Such injuries can produce subdural bleeding that does not cause a collapse for many hours or even days as Dr. Monson explained. Mr. Roberson would have had no means to see the internal injury, and if

she already had the goose egg when he picked her up from the Bowmans, it was not noticeable until her head was shaved the next morning at the hospital. But no one ever considered the prospect of attributing any responsibility to the Bowmans although they, inexplicably, urged Mr. Roberson to take charge of Nikki late in the evening when she was still sick from a week-long infection and although they had been repeatedly investigated by CPS as a result of head injuries and choking instances that had sent Nikki to the ER well before Mr. Roberson entered her life.

581. Fourth, the new biomechanical evidence shows that Nikki's symptoms and death may have been set in motion by the fall from the height of approximately two-feet that Mr. Roberson reported but did not witness. The specifics of that fall were not sufficiently documented because law enforcement discounted the idea from the outset that a short-distance fall had any potential to severely injure a child. The jury heard none of the new evidence about how such falls can be fatal.

582. Fifth, Nikki's symptoms and vulnerability to infections, including the pneumonia that likely caused her death, may have been related to a congenital condition, reflected in her high-risk birth and long-standing health issues, making her prone to increased cranial pressure, coagulation abnormalities, chest compressions, hypoxia—all of which, the medical records show, were present in Nikki's case and all of which are now known causes of retinal hemorrhages, which

the State's medical experts presumed could only be attributed to SBS/AHT. APPX1. None of this evidence was shared with Mr. Roberson's jury.

583. One thing is certain, however: Nikki's death was not caused by violent shaking or multiple blows to the head.

584. If presented with the multiple factors that now explain Nikki's death, and beyond question establish that her death was not a homicide, no reasonable juror would have found the State's causation theory and *mens rea* arguments reasonable, let alone dispositive. No reasonable juror would have a basis to conclude beyond a reasonable doubt that the prosecution had proven a homicide, much less that Mr. Roberson had committed the horrible acts that were attributed to him based on rank speculation and unfounded pseudo-science. Therefore, reasonable jurors would have rejected the causation testimony offered by the local Palestine medical personnel as well as the prosecution child abuse expert, Dr. Squires, and the medical examiner, Dr. Urban.

585. With the countervailing evidence developed through the evidentiary hearing in this proceeding, Mr. Roberson's actual innocence has been established.

C. Conclusions as to Claim Three

586. The Court finds that Mr. Roberson has carried the onerous burden of proving his innocence. In addition to establishing that the causation theory the State relied on to obtain his conviction was unreliable and indeed false, he has also

amassed considerable new evidence establishing that (1) Nikki Curtis's death was not a homicide; (2) she died of a convergence of factors, including an undiagnosed pneumonia, respiratory depression from dangerous prescription drugs, and likely an accidental fall that caused a single impact to the back of her head and started the small subdural bleeding seen in the initial CT scans; (3) the blood under Nikki's scalp increased and accumulated in response to treatment she received after her brain had already become nonperfused (dead); and (4) none of these factors can be attributed to Mr. Roberson.

587. The Court finds that no reasonable jury would have convicted Mr. Roberson in light of the new evidence. He has adduced "clear and convincing evidence . . . that a jury would acquit him based on his newly discovered evidence[.]" *Ex parte Elizondo*, 947 S.W.2d at 209.

588. The new evidence presented in this habeas proceeding has demonstrated that Robert Roberson is actually innocent of capital murder. Therefore, the Court concludes that Robert Roberson is entitled to habeas relief and should receive a new trial.

589. This Court recommends granting relief under Claim Three.

IV. CLAIM FOUR: ROBERT ROBERSON'S DUE PROCESS RIGHT TO A FUNDAMENTALLY FAIR TRIAL WAS VIOLATED BY THE STATE'S USE OF FORENSIC SCIENCE TESTIMONY THAT CURRENT SCIENTIFIC UNDERSTANDING EXPOSES AS FALSE.

590. The Court finds and concludes that Mr. Roberson's conviction violates the right to due process because it was secured by reliance on causation testimony grounded in the discredited SBS/AHT hypothesis. The Court of Criminal Appeals has already concluded that Claim Four is available as a matter of law and that, as pled, the claim satisfied the threshold requirements of section 5(a) of Article 11.071 of the Texas Code of Criminal Procedure.[60] The Court of Criminal Appeals approval is evidenced by the decision to authorize Claim Four for remand and further factual development in this proceeding.

A. Legal Standard

591. "[T]he introduction of faulty evidence violates a petitioner's due process right to a fundamentally fair trial." *Gimenez v. Ochoa*, 821 F.3d 1136, 1143 (9th Cir. 2016) (citing *Estelle v. McGuire*, 502 U.S. 62, 68-70 (1991)). Courts have found that a habeas applicant can establish a Fourteenth Amendment Due Process violation by alleging a conviction based on junk science generally, and a triad-only SBS theory specifically. *See id.* (recognizing that a due process claim based on faulty evidence "is essential in an age where forensics that were once considered

[60] Under Texas Code of Criminal Procedure Article 11.071 § 5(a)(1), a claim in a successor posture is remanded if "the current claims and issues have not been and could not have been presented previously in a timely initial application … because the factual or legal basis for the claim was unavailable on the date the applicant filed the previous application[.]" For the reasons set forth above, the medical community no longer accepts the triad as diagnostic of SBS/AHT, but this new consensus had not yet developed so as to serve as the factual predicate of a due process claim when Mr. Roberson's initial or subsequent pro se state habeas petitions were filed in 2004 and 2005.

unassailable are subject to serious doubt."). The Ninth Circuit's decision aligns with the Third Circuit's *Han Tak Lee v. Glunt*, 667 F.3d 397, 407 (3d Cir. 2012) (holding that, if disproven, trial testimony based on unreliable science undermined fundamental fairness of petitioner's entire trial, making a *prima facie* case for habeas relief on a due process claim); *see also Lee v. Houtzdale SCI,* 798 F.3d 159, 162 (3d Cir. 2015); *Dowling v. United States*, 493 U.S. 342, 352- 53 (1990); *McKinney v. Rees*, 993 F.2d 1378, 1385 (9th Cir. 1993); *Kealohapauole v. Shimoda*, 800 F.2d 1463, 1465-66 (9th Cir. 1986).

592. As the Supreme Court has explained, the introduction of faulty evidence is unconstitutional when "its admission violates 'fundamental conceptions of justice.'" *Dowling*, 493 U.S. at 352 (quoting *United States v. Lovasco*, 431 U.S. 783, 790 (1977)). *See also McGuire*, 502 U.S. at 70 (considering whether admission of battered child syndrome evidence against defendant was a due process violation).

593. Because junk-science claims are a species of false-testimony claims, the false-testimony standard of prejudice applies. As explained above, under *Chabot*, 300 S.W.3d 768,[61] Mr. Roberson must "prove by a preponderance of the

[61] Analogous to the *Chabot* holding is the line of Fifth Circuit cases holding that habeas relief is justified on due process grounds where erroneously admitted, prejudicial evidence was "material in the sense of a crucial, critical highly significant factor." *See Porter v. Estelle*, 709 F.2d 944, 957 (5th Cir. 1983) (quoting *Anderson v. Maggio*, 555 F.2d 447, 451 (5th Cir. 1977)); *see also Gonzales v. Thaler*, No. 612-CV-15, 2013 WL 1789380 at *3 (5th Cir. 2013) (examining whether admission of scientifically flawed firearms testimony was so arbitrary as to render trial fundamentally unfair); *Woods v. Estelle*, 547 F.2d 269, 271 (5th Cir. 1977) (explaining that the

evidence that the error contributed to his conviction or punishment." *Id.* at 771 (internal quotation marks and citations omitted). *See also Estrada v. State,* 313 S.W.3d 274, 287 (Tex. Crim. App. 2010) (due process violated where witness unintentionally provided "incorrect testimony").

B. The Court Finds and Concludes That Claim Four Is Meritorious.

594. A conviction secured by way of discredited forensic science violates the right to due process if the scientific testimony "contributed to the conviction." The SBS-triad hypothesis and the numerous errors related to the autopsy more than "contributed to the conviction." As the Court found above, scientific and medical developments in the nineteen years since Mr. Roberson's trial render the State's medical evidence as to the cause of death not just flawed and unreliable but false. These flaws could not have been exposed to the jury through "vigorous cross-examination," as the SBS/AHT hypothesis was considered sound when Mr. Roberson was tried. *See Gonzales v. Thaler*, No. 612-CV-15, 2013 WL 1789380 at *3 (5th Cir. 2013) (quoting *United States v. Berry*, 624 F.3d 1031, 1040 (9th Cir. 2010)). Additionally, Mr. Roberson did not have access to the CT scans of Nikki's head that expose the basic falsity of Dr. Urban's "multiple impact" theory until 2018.

due process implications of erroneous evidence do not stem from state evidentiary rules, but from resultant "error was of such magnitude as to deny fundamental fairness…").

595. Both the quality and quantity of the faulty evidence used to obtain Mr. Roberson's conviction undermined his constitutional right to a fundamentally fair trial, denying him the due process guaranteed by the United States Constitution. Without the SBS/AHT testimony, the jury would not have convicted him.

C. Conclusions as to Claim Four

596. "Finality of judgment is essential in criminal cases, but so is accuracy of the result—an accurate result that will stand the test of time and changes in scientific knowledge." *Robbins II*, 560 S.W.3d at 161 (Newell, J., concurring). The Court concludes that, in this case, accuracy must override finality.

597. In light of all the findings of facts made above, the Court finds that the State's use of the unreliable SBS/AHT hypothesis and the erroneous autopsy findings to convict Mr. Roberson violated fundamental conceptions of justice and undermined the integrity of the trial. SBS/AHT was the crux of the prosecution's case, and the remaining evidence was decidedly weak and unreliable. Accordingly, the use of the unsound SBS/AHT hypothesis violated Mr. Roberson's rights to due process as guaranteed by the United States and Texas Constitutions.

598. Accordingly, the Court concludes that Robert Roberson is entitled to habeas relief and should receive a new trial.

599. This Court recommends granting relief under Claim Four.

RECOMMENDATION THAT RELIEF BE GRANTED

600. The Court has found sufficient facts to support granting relief under Articles 11.073 and 11.071(5)(a) of the Texas Code of Criminal Procedure and clearly established federal and state case law interpreting the United States Constitution. The Court therefore recommends that Applicant Robert Roberson be granted habeas corpus relief with respect to Claims One, Two, Three, and Four as set forth in his subsequent writ application.

601. Specifically, the Court recommends that Applicant be granted a new trial because relevant scientific evidence, admissible under the Texas Rules of Evidence, is currently available that contradicts scientific evidence relied on by the State at trial to convict Mr. Roberson and currently available science was not available to be offered by Mr. Roberson at trial. Furthermore, the Court recommends that Applicant be granted a new trial because his conviction was secured by the State's knowing or unknowing use of false or misleading testimony in violation of state law. *See Ex parte Chabot*, 300 S.W. 3d 768 (Tex. Crim. App. 2009). Additionally, the Court recommends that Applicant be granted a new trial because his conviction was obtained using unreliable forensic science and false testimony in violation of his right to Due Process under the United States Constitution.

602. Finally, the Court recommends that Applicant's conviction and death sentence be vacated because of the new evidence demonstrating that he is Actually Innocent.

ORDER

The Clerk is HEREBY ORDERED to prepare a Supplemental Clerk's Record that includes all additional filings and orders in this cause (Trial Cause No. 26,162-A, Writ Cause No. WR-63,081-03) and transmit the same to the Court of Criminal Appeals as provided by Texas Code of Criminal Procedure, Article 11.071 and Texas Rule of Appellate Procedure 73.4.

The Clerk is FURTHER ORDERED to transmit the Court Reporter's Record of all habeas proceedings, including the record of the evidentiary hearing held in this cause on August 14, 2018, March 8, 2021, March 9, 2021, March 10, 2021 March 11, 2021, March 12, 2021, March 15, 2021, March 16, 2021, March 17, 2021, and on January 24, 2022. It is anticipated that the complete Reporter's Record will consist of 12 volumes of on-the-record proceedings.

The Clerk is FURTHER ORDERED to send a copy of this Order, including the foregoing Findings of Fact and Conclusions of Law adopted by this Court, to counsel of record for Applicant Robert Roberson and for the State of Texas.

By the following signature, the Court adopts the Applicant's Proposed Findings of Fact and Conclusions of Law and this Order in this cause. The Clerk shall forward both to the Court of Criminal Appeals:

_____

The Honorable Deborah Oakes Evans
Presiding Judge, 3rd District Court
Anderson County, Texas

CERTIFICATE OF SERVICE

I, the undersigned, declare and certify that I have served the foregoing on:

Anderson County District Clerk
(via electronic filing)

Judge Deborah Oakes Evans
(courtesy copy via email to csingletary@co.anderson.tx.us)

Anderson County District Attorney's Office
(via email to amitchell@co.anderson.tx.us, sholden@co.anderson.tx.us)

This certification is executed on January 24, 2022, at Austin, Texas.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

/s/ Gretchen S. Sween