

IN THE COURT OF CRIMINAL APPEALS OF TENNESSEE
AT NASHVILLE
August 20, 2019 Session

FILED

01/16/2020

Clerk of the
Appellate Courts

STATE OF TENNESSEE v. WILLIAM THOMAS REED

Appeal from the Circuit Court for Montgomery County
No. 41300829 Jill Bartee Ayers, Judge

No. M2018-01591-CCA-R3-CD

The Defendant, William Thomas Reed, was convicted after a jury trial of attempted rape of a child, three counts of rape of a child, and two counts of sexual exploitation of a minor by electronic means, and he received an effective sentence of thirty-five years. The State's evidence included DNA analysis, and after conviction, the Defendant requested but was denied post-conviction DNA analysis. On appeal, the Defendant asserts that the trial court erred in denying him a hearing on the admissibility of the DNA analysis technique used by the State's expert, that the trial court erred in admitting the DNA evidence, and that the trial court erred in denying his motion for post-conviction DNA analysis and appointment of an expert witness. We conclude that the trial court did not abuse its discretion in admitting the evidence and that the Defendant did not establish the necessary criteria for post-conviction DNA analysis. Accordingly, the trial court's judgments are affirmed.

Tenn. R. App. P. 3 Appeal as of Right; Judgments of the Circuit Court Affirmed

JOHN EVERETT WILLIAMS, P.J., delivered the opinion of the court, in which JAMES CURWOOD WITT, JR., and ROBERT H. MONTGOMERY, JR., JJ., joined.

Joshua W. Etson (on appeal), and Jeffrey R. Grimes and Justin Sensing (at trial), Clarksville, Tennessee, for the appellant, William Thomas Reed.

Herbert H. Slatery III, Attorney General and Reporter; Caitlin Smith, Assistant Attorney General; John W. Carney, Jr., District Attorney General; and Kimberly Lund, Assistant District Attorney General, for the appellee, State of Tennessee.

OPINION

FACTUAL AND PROCEDURAL HISTORY

On June 17, 2013, the day after the seven-year-old victim disclosed to her maternal grandmother that her mother's boyfriend, the Defendant, had been sexually abusing her, she was taken to Nashville for a forensic interview and examination. The examination including taking swabs of her genital region, and the resulting analysis by the Tennessee Bureau of Investigation ("TBI") revealed spermatozoa. However, the limited amount of DNA recovered from the swabs was insufficient to yield a DNA profile, and the TBI agent recommended further analysis to be performed by an independent laboratory. The independent testing revealed that the male DNA taken from the victim's genital area was consistent with the Defendant's DNA and that the profile would exclude approximately 99.9 percent of Caucasian males. The jury convicted the Defendant based on evidence that included the victim's detailed testimony regarding the abuse, the recorded forensic interview recounting the abuse, corroboration of the victim's testimony in the form of numerous files found on a computer, scientific analysis revealing the presence of spermatozoa on the victim's genital area, and the evidence at issue in this appeal, the DNA profile obtained by the independent laboratory.

On August 7, 2014, after receiving the TBI's recommendation for further testing, the State filed a motion to continue the trial in order to allow an independent laboratory to test the evidence recovered from the swabs taken during the victim's forensic examination. On November 4, 2014, Cellmark Forensics¹ ("Cellmark") issued a report indicating that Ms. Barbara Leal, a forensic DNA analyst, had been able to obtain a partial DNA profile using Y-STR² testing, that the Defendant could not be excluded as a contributor, and that approximately 99.9 percent of Caucasian males would be excluded. After several continuances and a change in counsel, on July 13, 2016, the Defendant filed a motion in limine to exclude the anticipated testimony of Ms. Leal. The Defendant asserted that the technique used to amplify the DNA recovered from the swab in order to develop the profile could lead to inaccuracies and that the documentation provided did not demonstrate that Cellmark had used appropriate guidelines for analyzing and interpreting the results based on internal validation studies. The Defendant argued that the methodology used to develop the profile, low copy number ("LCN") DNA analysis, indicated a lack of trustworthiness and was not based upon sufficiently reliable facts. The Defendant consulted his own expert, Dr. William J. Watson, and attached a report by

¹ Due to intervening acquisitions, this entity is referred to be several different names in the record, including "Bode Cellmark Forensics" and "Orchid Cellmark."

² "STR" is an acronym for "short tandem repeat."

Dr. Watson which stated that the use of LCN analysis was “acceptable assuming sufficient applicable validations have been completed and evaluated.” Dr. Watson further stated, “As I was not provided these validations I cannot comment on whether or not the process as performed by Cellmark Forensics is valid,” and he summarized errors that can occur as the result of developing a profile from a very small amount of DNA.

The Defendant requested a hearing on the issue, and the trial court issued a written order denying the request. The court noted that the trial had been delayed numerous times and was scheduled to begin on July 18, 2016, but stated that it was not basing its decision on the timing of the motion. Instead, the court found that Y-STR testing “is reliable scientific testing and has been utilized in many cases prior to this one” and that it had “been reviewed many times prior to this case and is accepted in the scientific community.” The court concluded that any issue regarding the reliability of LCN DNA analysis, errors in testing, and Ms. Leal’s qualifications would affect the weight and not admissibility of the evidence and could be addressed through cross-examination.

At trial, the victim’s maternal grandmother testified that the victim was scheduled to spend a week with her and that she picked the victim up from a friend’s house on Sunday, June 16, 2013. The victim’s grandmother noticed that the victim was “walking funny” and had difficulty sitting, and she changed the victim’s underwear and put some powder in the crease of her legs. After speaking to the victim, she took her to a hospital, spoke with police, and took the victim to a forensic interview in Nashville. She acknowledged that she had never liked the Defendant, that he had ordered her off his property, and that she had told him that she would have him arrested. She explained that her argument with the Defendant did not relate to the allegations of abuse and that her threat, made approximately a week or two before the victim revealed the abuse, was based on a paper she found by his back door indicating that the sheriff was looking for him.

The victim, who was ten years old at the time of trial, testified that when she was between five and seven years old, she lived with the Defendant, her mother, and her baby brother in a basement apartment at the home of the Defendant’s parents, who lived upstairs. She called the Defendant either “Daddy” or “William.” She testified that “almost every day” while she lived there, the Defendant would have sexual contact with her. She described sexual contact that included fellatio, cunnilingus, and vaginal-penile penetration. The abuse happened while the victim’s mother was at work, and the victim did not call for help from the Defendant’s parents because she did not realize what he was doing was wrong. The Defendant showed her movies with “boys and girls touching each other’s front private.” She described watching these movies downstairs on the bed and upstairs on a laptop on the kitchen table. She stated that the Defendant would have a game open on another window of the computer and would switch windows if someone

came by. She described a white liquid coming out of the Defendant's penis when "[h]e was going up and down on his front private with his hand." The victim stated that she did not tell her mother about the abuse because the Defendant told her to keep it a secret. The last time the Defendant had sexual contact with her was the day before she went to spend the night with her friend. The victim's grandmother picked her up from the friend's home the next day.

The victim's recorded forensic interview was played. The victim at first stated that no one had touched her genital area, but asked why she had gone to the doctor, she stated that the Defendant had made her put her "mouth on his" "yesterday." Her statements to the interviewer described the same abuse she had described at trial. She also drew a picture of the Defendant's genitalia and a picture of the Defendant masturbating. She drew and described the hair on his genitalia and told the interviewer that no one else had abused her and that no one had told her what to say. In the interview, the victim also described the videos the Defendant had shown her. She stated there were "ten hundred" videos on the computer and that they were online at either "B-E-E-G" or "G-E-E-B."

On cross-examination, the victim stated that the family's dirty clothes were kept together in a pile on the floor and that the family's towels were hung next to one another in the bathroom. Sometimes, the victim would watch movies in her mother's bed. She stated that no one else had ever touched her inappropriately.

Dr. Lisa Milam, who conducted the forensic interview on June 17, 2013, testified as an expert in the psychosocial evaluation of child sexual abuse. She stated that children around the victim's age are less suggestible than younger children. Dr. Milam testified that children who are six or seven generally understand concepts like "yesterday" and "tomorrow" but that they do not always use them accurately. She stated that a child that age might say "yesterday" for an event that happened in the recent past. She agreed that the victim was not having pain and that the victim's grandmother stated that the Defendant's brother had been accused of child sexual abuse.

The victim's mother testified that the family lived with the Defendant and his parents for approximately two years. At the time the victim revealed the abuse, she was seven years old, and the victim's mother was working, attending college, and had an eight-month-old son with the Defendant. The Defendant did some lawn work but was mainly responsible for childcare while the victim's mother was in school or at work. After the victim revealed the abuse, the victim's mother gave Investigator Julie Webb her laptop computer, which was used by the whole family. She stated that the computer's screen had at one point stopped functioning and that it was generally kept on the upstairs kitchen table, where it was plugged into a monitor. She stated she had never heard of the

website “beeg.com.” According to the victim’s mother, the wireless connection worked downstairs.

The victim’s mother agreed that she did not have a good relationship with her own mother and that her mother had threatened to have her and the Defendant arrested. She described the threat as “an ongoing thing.” She acknowledged that she was dating another man when she met the Defendant, but she denied that the victim was ever alone with her ex-boyfriend. She testified that the Defendant’s brother was not at the home and did not use her computer, asserting she only saw him a total of three times during her relationship with the Defendant.

Investigator Julie Webb testified that she asked the Defendant if he had viewed pornography and that he told her that he had seen it before but did not say he used the computer to view it. He said there was “an issue before” with someone viewing pornography but did not indicate if the victim had seen it. Investigator Webb delivered the laptop computer to Detective Scott Levasseur, who performed a forensic exam. The operating system had been reinstalled in May 2013, so that the files previously stored on the computer were not accessible, but Detective Levasseur was able to recover some files. He did not discover any child pornography but found several hundred history files for the website “beeg.com,” which is a pornography site that streams videos. The history showed a variety of tags attached to the visits to the website, including “stepdaughter,” “barely legal,” and “teen.” He acknowledged that he could not determine who had accessed the site or when it had been accessed. He testified he found thousands of pornographic images but did not catalogue them because adult pornography is not illegal and because he could not say whether they came from that particular website.

At the Nashville clinic, the victim was given a physical examination by Ms. Sue Ross, an expert in pediatric forensic examinations. The victim had irritation in the crease of her legs which Ms. Ross testified was unrelated to sexual contact. Ms. Ross did not find any trauma. She testified that the absence of injury was nevertheless consistent with the victim’s report of penile-genital contact or penetration. She noted that a child’s hymen could allow penetration without tearing and that a child might feel a touching as “inside” if it penetrates the labia but not vagina. She acknowledged that her findings were also consistent with the victim not having experienced penile-genital contact or penetration. Ms. Ross took swabs of the victim’s genital region, including her external labia, and gave the swabs to Investigator Webb.

Investigator Webb testified she received the swabs and put them into a locker kept in the unit which investigated crimes against children. She stated that the evidence was locked and secured and that she put it there instead of the main evidence locker because the main evidence locker was not staffed when she brought the samples to the station.

She acknowledged she did not take the evidence to the TBI for testing until the following March. The delay was attributable to a large backlog of cases at the time. She confirmed that the last contact the Defendant would have had with the victim occurred on June 15, 2013, prior to the victim going to her friend's house.

TBI Special Agent Kendall Stoner, an expert in DNA analysis, received the sexual assault kit and the DNA standard which was taken from the Defendant and delivered to the TBI by Officer Cody Lannom. Agent Stoner testified that the TBI would not accept any evidence that was not sealed with tamper-proof tape and initialed by the person who had sealed it. None of the swabs recovered from the victim contained semen or saliva, but she found a limited number of spermatozoa on the external labial swab. She testified that she identified three sperm heads, which would weigh a combined nine picograms. She attempted to develop a DNA profile but could only obtain a limited profile due to limited or degraded DNA. She recommended that law enforcement seek Y-STR testing, a form of DNA testing that looks only at the Y chromosome. According to Agent Stoner, in a situation where there is very limited male DNA from one contributor, the Y-STR test can be used to obtain a profile because it ignores any female DNA in the sample. Agent Stoner testified that the samples were stored and handled in a manner designed to prevent contamination, including storage in a locker at all times, the use of a control with every DNA test, bleach cleaning between tests, and the use of masks, gloves, and lab coats. Agent Stoner created slides from the evidence recovered from the victim.

Ms. Barbara Leal, who specializes in Y-STR DNA testing, testified as an expert in the field of DNA analysis. She explained that Y-STR testing is "a last resort type of test" which ignores all female DNA and attempts to create a profile from the Y chromosome alone. Because the Y chromosome passes unchanged from father to son, any Y-STR profile will not be unique to an individual but will be identical to the profile of all males from the same male lineage. Ms. Leal stated that she extracted DNA from the sample and ran a quantitation test. She explained that although the machine registered zero during the quantitation test, that did not mean there was no DNA, because the quantitation machine was less sensitive than the equipment used to perform the other steps of the test. Ms. Leal conducted amplification of the sample, essentially "making millions and millions of copies" of targeted areas of the chromosome, and she was able to obtain a partial profile. She stated that she conducted a statistical calculation using a database and concluded that the partial profile she obtained would excluded 99.9 percent of Caucasian males. The Defendant could not be excluded as having contributed to the sample. Ms. Leal testified regarding the steps taken to prevent contamination, including the wearing of masks and lab coats, frequent changing of gloves, bleaching of the work area, the use of controls, and separating known samples from evidence.

Ms. Leal agreed that she could not say whether the samples were possibly contaminated prior to her receipt of them. She also could not say whether the male DNA she recovered came from a sperm cell or another source. The DNA profile she obtained would have been consistent with all the males in the Defendant's family, including his father and brother. She stated that the lowest range her test could accurately detect DNA would be about twenty-three picograms but that an in-house test had returned partial profiles at fifteen picograms. She could not say how many picograms were actually in the sample she used and did not know where Agent Stoner's estimate originated. Ms. Leal stated that part of the swab she received had been consumed prior to her testing that she used the remainder of the swab to recover genetic material.

Ms. Leal agreed that LCN DNA testing was more prone to stochastic effects, or errors. She described one potential error as the absence of an allele that is present in the DNA. She stated that if a report showed an allele that was not present in the DNA, the result would probably reflect contamination. Ms. Leal testified that in this case, the results did not indicate a mixture of DNA, which could have meant contamination. Ms. Leal's first examination yielded only one peak. After a purification step, she was able to detect seven out of seventeen locations on the chromosome, and none of these locations excluded the Defendant. Ms. Leal testified that the threshold for a peak was set during a validation study and that purification was validated by the lab and had been in use since 2011. While Ms. Leal was shown and referred to a validation for the machine used for the purification procedure and a "performance check" which validated the machine for Y-STR testing, the documents were not introduced into evidence. Ms. Leal testified that Cellmark was accredited by four accrediting agencies at the time of the testing.

Ms. Leal stated that although she consumed the swab in the test, there was some DNA extract remaining. She did not attempt to replicate the test because she did not want to consume the entire DNA extract in case further testing was requested later. She elaborated that it was not the laboratory's standard practice at the time to conduct replicate testing. A document published soon after the testing in this case indicated that replicate testing was recommended but not required. She stated she was "extremely confident" in the result and that the test did not show any indication of flaws or contamination.

The defense introduced proof attempting to show that the victim's grandmother had coerced the victim into accusing the Defendant out of animus, that another party was responsible for the abuse, that the DNA testing was flawed, or that the presence of DNA was the result of intermingled laundry or everyday contact. Dr. William Watson, who had worked as a laboratory director with Cellmark in the past, testified as an expert in forensic DNA typing. Dr. Watson testified that LCN DNA analysis refers to any method used to modify a sample in order to produce a DNA profile from a sample that would not

normally produce a profile. He confirmed Ms. Leal's testimony regarding the stochastic errors that can occur. He stated that LCN DNA analysis is generally acceptable.

According to Dr. Watson, the primary recommendation is to do replicate testing in order to make sure the result obtained is valid. He stated that the profile Ms. Leal obtained did not, in his opinion, meet the standard to be reported. According to Dr. Watson, based on the validation he was provided, the laboratory did not validate Y-STR analysis with LCN DNA analysis on the machine. Dr. Watson stated issues could arise from a combination of the amplification and purification steps, and he concluded, "And they were not addressed in this case, to the best that I can tell, from what I've received." He concluded that the laboratory did not meet the requirements necessary to validate the testing and that he could not say that the profile was valid to a reasonable degree of scientific certainty because "the validation studies were not presented for review." He further testified that if he were to audit a laboratory that was not meeting the validation requirements, he would make a finding that the laboratory would have to address with a national accreditation board. Dr. Watson stated that spermatozoa can transfer between clothing items washed together.

Dr. Watson agreed on cross-examination that he had previously testified that washing would eliminate spermatozoa from clothing. *State v. Daryl J. Carter*, No. E2010-01193-CCA-R3CD, 2012 WL 460459, at *20 (Tenn. Crim. App. Feb. 14, 2012) (testifying for the defense that the spermatozoa found by the TBI on the two-year-old victim's vaginal swab could possibly have been yeast). He explained that intervening research had changed his mind. He also agreed that Cellmark was an accredited laboratory and that he referred clients to Cellmark when he was in private practice. He further acknowledged that if Ms. Leal had consumed the entire sample in testing, the evidence could have been attacked on the basis that the Defendant would not have had an opportunity to conduct any testing.

The victim's grandmother acknowledged that she had worked with Ms. Deborah Reed, the Defendant's mother, in 2010. She denied having told Ms. Reed that a past boyfriend of the victim's mother sexually abused the victim. She agreed that the Defendant had ordered her off the property and that she had threatened to "kick his butt" and put him in jail. She testified that she was in regular contact with the victim prior to the allegations of abuse and kept clothing and toys for the victim at her home. She agreed that the victim and the victim's mother lived with her for six months after leaving the Defendant's home.

The Defendant's mother testified that the victim's grandmother had told her in 2010 that the victim's mother's ex-boyfriend was sexually abusing the victim. She also overheard the victim's grandmother threaten to jail the Defendant for "the rest of [his]

life.” She stated that the victim regularly spent time at her grandmother’s house but that the victim would act “different” when she came home and said she did not want to spend the night with her grandmother anymore. She stated the victim appeared afraid. According to Ms. Reed, the laptop computer would not work downstairs because it could not pick up a wireless signal. She always observed who was using the computer and never saw the Defendant watch pornography. She stated that the victim’s mother sometimes took the computer to the residences of other people, who would use it. She explained that using the computer at another residence was possible because the screen was not completely malfunctioning but just difficult to view. She acknowledged that she did not tell Investigator Webb about the allegations against the victim’s mother’s ex-boyfriend and that she was not home every time the Defendant was with the victim. The Defendant’s cousin, Mr. Mark Hampton, testified that he saw the Defendant several times a week and had never seen anything inappropriate occur between the victim and the Defendant, whom he described as honest.

The Defendant testified that he had never had any sexual contact with the victim. He confirmed that the victim’s grandmother threatened him with jail shortly before the allegations and stated that the victim spent almost all the intervening time with her grandmother. In attempting to explain the physical evidence, he stated that the victim would watch television in the bed where he had sex with the victim’s mother. He also testified all of the family’s dirty clothes would be together on the floor. He denied ever watching pornography or visiting the website the victim had described. According to the Defendant, he was never alone with the victim downstairs. He stated he was “[a]lways” upstairs or outside during the day. He also stated he never masturbated during this time period and there was no chance that the victim could have observed him.

The indictment charged the Defendant with attempted rape of a child, rape of a child through cunnilingus, rape of a child through fellatio, rape of a child through vaginal penetration, and two counts of sexual exploitation of a minor through electronic means. Prior to trial, the State dismissed two additional counts of rape of a child charged as occurring on June 16, 2013. The remaining counts were renumbered for trial. The jury found the Defendant guilty of the charges, and the trial court held a sentencing hearing and sentenced the Defendant to serve ten years for attempted rape of a child, twenty-five years for each count of rape of a child, and four years for each count of sexual exploitation of a minor. The sentences for rape of a child were to run consecutively to the sentence for attempted rape of a child but concurrently to one another for an effective sentence of thirty-five years.

The Defendant moved for a new trial and also for post-conviction DNA analysis. *See* T.C.A. § 40-30-304. In his motion for a new trial, the Defendant asserted that the trial court erred in not allowing him a hearing to challenge Dr. Leal’s testimony and in

admitting the testimony. The Defendant asserted that he was entitled to post-conviction DNA testing because if the DNA testing proved exculpatory, there was a reasonable probability that the Defendant would not have been prosecuted or convicted. The Defendant also filed under seal an ex parte motion for a DNA expert.

The trial court denied the motion for post-conviction DNA analysis. The trial court found that there was no reasonable probability that the results of the testing would be exculpatory, noting that only a small quantity of DNA remained and that the victim's testimony was convincing. *See* T.C.A. § 40-30-304(a)(1). The trial court also found that the Defendant had not shown that "there would be any other analysis that could be conducted that would resolve a different issue." *See* T.C.A. § 40-30-304(3). The trial court likewise denied the motion for a new trial, concluding that the jury was able to determine the weight that should be given to the expert testimony. The trial court denied the ex-parte post-conviction motion for an expert witness but ordered the DNA to be preserved. The Defendant appeals, asserting that the trial court erred in denying him a hearing and admitting the DNA evidence and that he is entitled to post-conviction DNA analysis and an expert witness.

ANALYSIS

The Defendant contends that the trial court erred both in not granting him a hearing to establish that Ms. Leal's testimony should not be admissible and in admitting the testimony. The Defendant also objects to the court's denial of post-conviction DNA analysis and his motion for an expert witness. A trial court's decision regarding the hearing and regarding the admissibility of DNA evidence is reviewed for abuse of discretion. *State v. Scott*, 33 S.W.3d 746, 752 (Tenn. 2000) (observing that admission of DNA is reviewed for abuse of discretion and applying the same standard of review to determine whether the trial court erred in refusing to hold a hearing). Likewise, a trial court's determination of whether to grant a petition for post-conviction DNA analysis is reviewed for abuse of discretion. *Charles Elsea v. State*, No. E2017-01676-CCA-R3-PC, 2018 WL 2363589, at *3 (Tenn. Crim. App. May 24, 2018), *no perm. app. filed*; *State v. Ricky Lee Nelson*, No. W2012-00741-CCA-R3-CD, 2014 WL 295833, at *5 (Tenn. Crim. App. Jan. 27, 2014). A trial court abuses its discretion when it applies an incorrect legal standard, reaches an illogical conclusion, bases its decision on a clearly erroneous assessment of the evidence, or employs reasoning that causes an injustice to the party complaining. *State v. Herron*, 461 S.W.3d 890, 904 (Tenn. 2015).

I. Admission of Expert Evidence Regarding DNA

The Defendant asserts that he was entitled to a hearing to challenge the admissibility of Ms. Leal's testimony and that the trial court should have excluded the

testimony because it was not reliable. The State argues that the trial court was correct to conclude that the DNA testing was reliable and that *McDaniel v. CSX Transp., Inc.*, 955 S.W.2d 257 (Tenn. 1997), does not stand for the proposition that the Defendant was entitled to a hearing. We conclude that the evidence at issue has been statutorily deemed admissible and that the Defendant is not entitled to relief.

We begin by observing that the Defendant's expert never called into question the reliability of LCN or Y-STR DNA testing in general. *See also State v. Steven Hernandez*, No. M2016-02511-CCA-R3-CD, 2019 WL 2150171, at *29 (Tenn. Crim. App. May 15, 2019), *perm. app. denied* (Tenn. Sept. 18, 2019) (“... Dr. Watson testified that Cellmark was an accredited lab and that Y-STR testing was an appropriate technique to use when there was a low quantity of DNA.”). On the contrary, Dr. Watson's report, attached to the motion, stated that the use of LCN analysis was “acceptable assuming sufficient applicable validations have been completed and evaluated.” Dr. Watson noted, “As I was not provided these validations I cannot comment on whether or not the process as performed by Cellmark Forensics is valid.”³ At trial, Ms. Leal testified that Cellmark had performed an in-house validation of the type of analysis performed in this case. She testified that Cellmark was accredited by four different accrediting agencies. At the time testing was performed, Cellmark's standard practice was not to perform replicate testing. After the testing in this case, a document recommending replicate testing was published. She noted that replication is a recommendation and not a requirement. She stated that she was “extremely confident” in the result based on her extensive experience in performing this type of test. Dr. Watson testified that based on the documents provided, he believed the methodology used by Ms. Leal had not been validated. He stated that if he were to audit a laboratory which had not used the necessary validation, he would make a finding that would refer the laboratory to a national accreditation board. He testified that the potential issues regarding LCN DNA analysis “were not addressed in this case, to the best that I can tell, from what I've received.” He acknowledged that Cellmark was accredited at the time and that while in private practice, he referred clients to Cellmark. Dr. Watson found fault with the fact that the test results were not replicated, but he acknowledged that if the entire sample had been consumed, the results could have been attacked on the basis that the Defendant would not have been able to seek further independent testing.

Under Tennessee Rule of Evidence 702, “[i]f scientific, technical, or other specialized knowledge will substantially assist the trier of fact to understand the evidence or to determine a fact in issue,” an expert witness may “testify in the form of opinion.”

³ We observe that the documentation regarding the validation methodology questioned by the Defendant is not part of the record on appeal. While Ms. Leal apparently referred to these documents on the stand, they were never made exhibits at trial.

Tenn. R. Evid. 702. The trial court, however, is required to exclude the testimony “if the underlying facts or data indicate a lack of trustworthiness.” Tenn. R. Evid. 703. The trial court’s gatekeeping function is meant “to ensure that ‘an expert, whether basing testimony upon professional studies or personal experience, employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field.’” *Brown v. Crown Equip. Corp.*, 181 S.W.3d 268, 275 (Tenn. 2005) (quoting *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 152 (1999)). The trial court must make sure that the basis of the opinion supports the expert’s conclusions and that there is no “analytical gap” between the data and the opinion. *State v. Stevens*, 78 S.W.3d 817, 835 (Tenn. 2002). The reliability of expert testimony may be evaluated using the following factors:

“(1) whether scientific evidence has been tested and the methodology with which it has been tested; (2) whether the evidence has been subjected to peer review or publication; (3) whether a potential rate of error is known; (4) whether, as formerly required by *Frye*, the evidence is generally accepted in the scientific community; and (5) whether the expert’s research in the field has been conducted independent of litigation.”

State v. Ferrell, 277 S.W.3d 372, 378 (Tenn. 2009) (quoting *McDaniel*, 955 S.W.2d at 265). Generally, the Rules require a determination of the scientific validity and reliability of the evidence. *McDaniel*, 955 S.W.2d at 265. In evaluating reliability, the court looks at four components: “(1) qualifications assessment, (2) analytical cohesion, (3) methodological reliability, and (4) foundational reliability.” *State v. Scott*, 275 S.W.3d 395, 402 (Tenn. 2009). The foundational reliability of the evidence has two aspects: the reliability of the field itself and the trustworthiness of the underlying data. *Id.* at 403.

However, the admissibility of DNA evidence in particular is statutorily regulated. Tennessee Code Annotated section 24-7-118 provides that:

In any civil or criminal trial, hearing or proceeding, the results of DNA analysis, as defined in subsection (a), are admissible in evidence without antecedent expert testimony that DNA analysis provides a trustworthy and reliable method of identifying characteristics in an individual’s genetic material upon a showing that the offered testimony meets the standards of admissibility set forth in the Tennessee Rules of Evidence.

T.C.A. § 24-7-118(b)(1). The statutory definition of DNA analysis is “the process through which deoxyribonucleic acid (DNA) in a human biological specimen is analyzed

and compared with DNA from another biological specimen for identification purposes.” T.C.A. § 24-7-118(a). This statute likewise provides for the admissibility of statistical population evidence related to DNA. T.C.A. § 24-7-118(c). The statute, having provided for the admissibility of DNA evidence without antecedent testimony, explicitly permits the opposing party to offer proof that the DNA analysis was not trustworthy or reliable and to cross-examine any expert witness on the reliability of the proof. T.C.A. § 24-7-118(b)(2).

In *State v. Scott*, 33 S.W.3d 746, 756 (Tenn. 2000), the defendant challenged on appeal the trial court’s refusal to hold a hearing on the admissibility of mitochondrial DNA (“mtDNA”) analysis. MtDNA analysis, like Y-STR DNA analysis, cannot uniquely identify an individual. *Id.* MtDNA analysis examines only mitochondrial DNA, which is inherited from the mother and is genetic information not unique to an individual but shared by all maternal relatives. *Id.* Like Y-STR DNA analysis, MtDNA testing can succeed in obtaining a profile from a smaller amount of genetic material than traditional testing, but it is particularly susceptible to contamination. *Id.* at 757. The court in *Scott* rejected the contention that the trial court erred in not holding a hearing on the reliability of mtDNA analysis, concluding that the evidence, which was relevant and properly given by an expert witness, was “statutorily deemed to be reliable.” *Id.* at 759. The *Scott* court held that neither *McDaniel* nor Tennessee Rule of Evidence 703 required the court to hold a hearing, because “this result would defeat the obvious purpose of the statute in minimizing litigation concerning the general reliability of DNA analysis as a method of proving identification.” *Id.*; *see also State v. Reid*, 164 S.W.3d 286, 336 (Tenn. 2005) (appendix) (citing *State v. Begley*, 956 S.W.2d 471, 477 (Tenn. 1997) for the proposition that the polymerase chain reaction method of DNA analysis was inherently trustworthy under the statute). *Scott* interpreted the statutory language which requires a showing that the evidence meets the standards of admissibility in the Rules of Evidence as requiring only that the DNA evidence comply with other rules of admissibility, such as relevance. *See Scott* 33 S.W.3d at 759. The court in *Scott* observed that the defendant could rely on his own evidence and cross-examination to call into question the “particular reliability of the mtDNA evidence in any given case” but concluded that the trial court did not abuse its discretion in admitting the evidence without holding a hearing. *Id.* at 760.

We conclude that the case at bar is indistinguishable from *Scott*. Ms. Leal testified that the testing she performed is a type of DNA testing. She compared DNA from the Y chromosomes recovered from the swab to DNA from the Y chromosomes recovered from the specimen obtained from the Defendant. *See* T.C.A. § 24-7-118(a). Under the plain terms of the statute, the DNA evidence was admissible without a prior hearing on its reliability.

We conclude that the trial court did not abuse its discretion in determining that the evidence was admissible and that the Defendant's recourse was to challenge the evidence at trial, which he did through extensive cross-examination and the presentation of his own expert witness. *See State v. Dominick S. Hodges*, No. M2011-02668-CCA-R3-CD, 2013 WL 1235653, at *10 (Tenn. Crim. App. Mar. 28, 2013) (upholding trial court's admission of DNA evidence which was challenged as unreliable due to the procedures and protocols used). Insofar as the Defendant challenges the evidence on the basis that the DNA profile developed through Y-STR analysis was incapable of uniquely identifying the Defendant, this challenge likewise would affect only the weight and not the admissibility of the evidence. *See Powers v. State*, 343 S.W.3d 36, 45 n.13 (Tenn. 2011) (noting that a DNA match to the accused through Y-STR testing is evidence that the accused was a contributor to the sample even though the Y chromosome is not unique). We conclude that the Defendant is not entitled to relief.

II. Post-Conviction DNA Analysis

The Defendant next challenges the denial of his motion for an expert witness and his motion for post-conviction DNA analysis. We conclude that the Defendant did not establish a reasonable probability that he would not have been prosecuted or convicted had the DNA evidence proven exculpatory and that he did not establish that the evidence had not been previously analyzed or was not subjected to the requested analysis, which could resolve an issue not resolved by previous analysis. Accordingly, he is not entitled to relief.

The Post-Conviction DNA Analysis Act of 2001 provides for the opportunity to obtain DNA testing for offenders convicted of enumerated offenses, including rape of a child and attempted rape of a child. T.C.A. § 40-30-303; *Griffin v. State*, 182 S.W.3d 795, 798 (Tenn. 2006). Testing is mandatory when:

- (1) A reasonable probability exists that the petitioner would not have been prosecuted or convicted if exculpatory results had been obtained through DNA analysis;
- (2) The evidence is still in existence and in such a condition that DNA analysis may be conducted;
- (3) The evidence was never previously subjected to DNA analysis or was not subjected to the analysis that is now requested which could resolve an issue not resolved by previous analysis; and

(4) The application for analysis is made for the purpose of demonstrating innocence and not to unreasonably delay the execution of sentence or administration of justice.

T.C.A. § 40-30-304.⁴

A reasonable probability under the statute is a probability sufficient to undermine confidence in the outcome. *Powers v. State*, 343 S.W.3d 36, 55 (Tenn. 2011). “Under either the mandatory or discretionary provision, all four elements must be met before DNA analysis will be ordered by the court.” *Id.* at 48.

In determining whether this standard has been satisfied, the court indulges in a presumption that the results will be exculpatory. *Id.* at 55 (citing *Pervis Payne v. State*, W2007-01096-CCA-R3-PD, 2007 WL 4258178, at *10 (Tenn. Crim. App. Dec. 5, 2007); *Jack Jay Shuttle v. State*, No. E2003-00131-CCA-R3-PC, 2004 WL 199826, at *5 (Tenn. Crim. App. Feb. 3, 2004)). The court examines the remaining evidence in view of the possible effect that exculpatory evidence would have had on the fact-finder or prosecution. *Id.* “[T]he analysis must focus on the strength of the DNA evidence as compared to the evidence presented at trial—that is, the way in which ‘the particular evidence of innocence interacts with the evidence of guilt.’” *Id.* (quoting Brandon L. Garrett, *Claiming Innocence*, 92 Minn. L. Rev. 1629, 1646 (2008)). This analysis does not constitute a mere reevaluation of the sufficiency of the convicting evidence viewed in the light most favorable to the State. *Id.* at 57. Ultimately, the court in *Powers* examined whether there was a reasonable probability that the presumptively favorable evidence would have resulted in reasonable doubt held by at least one juror. *Id.* at 58.

The trial court denied the motion for post-conviction DNA analysis, finding that the Defendant had not demonstrated a reasonable probability that he would not have been prosecuted or convicted if exculpatory results had been obtained through DNA analysis. T.C.A. § 40-30-304(1). The trial court also found that the Defendant failed to show that the evidence “was never previously subjected to DNA analysis or was not subjected to the analysis that is now requested which could resolve an issue not resolved by previous analysis.” T.C.A. § 40-30-304(3).

We indulge in the presumption that the results of any testing would be exculpatory: in this case, that the Y-STR profile obtained from the remaining sample would differ from the Y-STR profile which Ms. Leal obtained and which matched the Defendant’s DNA. Such a result would suggest that the original DNA analysis

⁴ The Defendant does not argue that he was entitled to discretionary testing under T.C.A. § 40-30-305.

performed by Ms. Leal was not reliable. The State's evidence at trial included the victim's explicit testimony that the Defendant had been sexually abusing her for an extended period of time. Her testimony and her forensic interview were consistent and convincing. The victim demonstrated sexual knowledge atypical for her age by drawing the Defendant's genitalia with hair, by drawing a picture of the Defendant masturbating, and by describing ejaculation. During her forensic interview, the seven-year-old victim stated that the Defendant forced her to watch pornography on a website called either "B-E-E-G" or "G-E-E-B," and numerous visits to the pornographic website "beeg.com" were recovered from the computer that the Defendant used. Spermatozoa were recovered from the victim's labia. There is no reasonable probability that the Defendant would not have been prosecuted or convicted if new testing were to render the prior DNA evidence inconclusive. We also agree with the trial court that the DNA analysis requested has already been performed. Replicating the testing might result in either confirming or undermining the initial result, but the plain terms of the statutory requirement have not been met. We conclude that the Defendant is not entitled to relief.

The Defendant does not present any legal argument in his brief regarding the denial of his motion for an expert witness. Accordingly, this issue is waived. Tenn. Ct. Crim. App. R. 10(b) ("Issues which are not supported by argument, citation to authorities, or appropriate references to the record will be treated as waived in this court."); *State v. Hester*, 324 S.W.3d 1, 80 (Tenn. 2010) ("A reviewing court may deem an issue waived when a party fails to develop an argument in support of its contention or merely constructs a skeletal argument.").

CONCLUSION

Based on the foregoing, we affirm the judgments of the trial court.

JOHN EVERETT WILLIAMS, PRESIDING JUDGE