IN THE COURT OF COMMON PLEAS
CUYAHOGA COUNTY, OHIO

THE STATE OF OHIO
    Plaintiff

Case No: CR-21-660657-A

Judge: DANIEL GAUL

MICHAEL J CARTER
    Defendant

INDICT: 2907.02 RAPE /SVPS
           2919.22 ENDANGERING CHILDREN

JOURNAL ENTRY

DEFENDANT'S MOTION IN LIMINE AND MOTION TO DISMISS ARE DENIED. OSJ

THIS ENTRY TAKEN BY JUDGE JANET R BURNSIDE.

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CUYAHOGA COUNTY

HEAR
05/30/2024

IN THE COURT OF COMMON PLEAS
CRIMINAL DIVISION
CUYAHOGA COUNTY, OHIO

STATE OF OHIO	)	CASE NO. CR-21-660657
Plaintiff	)	
	)	JUDGE JANET BURNSIDE
v.	)	
	)	
MICHAEL CARTER	)	
Defendant	)	

Defendant, Michael Carter, filed a Motion in Limine on May 17, 2023, to challenge the reliability of the probabilistic genotyping program TrueAllele generally, and as used by the Cuyahoga County Regional Forensic Science Laboratory specifically, and to prohibit the prosecution from introducing any evidence related to TrueAllele or its use under to *Daubert v. Merrell Dow Pharmaceuticals, Inc.,* 509 U.S. 579, 113 S.Ct. 2786 (1993) and Evid. R. 702. The State of Ohio filed a Brief in Opposition; Defendant filed (through new counsel) a supplemental motion in limine (titled a "Motion to Dismiss Indictment") on February 12, 2024. The Court held a *Daubert* hearing based on the contentions of both motions on March 11, 2024, and March 12, 2024. Thereafter the parties filed proposed findings of fact and conclusions of law.

Upon review of the file and records in this case and the evidentiary record of the hearing, the Court makes the following Findings of Fact and Conclusions of Law with respect to Defendant's Motions in Limine of May 17, 2023, and February 12, 2024, asking to prohibit evidence related to TrueAllele or resulting from its use:

Findings of Fact

1. Defendant Michael Carter ("Defendant") argues that "testimony and evidence regarding likelihood ratios using TrueAllele Casework… are not sufficiently reliable to be deemed admissible in a criminal trial" pursuant to *Daubert v. Merrell Dow Pharmaceuticals, Inc.,* 509 U.S. 579, 113 S.Ct. 2786 (1993), as adopted by the Ohio Supreme Court in *Miller v.*

Bike Athletic Co. (1998), 80 Ohio St.3d 607, 687 N.E.2d 735, and Evid. R. 702. Defense Motion in Limine, unnumbered p. 11. In addition, Defendant asserts that his DNA had to be tested fourteen times before a match was reported. *Id.*

2. William Allan testified for the state. He is a casework supervisor at Cybergenetics, a position he has held for over 20 years. Tr. 11. His educational experience includes a Bachelor of Science degree in molecular and cell biology and a Master of Science degree in information science. Tr. 12; State's Exhibit 7. He is certified as a basic TrueAllele operator, an advanced TrueAllele operator and a reporting scientist. Tr. 12. He is an author on sixteen peer-reviewed publications, including three related to TrueAllele.

3. Allan has previously testified about DNA analysis results generated using TrueAllele over twenty-five times, including for the prosecution, defense, and in postconviction hearings Tr. 13-14. The Court identified Allan as an expert in DNA evidence interpretation. Tr. 15.

4. TrueAllele's function is to take electronic DNA evidence and "sort out the DNA contributors" without requiring the identity of a particular person that should be present. Tr. 15. Once TrueAllele has identified the DNA contributors, a DNA profile can be compared to an individual's DNA profile to calculate a match statistic. Tr. 15-16. The match statistic is expressed as a likelihood ratio, which measures how much more probable someone matches the evidence relative to a coincidental match. Tr. 28; *see also* Tr. 282. TrueAllele is probabilistic genotyping software. Tr. 22.

5. TrueAllele is used to interpret DNA evidence after the physical evidence has been collected from a crime scene and converted to DNA evidence by a laboratory. Tr. 19-20; State's Ex. 8, 139, 177-79.

6. TrueAllele allows users to provide the software with the number of contributors, how much time to spend working on the mixture, and a differential degradation. Tr. 34. It does not use suspect information to infer genotypes. Tr. 33-34.

7. TrueAllele is based on a Bayesian inference, a well-established mathematical principle that has been used since the eighteenth century. Tr. 36. The inference was also used in the development of atomic weapons in the 1940s and 1950s. Tr. 37. Likelihood ratios were also used around the same time in the 1940s and 1950s. Tr. 38.

8. TrueAllele relies on Markov Chain Monte Carlo sampling which has been in use for at least 20 years, if not much longer. Tr. 38. TrueAllele was coded in a software language called "MATLAB" which is often used in engineering projects. Tr. 38-39. The program then looks for patterns that best explain the evidence. Tr. 24-27. The pattern that better explains the data has a higher likelihood ratio. A negative likelihood ratio statistically excludes an individual as a contributor to the evidence. Tr.30-32; State's Ex. 8.

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9. TrueAllele has been validated. It was tested in eight validation studies published in peer-reviewed journals and in thirty-four additional validation studies. Tr. 40-41. The published validation papers fall into two categories: studies using lab-generated data and studies using real casework data. Tr. 49. Lab-generated data means that the lab staff create DNA mixtures from known individual profiles. Tr. 50; 278-279. The expected outcome is known before the DNA data is run through TrueAllele. *Id.* DNA mixtures are generated in a way that covers the scenarios encountered in casework. Tr. 279. Casework validation involves data that is taken from adjudicated cases, and the results TrueAllele obtains are compared to results obtained previously. *Id.*

10. Peer review is a process in which scientific papers are reviewed by other scientists prior to publication in a journal. Tr. 51. The identity of the reviewing scientists is unknown to the authors but the reviewers are familiar with the topic of the paper. *Id.* The anonymous reviewers evaluate the work and suggest edits or changes before determining that it is ready for publication. Tr. 147. The authors of the paper cannot choose who the paper is sent to for review. *Id.* The reviewers do not work with the authors. *Id.* Of the eight peer-reviewed validation studies, Cybergenetics staff were authors in all but one. *Id.*

11. The peer-reviewed validation papers using lab-generated mixtures are: (1) An Information Gap in DNA Evidence Interpretation, published in 2009, Tr. 53; State's Ex. 9; State's Ex. 14; (2) DNA Mixture Genotyping by Probabilistic Computer Interpretation of Binomially Sampled Laser Captured Cell Populations, published in 2013, State's Ex. 9; State's Ex. 14; (3) TrueAllele Genotype Identification of DNA Mixtures Containing up to Five Unknown Contributors, published in 2015, Tr. 64-65; State's Ex. 9; State's Ex. 14; (4) Establishing the Limits of TrueAllele Casework: A Validation Study, published in 2015; (5) Validating TrueAllele Interpretation of DNA Mixtures Containing up to Ten Unknown Contributors, published in 2019, Tr. 67, 149; State's Ex. 9; State's Ex. 14.

12. The peer-reviewed validation papers using casework data are: (1) TrueAllele Casework on Virginia DNA Mixture Evidence: Computer and Manual Interpretation in 72 Reported Criminal Cases, published in 2014, Tr. 54; State's Ex. 9; State's Ex 14; (2) Validating TrueAllele DNA Mixture Interpretation, published in 2011, Tr. 62; State's Ex. 9; State's Ex. 14; (3) New York State TrueAllele Casework Validation Study, published in 2013; Tr. 64; State's Ex. 9; State's Ex. 14.

13. TrueAllele's error rate can be measured in terms of its specificity. Tr. 55. Its accuracy is also determined by evaluating its sensitivity and reproducibility. Tr 54-55. Sensitivity is meant to measure the extent to which the method identifies the correct person. Tr. 55. It measures the lower limits of DNA necessary to identify a contributor in a mixture. Tr. 280. Specificity is meant to measure the extent to which the method is not identifying the wrong person, or the rate of false positives. Tr. 55; Tr. 285. Reproducibility measures how similar independent runs of the same data using the same parameters are. *Id.*; Tr. 61; Tr. 281. TrueAllele generates results with a known error rate that has been determined through repeated testing. Tr. 286.

14. In the Virginia casework study, TrueAllele's error rate was 0.005%. Tr. 60. The error rate of the manual review method that the Virginia lab previously used was 2%. The same study showed that TrueAllele's results were highly reproducible. Tr. 62.

15. In the paper that Cybergenetics published with the Cuyahoga County Regional Forensic Science Laboratory ("CCRFSL") in 2019, Cybergenetics and CCRFSL ran the same data independently, with each lab unaware of what the other was doing. Tr. 68. There was no significant difference between the two sets of results. *Id.* This means there was no way to tell from the results whether the data had been run by Cybergenetics or by CCRFSL using traditional DNA testing procedures. *Id.*

16. TrueAllele was used to help identify the victims' remains in the World Trade Center disaster. Tr. 42. A science board for the Virginia Department of Forensic Science approved the use of TrueAllele. *Id.*

17. Validation means testing something to see that it works as it is supposed to. Cybergenetics and crime labs validate TrueAllele before using it, meaning that the software is tested to ensure it works properly. Tr. 47.

18. Other probabilistic genotyping systems exist. Two of these are STRMix and EuroForMix. Tr. 44. STRMix is used by the FBI. *Id.* A lab in Virginia conducted a study comparing TrueAllele and STRMix and found they reached the same result 91% of the time. Tr. 81. In addition to using STRMix, the FBI will send difficult cases to Cybergenetics for analysis with TrueAllele. *Id.* These include cases with more than five unknown contributors of very low-level data. Tr. 148.

19. TrueAllele has been the subject of 43 admissibility hearings, including two Ohio cases, *State v. Shaw* and *State v. Mathis*. Tr. 45. The TrueAllele evidence was admitted in both Ohio cases. Tr. 46. Among the 43 admissibility rulings, six have generated appellate precedent approving TrueAllele's use. State's Ex. 14. Cybergenetics has reviewed over 1200 cases from 46 states. Tr. 73

20. Cybergenetics has sent reports generated using TrueAllele to 46 states. There are ten laboratories in nine states using TrueAllele, including the Cuyahoga County Regional Forensic Science Laboratory ("CCRFSL") in Cleveland. Tr. 49. Cybergenetics staff have testified in 135 trials in 21 states. TrueAllele has been used in eleven cases to exonerate wrongfully convicted individuals. Tr 79. One notable exoneration was of a man named Darryl Pinkins who had been in prison for twenty years in Indiana. Tr. 80. TrueAllele identified five contributors in the DNA evidence in that case; none of which were a match with Pinkins. *Id.*

21. Computer-based DNA analysis methods such as probabilistic genotyping are regulated by the Scientific Working Group on DNA Analysis Methods ("SWGDAM"). Cybergenetics has provided documentation to show how they comply with those standards. Tr. 43, 76; State's Exhibit 10. In addition, the American National Standards Board issues guidelines for the forensic community. Tr. 77. Cybergenetics also documents how it complies with those standards. *Id.*

22. When CCRFSL purchased TrueAllele, their lab staff met with Cybergenetics staff for training. CCRFSL staff traveled to Pittsburgh and there has also been additional training conducted virtually. Tr. 82-83.

23. Allan reviewed the data that was generated from the evidence in Defendant's case. Tr. 83. He determined that it adhered to the standards and protocols that govern the use of TrueAllele. Tr. 83-84. Allan determined that CCRFSL had done an initial run to determine whether the victim's DNA was present in the evidence. Tr. 84. The lab then went on to consider three and four contributors. Tr. 85. Allan determined through his own review that the existence of three and four contributors were supported by the electropherogram data. *Id.*

24. Allan was familiar with the claim that the data was run fourteen times before a match statistic was generated for the Defendant. Tr. 86. Allan verified that each of the three and four contributor runs had an inclusionary match statistic for the Defendant. Tr. 87. The defendant does not appear in the initial two contributor screening runs, but this result is expected because TrueAllele requires that a sufficient number of contributors is selected for a reliable answer. *Id.* Selecting too many contributors does not affect the results in this way. Tr. 88; 294. The defendant was never excluded in any three- or four-contributor runs. Tr. 88-89.

25. Britney Szovoda testified. She is a DNA analyst at the Cuyahoga County Regional Forensic Science Laboratory. Tr. 164. She has a bachelor's degree in biology and a master's degree in pharmaceutical sciences with a concentration in DNA forensic serology. Id. Her training included two courses provided by Cybergenetics on the use of TrueAllele. Tr. 165. When she completed her training in DNA interpretation, including the use of TrueAllele, she received a memo that documented completion of that training. Tr. 167; State's Ex. 6. The Court recognized Ms. Szovoda as an expert in DNA analysis. *Id.*

26. Szovoda explained that TrueAllele is a tool that the lab uses for DNA mixture interpretation. Tr. 181. She explained the statistics that she checks to ensure accuracy when using TrueAllele including the standard deviation and the Gelman-Rubin statistic. Tr. 181. The parameters can be adjusted based on those statistics. Tr. 182. The DNA analyst uses the expertise they obtained through education and experience when determining the number of contributors represented in an electropherogram. Tr. 182.

27. Szovoda verified that the lab does screening with TrueAllele assuming two contributors to check for the presence of the victim in the mixture, regardless of how many contributors the data might show. Tr. 183. The purpose of this step is to verify the presence of the victim's DNA on the evidence item. *Id.* Szovoda did the DNA analysis in Defendant's case. After this screening run was done on Defendant's case, Szovoda reviewed the data and determined that there were "definitely more than two people" in the data. Tr. 183-84; Tr. 199. The initial report was released assuming three contributors. Tr. 183; Tr. 202.

28. Adding contributors does not change the data, only how TrueAllele looks at the data. Tr. 195. If the analyst told it to only consider two contributors, the program would only look for data from two people. Any additional data would be considered noise or variance. Tr. 196-97.

29. The item submitted for review in this case was the victim's underwear, which had been manipulated during the offense. Tr. 185. This was submitted along with a reference standard for the victim. *Id.* The match table generated encompasses all the work done with TrueAllele on Defendant's case. Tr. 192. The table shows the number of contributors that the analyst asked TrueAllele to consider. Tr. 193. The lab runs every sample twice. *Id.* Checking the reproducibility adds reliability to their runs. Tr. 200.

30. After the runs in which TrueAllele considered three contributors, TrueAllele inferred three genotypes from the data. Tr. 203. The third profile was consistent with a male. *Id.* Some time later, the lab received a buccal swab from Defendant. Tr. 204. The DNA profile generated from that swab was compared to the genotype that TrueAllele had already inferred. Tr. 207. Although, as expected, there was no association between the defendant and the two-contributor runs, Defendant positively associated with the relevant genotype in all the three-contributor runs. Tr. 207-08.

31. The lab learned that there may be a biological relationship between the contributors to the mixture. Tr. 297. Because family members can share alleles, it is more common for two people to be present in a single allele. Tr. 208. To give Defendant the benefit of the doubt, the lab asked TrueAllele to resolve the same data using four contributors. *Id.* Defendant is still positively associated with the third inferred genotype in all three- and four-contributor runs. Tr. 210-11; Tr. 243. Although the lab's protocols did not require it to calculate an error rate when the logarithm of the likelihood ratio is above four, the lab nonetheless calculated an error rate for the case. Tr. 213-217. The chance of a false inclusion was 1 in 121,000. Tr. 217.

32. Dr. Nasir Butt testified. He is the DNA technical supervisor at the Cuyahoga Regional Forensic Science Laboratory ("CCRFSL"). Tr. 261. He holds bachelor's and master's degrees in human biology and a Ph.D. in forensic science. *Id.*

33. CCRFSL is accredited by the ANSI National Accreditation Board, and it follows the FBI Quality Assurance Standards. Tr. 270. Accreditation requires audits by external agencies who visit the lab and is necessary for access to the National DNA Index system. Tr. 270-71.

34. In 2014, the lab was facing increasing challenges due to the prevalence of mixed DNA samples. Tr. 272-73. Approximately 50% of the lab's reports were inconclusive due to the number of contributors present. Dr. Butt started to research the available systems to address this problem and came across STRMix and TrueAllele. Dr. Butt selected TrueAllele because at the time, TrueAllele was known for its use in identifying victims in the World Trade Center, the National Institute of Science and Technology had used TrueAllele to provide standard reference material, and the New York Medical Examiner's Office was using TrueAllele. Tr. 274.

35. CCRFSL took approximately two years to validate the TrueAllele system and train its staff. *Id.* Cybergenetics issued two certificates to Dr. Butt when he completed extensive training on the use of TrueAllele. Tr. 275; State's Ex. 5A and 5B. Proficiency was demonstrated in part by processing evidence items. Tr. 276. In addition, CCRFSL performed an in-house validation prior to using TrueAllele for its casework that was independent of Cybergenetics. Tr. 277. The results were published in a peer-reviewed journal. State's Ex. 9; Tr. 279. The system was sensitive enough, reliable enough, and specific enough to address CCRFSL's needs. Tr. 281. CCRFSL started using TrueAllele for case work in 2017. Tr. 299. Since then, the lab has used TrueAllele to analyze over 7000 cases. Tr. 299.

36. Since 2018, every time a CCRFSL analyst has testified as an expert in a trial in Cuyahoga County, the testimony has been based on TrueAllele results. Tr. 299. In that time, no trial court has excluded the testimony of the analyst based on TrueAllele's reliability. Tr. 300.

37. Based on the results of their study, CCRFSL determined that if there is a likelihood ratio of at least 10,000, they are confident that a person who did not contribute their DNA to the mixture will not be falsely identified. Tr. 283. If the results of DNA analysis are less than a 10,000 likelihood ratio, the results are reported as inconclusive. Tr. 285.

38. Dr. Butt characterized the statement that fourteen runs were necessary to identify Defendant's DNA as "incorrect." Tr. 289. The two-contributor "screening runs" identify if the victim is present in the mixture, which is information that can be used in later runs to help identify other people who contributed to the mixture. *Id.* This screening is especially important where the DNA swab is taken from the victim's person. Tr. 290. Knowing the genotype of one of the contributors to the mixture allows that profile to be "peeled off." Tr. 291. This facilitates identification of the remaining genotypes in complex mixtures. *Id.*

39. Dr. Butt reiterated the way that TrueAllele identifies contributors. Tr. 293-94. TrueAllele's analysis is limited by the number of contributors that it is asked to consider. Tr. 292-94. If it is only considering two contributors, it will identify the contributor who has contributed the most DNA to the mixture and then consider all of the remaining data to be a second contributor. Tr. 292. Once it has identified a contributor, increasing the number of runs does not affect the genotypes that it has already identified. Tr. 293. For example, with three contributors, the first three contributors will always be captured no matter how many additional contributors are added. Tr. 294. The data containing the defendant's profile was "there from day one." Tr. 298.

40. At the conclusion of the hearing, the Court admitted State's exhibits 1-21. Tr. 339-344. Exhibits 1-6 were attached to the State's brief in opposition to the motion in limine. Tr. 339.

Conclusions of Law

41. Evid. R. 104(A) states, in relevant part, that "preliminary questions concerning the qualification of a person to be a witness, the existence of a privilege, or the admissibility of evidence shall be determined by the court."

42. Evid. R. 702 states that: "A witness may testify as an expert if all of the following apply: (A) The witness' testimony either relates to matters beyond the knowledge or experience possessed by lay persons or dispels a misconception common among lay persons; (B) The witness is qualified as an expert by specialized knowledge, skill, experience, training, or education regarding the subject matter of the testimony; (C) The witness' testimony is based on reliable scientific, technical, or other specialized information. To the extent that the testimony reports the result of a procedure, test, or experiment, the testimony is reliable only if all of the following apply: (1) The theory upon which the procedure, test, or experiment is based is objectively verifiable or is validly derived from widely accepted knowledge, facts, or principles; (2) The design of the procedure, test, or experiment reliably implements the theory; (3) The particular procedure, test, or experiment was conducted in a way that will yield an accurate result."

43. Generally, "courts should favor the admissibility of expert testimony whenever it is relevant and the criteria of Evid. R. 702 are met." *State v. Nemeth*, 82 Ohio St.3d 202, 207, 694 N.E.2d 1332, 1998 -Ohio- 376.

44. When making a determination about the admissibility of expert testimony, the inquiry should focus on whether the principles and methods employed by the expert witness are reliable, and not whether the conclusions are correct. *Miller v. Bike Athletic Co.* (1998), 80 Ohio St.3d 607, 687 N.E.2d 735. A judge decides wither the experts are reliable, the jury decides whether the experts are correct.

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45. In evaluating the reliability of scientific evidence, courts should consider several factors: (1) whether the theory or technique has been tested; (2) whether it has been subjected to peer review; (3) whether there is a known or potential rate of error; (4) whether the methodology has gained general acceptance. *Miller v. Bike Athletic Co.* (1998), 80 Ohio St.3d 607, 611, 687 N.E.2d 735. While these factors aid in determining reliability, the inquiry is flexible. *Id.* See also *State v. Wangler*, 3rd Dist., Allen Co. No. 1-11-18, 2012-Ohio-4878.

46. The above "factors are not a 'definitive checklist or test,' and no one factor is dispositive to the exclusion of others." *State v. Langlois*, 2 N.E.3d 936, 2013-Ohio-5177, citing *Terry v. Caputo*, 115 Ohio St.3d 351, 2007-Ohio-5023, 875 N.E.2d 72, ¶ 25. "[E]ven if [the expert's] opinion has neither gained general acceptance by the scientific community nor has been the subject of peer review, these are not prerequisites to admissibility under *Daubert*[.] * * * Rather, they are just factors for a court to consider in determining reliability. Again, the *Daubert* court recognized that while peer review may be helpful, it is not absolutely necessary for an opinion to be admissible." *Miller v. Bike Athletic Co.,* 80 Ohio St. 3d at 613 (quoted in *State v. Langlois*, FN 1).

47. The admission or exclusion of evidence is reviewed under an abuse-of-discretion standard of review. *State v. Diar,* 120 Ohio St.3d 460, 900 N.E.2d 565, 2008-Ohio-6266 at ¶66.

48. The Court finds that Defendant's motions in limine to exclude all evidence derived from use of TrueAllele are not well taken. The State established that TrueAllele satisfies Evid. R. 702 and the factors set forth in *Miller v. Bike Athletic Co.* (1998), 80 Ohio St.3d 607, 611, 687 N.E.2d 735.

49. The Court finds that the subject matter at issue, DNA interpretation, relates to matters beyond the knowledge or experience possessed by lay persons. Evid. R. 702(1). This was not contested during proceedings on this matter.

50. The Court finds that testimony regarding TrueAllele analyses is based on reliable scientific, technical or other specialized information. Evid. R. 702(3). TrueAllele is derived from well-established mathematical principles and is objectively verifiable, as evident in the multiple validation studies conducted on TrueAllele. TrueAllele was observed to yield an accurate result. The program was observed to have very low error rates on both single source and mixture DNA. The error rates remained low even when the number of DNA contributors increased.

51. The Court finds that TrueAllele has been extensively tested. The State presented the Court with eight published validation studies as well as over thirty additional unpublished internal validation studies in which TrueAllele was tested on both single source and mixture DNA. The validation studies included analysis of DNA mixtures of up to ten contributors. The validation studies also tested TrueAllele using low template DNA. TrueAllele was
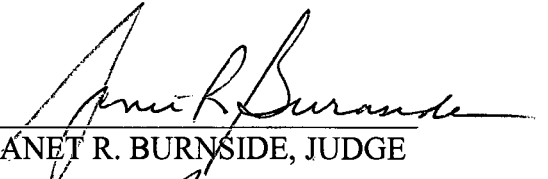
validated by the Cuyahoga County Regional Forensic Science Lab prior to its use in Defendant's case.

52. The Court finds that TrueAllele has been subjected to peer review. During the hearing, the State presented the Court with eight published peer reviewed articles: (6) TrueAllele Casework on Virginia DNA Mixture Evidence: Computer and Manual Interpretation in 72 reported criminal cases, published in 2014; (7) Validating TrueAllele DNA Mixture Interpretation, published in 2011; (8) New York State TrueAllele Casework Validation Study, published in 2013. These were presented in State's Exhibit 9. The remaining five published peer reviewed articles are listed above in paragraph 11.

53. The Court finds that TrueAllele has a known or potential error rate, which was documented in the Virginia and Cuyahoga County validation studies.

54. The Court finds that TrueAllele's methodology has gained general acceptance within the forensic science community, as evidenced by its use in ten crime labs throughout the country, including the Cuyahoga County Regional Forensic Science Laboratory. Although the FBI uses a similar system called "STRMix," the FBI does, on occasion, submit cases to Cybergenetics for TrueAllele analysis. TrueAllele has been the subject of 43 admissibility hearings and the evidence was admitted every time the evidence was timely presented and when the court considered its admissibility under *Daubert*. Six of those decisions were affirmed by courts of appeals and one by a state supreme court.

55. The Sixth Circuit Court of Appeals considered the admissibility of evidence under Daubert from a similar system called "STRMix." *United States v. Gissantaner*, 990 F.3d 457 (6th Cir. 2021). The Sixth Circuit found that STRMix was, in the words of Fed. R. Evid. 702, the 'product of reliable principles and methods." *Id.* at 467.

56. The Court notes that while these factors aid in determining reliability, the inquiry is flexible. *Miller v. Bike Athletic Co.* (1998), 80 Ohio St.3d 607, 611, 687 N.E.2d 735; *See also State v. Wangler*, 3rd Dist., Allen Co. No. 1-11-18, 2012-Ohio-4878.

57. The Court finds that Brittney Szovoda and CCRFSL reliably applied TrueAllele software to the evidence in this case, based on the testimony of William Allan, Dr. Nasir Butt and Brittney Szovoda.

58. The Court finds that there is no factual basis for the claim that fourteen runs were necessary to generate a match between the evidence and Defendant's DNA.

59. Defendant finds significance in Dr. Butt's testimony that Defendant's DNA was not "a match" but a "match statistic." It is unscientific to refer to a "match"; DNA analysis does not yield the conclusion that a DNA match was found whether traditional DNA testing or

TrueAllele is used. Match statistic in the scientifically approved term for identifying a person's genotype in a DNA mixture. In the vernacular, people speak and think of "DNA matches" but the scientific analysis does not produce anything of the sort.

60. The Court concludes that Defendant's motions in limine lack merit for the reasons detailed above. The State of Ohio presented evidence and met its burden of proof that TrueAllele entirely satisfies the evidentiary requirements of the *Daubert* decision and Ohio Evid. R. 702.

Based on the foregoing findings and conclusions Defendant's motions in limine to prohibit the admission of any TrueAllele evidence (and the Motion to Dismiss Indictment) are hereby denied.

JANET R. BURNSIDE, JUDGE

Date: 5/31/24