Superior Court of the District of Columbia, Civil Division.

UNITED STATES of America

v.

Ida Chase

No. F-7330-99.

Jan. 10, 2005.

Edward J. Ungvarsky, Esq., Renee Raymond, Esq., Alison Flaum, Esq ., Washington, DC.

Deborah Sines, Esq., Kim Herd, Esq., Washington, DC.

MEMORANDUM AND ORDER

PATRICIA A. BRODERICK, Judge.

This matter comes before the court upon the Defendant's Motion to Exclude Mitochondrial DNA "Inclusion" Evidence and Expert Testimony Therein, as well as the numerous supplemental motions and government responses. This memorandum and Order also addresses the Government's Proposed Findings of Fact and Conclusions of Law, Defendant's Opposition to the Government's Proposed Findings of Fact and Conclusions of Law, and Defendant's Motion to Reconsider the Court's Order Admitting Mitochondrial DNA Evidence, and to Reopen the Hearing Regarding Government's Mitochondrial DNA Inclusion Evidence and Sequence Frequency Estimated Based on the SWGDAM Database.

I. Procedural History

On March 27, 2003, the Defendant filed a Motion to Exclude Mitochondrial DNA Test Results. The Motion challenged the admissibility of the DNA evidence on the grounds that neither the science of mitochondrial DNA, nor the database used to explain the results of the mitochondrial DNA testing, were generally accepted in the scientific community. On August 4, 2003, the government filed its Response in Opposition to Defendant's Motion to Exclude Mitochondrial DNA "Inclusion" Evidence and Expert Testimony Therein. Thereafter, the following were filed: on September 29, 2003, Defendant's Reply to Government's Opposition to Defendant's Motion to Exclude mtDNA "Inclusion" Evidence, Expert Testimony and Probabilities of Inclusion; on June 16, 2004, Defendant's Supplement to Motion to Exclude mtDNA "Inclusion" Evidence and Expert Testimony Therein; on July 8, 2004, Government's Supplemental Motion in Opposition to the Defendant's Motion to Exclude mtDNA Evidence offered by the Government in this case; on July 9, 2004, Defendant's Second Supplement to Motion to Exclude mtDNA "Inclusion" Evidence and Expert Testimony Therein; and since that time numerous supplemental oppositions and responses filed by the government and defense counsel.

Prior to the commencement of the jury trial in this case, the court conducted a *Frye*

hearing, pursuant to *Frye v. United States*, 54 App. D.C. 46, 293 F. 1013 (1923). Over the course of five days, the Court heard extensive testimony from seven expert witnesses, four on behalf of the Government and three for the Defendant.[1] In addition to the testimony of the experts, the Court considered the extensive pleadings, scientific articles and other materials submitted in pleadings by both parties, affidavits proffered by both parties and the arguments of counsel. Based on those materials, the Court, at the end of the *Frye* hearing, issued an oral ruling denying the Defendant's Motion to Exclude Mitochondrial DNA "Inclusion" Evidence and Expert Testimony, but did not give a detailed explanation for its ruling at that time.

On July 12, 2004, the above-mentioned case went to trial.[2] Because of the inability of the jury to reach a verdict as to two of the counts, the Court declared a mistrial. Subsequently, the government filed its Proposed Findings of Fact and Conclusions of Law for the Court to consider in issuing its evidentiary order. The defense, after requesting leave to also file Findings of Fact, instead filed an Opposition to the Government's Proposed Findings of Fact and Conclusions of Law and a Motion to Reconsider the Court's Order Admitting Mitochondrial DNA Evidence, and to Reopen the Hearing Regarding Government's Mitochondrial DNA Inclusion Evidence and Sequence Frequency Estimates Based on the SWGDAM Database. The government then filed its response to the defense's newest motion.

This Memorandum and Order explains the Court's denial of the original defense motion and denies the newly filed motion to reconsider.

II. Introduction

On October 16, 1999, the Defendant was charged with Premeditated Murder, Felony Murder and Robbery of a Senior Citizen as a result of events allegedly occurring on July 8, 1996. The decedent allegedly was robbed and later was found beaten; he suffocated to death on a dead-end street, where witnesses saw the body, wrapped in a brown comforter, being dumped out of the back of a U-Haul truck.
Originally, the government sought to introduce evidence of the results of mitochondrial DNA (hereinafter referred to as "mtDNA") analysis conducted by the FBI Laboratory.[3]

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[1] Some of the witnesses testified before the Court personally while others testified via two-way video conferencing.

[2] The jury deliberated and acquitted the Defendant on First Degree Premeditated Murder, but was unable to reach a verdict on the charges of Felony-Murder and Robbery of a Senior Citizen.

[3] "Mitochondria" are small, circular organelles found outside the nuclei of each human cell. There are 500 to 2,000 mitochondria in each human cell. Each mitochondrion contains several strands of DNA. (The defense claims there is only one strand of mtDNA per cell). The DNA in mitochondria consists of 16,569 base pairs. Unlike the

The mtDNA analysis was conducted from hairs found at the scene of the incident, specifically on a handkerchief, comforter surrounding the victim's body and a towel found on the driver's seat of the victim's car. The results failed to exclude the Defendant and the Defendant's maternal relatives as potential contributors of some of the hairs tested by the laboratory.[4]

The government sought to introduce evidence of the mtDNA analysis results, as well as testimony regarding the statistical significance of the results. Specifically, the government sought to introduce the testimony of Dr. Constance Fisher. Dr. Fisher was a Federal Bureau of Investigation (FBI) analyst who interpreted the mtDNA analysis. Dr. Fisher compared the mtDNA sequence obtained from the evidence in this case and from the Defendant with the FBI scientific Working Group of DNA Analysis Methods, (hereinafter referred to as the "SWGDAM"), database.
The SWGDAM working group is a peer consensus group of forensic scientists and academics. (*Budowle* Tr. at 88-89).[5] Pursuant to federal mandate, the FBI Laboratory maintains the SWGDAM database. Dr. Budowle testified that the DNA Identification Act of 1994[6] gave the FBI the authority to set standards for DNA analysis in forensic crime labs, particularly government labs. (*Budowle* Tr. at 9). To do that, an advisory group was formed to make recommendations and set standards. *Id.* All forensic laboratories in the United States that conduct mitochondrial DNA testing use the SWGDAM database. (*Fisher* Tr. at ____).[7]

The Defendant opposed the introduction of the evidence and testimony, arguing that mtDNA was a new science without acceptance in the relevant scientific community, and that the database used to compare and explain the results was faulty and not acceptable under the relevant standards. Alternatively, the Defendant suggested that the Court could admit two evidentiary hairs that the Defendant had chosen to test pursuant to her rights under The Innocence Protection Act.[8] These tests confirmed the results obtained

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nuclear DNA genome, scientists have not successfully mapped the DNA strand found in mitochondria. MtDNA is usually only transmitted from mother to child, so all relatives within the maternal lineage will share the same mtDNA type. Because of this, a person's mtDNA sequence will never be unique. A wide variety of mtDNA profiles exist in the population.

[4] Unlike nuclear DNA, mtDNA is unable to give and exact match;
instead its presence indicates, based on maternal linkage, whether or not a person can be excluded as the contributor of the DNA sample.
[5] References to the transcript of the *Frye* hearing will be cited by the last name of the testifying witness followed by "Tr." and the page number.
[6] The DNA Identification Act of 1994, 42 U.S.C. § 14131 (1994)
[7] Because the court was unable to retrieve the transcript of the direct examination of Dr. Fisher from the *Frye* Hearing, all factual references to her testimony are based on notes taken by the Court during the hearing. Actual page numbers will be supplemented upon receipt of the transcript.
[8] The Innocence Protection Act of 2001, S. 486, 107th Cong. (2001), 147 Cong. Rec. S1999, 2001-03 (Mar. 7, 2001); H.R. 912, 107th Cong. (2001).

by the FBI Laboratory with respect to the hairs on the comforter, handkerchief and towel on the driver's seat of the victim's car, but excluded the Defendant as the contributor of the other evidentiary hairs found on the scene. The exclusion evidence did not have to rely on the comparison to other sequences in the SWGDAM database to be statistically significant. The Defendant's alternative position was, therefore, that if the Court found that the science and technology of mtDNA was sufficiently accepted and thereby admissible, the Court should find that the database used to determine statistical comparisons was still faulty. Under this theory, the government's "inclusion" evidence would not be admissible, but the defendant's "exclusion" evidence would be.

III. *Frye* Hearing

The Court conducted a *Frye* hearing, inviting each of the parties to present witnesses as well as affidavits.[9] The government presented the testimony of Dr. Constance Fisher, Dr. Terry Melton, Dr. Ranajit Chakraborty and Dr. Bruce Budowle. The defense presented the testimony of Dr. Frederika Kaestle, Dr. Terrence Speed, and Dr. Ricky Kittles. Additionally, both parties submitted voluminous scientific articles, book excerpts, and other written materials in support of their respective motions.

In a *Frye* Hearing, the test for admissibility of any novel scientific evidence at trial is whether the new technology or methodology has been sufficiently established to have "gained general acceptance in the particular field in which it belongs." *Frye*, 293 F. at 1014. The same standard applies to the admissibility of expert testimony on a given subject under *Dyas v. U.S.*, 376 A.2d 827, 832 (D.C.1977) and *Ibn-Thomas v. U.S.*, 407 A.2d 626, 638 (D.C.1979).
As to the admissibility of DNA evidence specifically, the standard is set under *United States v. Porter*, (referred to as "Porter II") 618 A.2d 629 (D.C.1992)(held that nuclear DNA evidence was generally accepted in the relevant scientific community). A party seeking to introduce evidence based upon new technology must demonstrate by a preponderance of the evidence, under the *Frye* test, that the relevant scientific community has generally accepted the technology. *Id.* at 633. Porter II noted that unanimity in the scientific community is not required to show general acceptance. *Id.* at 634. "[The] issue is consensus versus controversy over a particular technique, ... " *Id.* (quoting *Jones v. United States*, 548 A.2d 35, 42 (D.C.1988). *Frye* does not require unanimity. *Porter*, 618 A.2d at 634. The relevant scientific community within which a consensus must exist includes those "whose scientific background and training are sufficient to comprehend and understand the process and form a judgment about it." *Id.* Noting that "the probability of a coincidental match is an essential part of the DNA evidence," *Id* . at 640, *Porter II* holds that the statistical procedures for determining a match must pass muster under Frye. *Id.* at 631. In this regard, the *Porter II* Court

[9] Initially the court sought only affidavits, but eventually agreed to listen to actual testimony.

required that probability estimates of any match be conservative. *Id.* at 642-643.

a. MtDNA is generally accepted in the scientific community.

Scientists first discovered Mitochondrial DNA in 1964. Since at least the early 1990s, forensic scientists began using it to identify the remains of victims of war, natural catastrophes and accidents. (*Fisher* Tr. at ____). MtDNA was used by the Human Genome Project and to study human evolutionary history. (*Chakraborty* Tr. at 14). Notably, mtDNA was helpful in identifying the 9/11 victims at the World Trade Center. (*Charkraborty* Tr. at 14-18; *Budowle* Tr. at 10). The FBI has been using mtDNA in casework since 1996, and since that time mtDNA has been used in thousands of cases. (*Fisher* Tr. at ____).

The FBI started employing the technology in the early 1990s. The Court notes that none of the literature submitted on mtDNA questions the validity of mtDNA itself. MtDNA analysis is used for forensic purposes in regional laboratories in the United States, in approximately 50-100 laboratories within Europe and in other countries around the world. It is evident from a review of the literature, as well as the testimony during the *Frye* hearing, that mtDNA is generally accepted in the scientific community. Dr. Chakraborty, (*Chakraborty* Tr. at 48-49), Dr. Melton, (*Melton* Tr. at 163), Dr. Budowle, (*Budowle* Tr. at 50-52), and Dr. Kaestle, (*Kaestle* Tr. at 101-102) testified that mtDNA and its underlying techniques are accepted in the scientific community. No one testified that it was not generally accepted in the scientific community. The literature submitted further showed that the science is accepted.[10] Therefore, based on the testimony of the witnesses, affidavits of additional experts, written submission of the parties, and the numerous articles and appendices of the parties, it is clear that mtDNA is generally accepted in the scientific community.

b. The FBI's mtDNA methodology of mtDNA analysis is generally accepted in the scientific community.

The record before the Court, including the testimony of Dr. Fisher, shows that the FBI's methodology and procedures have been validated and in fact have been tested and retested. (*Fisher* Tr. at ____; *Budowle* Tr. at 15-16). This process has been subjected to peer review and publication. Uniform standards and protocols of quality control have been established with respect to the techniques and operations of mtDNA analysis. Dr. Budowle also testified that MtDNA analysis, as conducted by the FBI, is generally accepted in the scientific community. (*Budowle* Tr. at 50-52). He has also written on the subject:

[C]hallenges on mtDNA in the courtroom have been overwhelmingly unsuccessful. The techniques are well grounded and reviewed by the scientific community. Moreover, the scientific community is well aware of those factors that can impart the interpretation of results and does not find them to affect the reliability of mtDNA profiling. Forensic scientists take appropriate steps and evaluate new issues as they arise for their potential

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[10] *See* Terry Melton, et at., *Extent of Homogeniety of MtDNA of European Populations,* 42 J. Forensic Sci. 437 (1997); Gillian Tully, *Mitochondrial DNA, a Small But Valuable Genome,* London, First International Conference on Forensic Human Identification, 23-36, (1999).

impact.
Dr. Budowle, B., et. al. *Forensic and Mitochondrial Applications, Debates, and Foundations,* Ann. Rev. of Genomics and Genetics 119 133 (2003).
In the years since mtDNA's emergence, the process has been subject to peer review and there are no published criticisms of the FBI's methodologies sufficient in number or degree of dissension to overcome its reliability. (*Budowle* Tr. at 52). The FBI methodology uses sequence analysis that is generally accepted in the scientific community. The National Research Council, cited with approval in *Porter II* and other cases, approves this methodology for nuclear DNA. The literature suggests the same, reflecting that the use of MtDNA sequence analysis for forensic identity testing is robust and "validated".[11]

One expert's testimony in particular, which the Court fully credits, could not be clearer on this point. Dr. Budowle testified that FBI mtDNA practices and protocols are similar to, if not exact, and consistent with all the other mtDNA practices and protocols in other laboratories around the world. (*Budowle* Tr. at 51-53). According to Dr. Budowle, there is no document or consensus document that has generated concerning MtDNA for forensics, as there is for nuclear DNA, but there is no controversy. Dr. Budowle stated that there are other reports on mtDNA applications, but there probably will not be a consensus report because there is no "raging debate" about its application in the scientific arena. (*Budowle* Tr. at 50). Additionally, Dr. Fisher, (*Fisher* Tr. at ____), Dr. Chakraborty (*Chakraborty* Tr. at 48-49) and Dr. Melton, (*Melton* Tr. at 163), all gave credible testimony, consistent with Dr. Budowle, that this science and methodology has scientific acceptance in the particular scientific community. *Id.* Even one defense expert, Dr. Fredrika Kaestle, testified that the underlying methodology and techniques of mtDNA sequencing, amplification, extraction and quantification are all accepted in the scientific community. (*Kaestle* Tr. at 101-102).
In sum, this Court finds, after consideration of the testimony of the witnesses, affidavits of additional experts, written submissions of the parties, and the numerous articles and appendices of the parties, that the methodologies used to conduct mtDNA analysis and the science of mtDNA are generally accepted in the particular scientific community.

c. The methodology used to calculate the statistical evidence showing the probability of the coincidental match is generally accepted in the scientific community.
The record in this case and the literature on the subject makes clear, by a preponderance of the evidence, that the science and methodology used by the FBI to analyze mtDNA are widely accepted in the scientific community. The FBI used the SWGDAM database and the record demonstrates that the database is accepted and used nationally.

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[11]*See* Mitchell Holland and Thomas Parsons, *Mitochondrial DNA sequence Analysis and Validation and Use for Forensic Casework,* 11(1) Forensic Science Review 22, 23 (1999); Mark Wilson, et al., *Validation of MTDNA Sequencing for Forensic Casework Analysis,* 108 Int'l J. Legal Med. 68 (1995).

Specifically, Dr. Melton (*Melton* Tr. at 138) and Dr. Fisher (*Fisher* Tr. at ____) both testified that all the mtDNA laboratories in the country that perform forensic analysis use and accept the SWGDAM database. Dr. Budowle testified that it is the database predominately used. (*Budowle* Tr. at 18).

While there was testimony by defense experts on some problematic issues in the database directed to their particular fields, their points of disagreement were fully and convincingly refuted by the government experts and do not amount to a lack of consensus or serious controversy in the field of forensic mtDNA work. Only opposition to a technique that is public and "significant either in number or expertise" will be sufficient to find that there is not a general acceptance. *Porter II*, 618 A.2d at 634. Unanimity in the scientific community is not required to show "general acceptance." *Id.* Additionally, while most of the expert witnesses, such as Dr. Chakraborty,[12] agree that they would like a larger database, most also agree that there is little, if anything, within the published scientific literature that says that the SWGDAM database is not sufficient.[13] (*Chakraborty* Tr. at 50-51; *see also, Budowle* Tr. at 30-33; *Melton* Tr. at 149).

The SWGDAM database is divided into subpopulation and geographic regions, a practice that is used in nuclear DNA and in accordance with the recommendations of the National Research Counsel of the National Academy of Sciences.[14] The methodology used to calculate frequency estimates is generally accepted in the scientific community and produce conservative results.[15] (*Budowle* Tr. at 51; *Melton* Tr. at 163-164).

The *Porter II* Court noted that a "conservative method for calculating probability estimates can easily be equated with general acceptance of those methodologies in the

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[12] Dr. Chakraborty was an expert that even the defense called "one of the most demanded individuals in the world on population genetics and mtDNA analysis". (*Chakraborty* Tr. at 63). Dr. Chakraborty also testified that he statistically validated the database. (*Chakraborty* Tr. at 10).

[13] *See* Bruce Budowle, et al., *Forensics and Mitochondrial DNA Application, Debates of Foundations,* Ann. Rev. of Genomics and Genetics 119, 122 (2003).

[14] NCR Report II at 2, 23, 26.

[15] *See e.g.*, Terry Melton, *About Mitochondrial DNA*, at http://www.mitotyping.com/dna.htm; Terry Melton and Kimberlyn Nelson, *Forensic Mitochondrial DNA Analysis: Two Years of Commercial Casework Experience in the United States,* 42 Croatian Med. J. 298 (2001); Terry Milton, et al., *Genetic Evidence for Proto-Austronesian Homeland: MtDNA and Nuclear DNA Variation in Taiwanese Aboriginal Tribes,* 63 Am J. Hum. Genetics 1807, 1823 (1998); Terry Melton, et al., *Extent of Heterogeneity in Mitochondrial DNA of Sub-Saharan African Populations,* 42 J. Forensic Sci. 582 (1997); Terry Melton, et al., *Extent of Heterogeneity in Mitochondrial DNA of European Populations,* 42 J. Forensic Sci. 437 (1997); Terry Milton and Mark Stoneking, *Sub-Population Heterogeneity in Mitochondrial DNA Evaluated by Analysis of Molecular Variance of Sequence-Specific Oligonucleotide Typing of Worldwide Populations,* 437 J. Forensic Sci. 591 (1997).

relevant scientific community."[16] Dr. Fisher testified that the FBI statistics used for mtDNA are conservative under Porter II, as "conservative" estimates and "confidence levels" are required. (*Fisher* Tr. at ____; *see also, Chakraborty* Tr. at 25-28). *See* Snedecor: *Statistical Methods*, (which illustrates that the confidence interval level are widely accepted tools of statistics). The court also finds credible the testimony of the government's experts that the use of 95% confidence interval is a standard approach that is generally accepted in the scientific community. *See Budowle* Tr. at 27; *Chakraborty* Tr. at 26.

This Court found compelling the testimony of Dr. Melton, that the FBI confidence levels vastly overestimate the percentages and give the Defendant the benefit of the doubt. (*Melton* Tr. at 163; 206). Nothing in the literature sufficiently contradicts the acceptance of this method. At best, the defense has made a showing of some isolated dissents or disagreements that do not amount to either the level of a controversy as required or to a lack of consensus. This Court, therefore, finds that the methodology used to calculate the statistical evidence showing the probability of a coincidental "inclusion" is conservative and generally accepted in the scientific community, and meets the *Frye* and *Porter II* tests.

IV. Other Jurisdictions

Other courts and jurisdictions have found that mitochondrial DNA evidence is admissible. The following states have been noted for their rulings for admissibility based on *Frye* or *Frye*-Plus tests:[17] Florida, *Magaletti v. State*, 847 So.2d 523

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[16] *United States v. Porter*, 618 A.2d 629, n26 (D.C.1992). *See also, United States v. Bridgett*, 120 Daily Wash. L. Rptr 155 (D.C. Super Ct. Aug. 11, 1992), which preceded *Porter II.*

[17] A number of appellate courts, under the *Daubert* test, have made specific findings that the scientific community accepted the mtDNA typing technique. *See Lewis v. State*, 2003 Ala.Crim.App. LEXIS 135,125 (May 30,2003)(using a *Daubert* analysis, the court held the testimony of the FBI forensic examiner sufficient to establish the reliability of the mtDNA techniques and statistical methods); *State v. Pappas*, 776 A.2d 1091, 1107-11 (Conn.2001) (under *Daubert* analysis, court upheld trial court's ruling that extraction and charting procedures are generally accepted, and further found that trial court was correct in admitting statistics based on confidence interval applied to counting method); *State v. Underwood*, 518 S.E.2d 231, 239 (N.C.Ct.App.1999)(holding expert testimony on mtDNA admissible, and noting "years of solid research, testing and publications in peer-reviewed scientific journals" and wide acceptance in evolutionary genetics studies); *State v. Council*, 515 S.E.2d 508, 517 (S.C.1999)(*Daubert*-type standard affirming admissibility of mtDNA evidence and finding that "[i]ts underlying science has been generally accepted in the scientific community." *State v. Scott*, 33 S.W.3d 746, 758 (Tenn.2000)(holding that no

(Fla.App.2003) (upholding, under *Frye*, trial court's admission of mtDNA evidence, finding that the state established the general acceptance of both the science and statistical methodology used in mtDNA analysis); Michigan, *People v. Holtzer*, 660 N.W.2d 405, 411 (Mich.App.2003) (Southwick, P.J., concurring)(mtDNA testing found to be useful and reliable, and robust and validated, based on the "vast base of experience" of the forensic scientific community). Mississippi, *Adam v. State*, 794 So.2d 1049, 1060-1065 (Miss.Ct.App.2001)(Frye-Plus test; holding that mtDNA sequence analysis is generally accepted in the scientific community and is reliable); New York, *People v. Ko*, 757 N.Y.S.2d 561, 563 (App.Div.2003)("mitochondrial DNA analysis has been found reliable by the relevant scientific community; issues regarding contamination go to the weight to be given such evidence) (citing *People v. Klinger*, 713 N.Y.S.2d 823 (N.Y.Co.Ct 2000)).

V. Motion to Reopen the *Frye* Hearing

While the court believed the defense would submit its own Proposed Findings of Fact, the defense instead requested that this Court reconsider its evidentiary ruling and reverse its decision to admit the mtDNA "inclusion" evidence, or in the alternative, reopen the Frye Hearing. The Defendant failed to submit any information that would convince this Court to reopen the *Frye* hearing.[18] The Court previously had ruled that purported "new" evidence, in the form of an e-mail from one of the Defense Counsel's experts, during the *Frye* Hearing would not be made part of the record because it was unpublished, not sworn and not timely submitted. Neither the *Washington Post* article nor the manuscript excerpt contains new arguments. The Court already considered all the evidence previously presented by the defense on these issues and finds no new information that would change the Court's determination. Therefore, after reconsideration following the new submission, the Court finds that there is no reason to reopen the extensive *Frye* hearing that already has transpired in this matter.

VI. Conclusion

Based on the motions, relevant case law under the *Frye* standard, and the entire record herein, this Court finds, under the *Frye* standard, that the particular relevant scientific community generally accepts the science of Mitochondrial DNA, the methodology

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hearing is necessary for mtDNA evidence, because, by statue, DNA evidence is presumptively trustworthy and reliable, citing Tenn.Code Ann. Sect. 24-7177 (currently Sect. 24-7-117)).

[18] The Court cannot disagree with the government's assessment of the e-mail, manuscript and *Washington Post* article, submitted as new evidence. The new submissions are nothing more then an attempt to reargue the same position with information that is neither persuasive nor compelling.

employed by the FBI to analyze it and the SWGDAM database used to calculate probability estimates. The Court also finds the statistical analysis conservative and accepted by the scientific community. Furthermore, the Court finds that there is no reason to reopen the original *Frye* hearing as the defense has failed to provide any new persuasive information, and had ample time and opportunity to present its case during the *Frye* hearing.

Therefore, it is on this day ____ of January 2005, hereby

ORDERED that the Defense Motion to Exclude Mitochondrial DNA Test Results and Defendant's Motion to Reconsider [the] Court's Oral Ruling Admitting, and to Reopen [the] Hearing Regarding Government's Mitochondrial DNA Inclusion Evidence and Sequence Frequency Estimates Based on the SWGDAM Database are **DENIED.**