

# PRIMER ON JEFFERSON DNA

## **DNA.**

DNA is material that governs the inheritance of eye color, hair color, stature, bone density, and many other human and animal traits.

## **Persons Tested.**

Since Thomas Jefferson himself had no known legitimate male descendants (his wife Martha bore six children between 1772 and her death in 1782, but only two daughters lived to adulthood), a direct comparison between his and Sally Hemings' offspring could not be made. Dr. Eugene Foster, a retired UVA pathologist, therefore analyzed DNA from other male members of the Jefferson clan and compared them with samples from Sally Heming's male descendants to see if a Jefferson fathered them.

Dr. Foster conducted DNA tests on 5 male line descendants of 2 sons of Thomas Jefferson's paternal uncle, Field Jefferson, and 5 male line descendants of 2 sons of Thomas Woodson, including Thomas, Sally Hemings' first child (1790-1879), 1 male line descendant of Eston, Sally Hemings' last child (1808-1852), and 3 male line descendants of 3 sons of John Carr (grandfather of Samuel and Peter Carr, or Jefferson's nephews), long thought by the acknowledged Thomas Jefferson descendants to have been responsible for Sally Heming's children. For good measure, a panel of white descendants of Monticello's neighbors were also tested in case their forefathers might have contributed to Sally Heming's offspring.

## **Rare DNA Halotype.**

The average frequency of a microsatellite halotype like Jefferson's is about 1.5%. It has never been observed outside the Jefferson family, and it was not found among a sample of 670 European or 1,200 people worldwide.

## **Nonspecific DNA Results Link "Some" Jefferson.**

Dr. Foster found that there was a match between the male descendants of Uncle Field Jefferson and those of Sally Heming's youngest son, Eston Hemings. However there was no match between the male descendants of Tom Woodson, Sally Hemings' first-born son. The nephews' heirs also did not match any of the others, and neither did the neighbors' descendants. Dr. Foster concluded that "the simplest and most probable explanation for our molecular findings are that Thomas Jefferson, rather than one of the Carr brothers, was the father of Eston Hemings Jefferson, and that Thomas Woodson was not Thomas Jefferson's son."

## **8 Jeffersons Could Have Been the Father of Eston.**

This DNA study testing the Y chromosome found that there was a link to "some" Jefferson, but not necessarily Thomas, having been the father of Eston, Sally Heming's youngest son. These DNA tests indicated that any one of 8 Jeffersons could have been the father of Eston and there was nothing to indicate it was Thomas. The 8 possibilities identified by the DNA tests are Thomas, Randolph (Jefferson's brother), Randolph's 5 sons, and a cousin George and in 5 of Randolph's sons, who were in their teens or 20s when Sally Hemings was having children. Since no one has ever denied that it was likely that "some" Jefferson fathered at least one of Sally Heming's children, these recent

DNA tests only provide more certainty to what we already knew or suspected. Since the only available DNA evidence comes from direct male lineal descendants of persons who have descended from a common male line with Thomas Jefferson (father, grandfather, etc.), the test is inherently nonspecific. The same Y chromosome existed in Mr. Jefferson's brother Randolph, who lived 20 miles from Monticello, and in 5 of Randolph's sons, who were in their teens or 20s when Sally Hemings was having children.

#### **Misleading Headline – “Jefferson Fathered Slave’s Last Child.”**

On 5 November 1998 the journal Nature placed an inaccurate and misleading headline based on this study which read, "Jefferson Fathered Slave's Last Child". Most of the mass media and many others assumed the headline to be correct. At the time Daniel P. Jordan, Ph.D. and President of the Thomas Jefferson Memorial Foundation (TJMF) stated that “Dr. Foster's DNA evidence indicates a sexual relationship between Thomas Jefferson and Sally Hemings.” Subsequently Mr. Jordan admitted that “after the initial rush to conclusions came another round of articles explaining that the study’s results were less conclusive than had earlier been reported.” Dr. Foster also later admitted that “it is true that men of Randolph Jefferson’s family could have fathered Sally Hemings’ later children. The title assigned to our study was misleading in that it represented only the simplest explanation of our molecular findings: namely, that Thomas Jefferson, rather than one of the Carr brothers, was likely to have been the father of Eston Hemings Jefferson. We know from the historical and the DNA data that Thomas Jefferson can neither be definitely excluded nor solely implicated in the paternity of illegitimate children with his slave Sally Hemings.”

#### **New Woodson DNA Tests.**

DNA tests performed on 1 Eston line came up positive, but tests performed originally on 5 Woodson lines in November 1998 came up negative, as did a recent DNA test on a 6<sup>th</sup> line performed in March 2000. These results should demonstrate beyond any reasonable doubt that Thomas Jefferson was not the father of Tom Woodson. The Woodson DNA tests are important because if Tom Woodson is Sally Hemings’ Paris-conceived son and could be shown to have Jefferson DNA, it would then be almost certain that Thomas Jefferson was his father, since Thomas was the only Jefferson in Paris at the time who could have impregnated Sally. Last week the Thomas C. Woodson Family Association declined to attend The Monticello Association’s Annual Business Meeting to be held on Sunday, May 7. The Woodson Family Association’s President, Robert Golden, stated that the care of the Jefferson family cemetery and possible burial there “is not of interest to the Woodson Family Association itself but might be of interest only to specific individuals within the Woodson family.”

#### **Grave of William Hemings Located.**

After an exhaustive 18-month search, Mr. Herbert Barger located the grave of William Hemings, the son of Madison Hemings and the grandson of Sally Hemings, in the Leavenworth National Cemetery in Kansas. Recently the Madison Hemings branch decided not to press forward with DNA testing.

This particular scientific inquiry on the Madison Hemings would be interesting because results from the DNA tests should confirm 1 of 3 things: (i) if there is no match then their claim that Madison is a descendant of Thomas Jefferson would be invalid (and then this would fall into the same category as the Woodson oral history which DNA indicated there was no Jefferson/Woodson match), (ii) it could show a Carr/Madison descendant match, thus our claim would be valid that one of the Carr brothers is the father of Sally’s children (at least for Madison), or (iii) as in the case of Madison's brother, Eston, who was found

to have a match with "some" Jefferson descendant (not necessarily Thomas), this match could repeat that finding.

However such finding would not rise to the level of clear and convincing evidence that is required under current applicable paternity laws since any one of 8 Jeffersons could have been the father of Madison and there would be nothing to indicate it was Thomas. Such a study would, however, significantly advance scientific understanding of the Hemings paternity issues.

The William Hemings gravesite has long been forgotten by other Hemings family members. At first the Hemings claimed not to know its location. Then the Hemings questioned whether this was really William's grave, until Mr. Barger provided irrefutable evidence. If the Hemings oral histories are so good, why don't they know where their ancestors are buried? One of the first, most basic things a family does is honor the burial place of their ancestors. That comes before any elaborate oral tradition. Native Americans have a very rich oral history culture. They know where their sacred grounds are and where their burial grounds are over several generations. It is sometimes risky to cross from one culture to another, but it seems safe to say that honoring family burial places is a near universal human trait. Some cultures, such as in India, cremate their dead and scatter the ashes, but I suspect it would be difficult to find a culture that buries their dead and then ignores the grave sites of their ancestors. That comes before any elaborate oral tradition.

#### **DNA Testing of Acknowledged Descendants.**

The current members of The Monticello Association were acknowledged by Thomas Jefferson as his offspring (and by their subsequent offspring) as descendants of Thomas Jefferson so no acknowledged descendant of Thomas Jefferson need be tested for a DNA match under current paternity standards.

A human being's DNA consists of 23 chromosomes. In male descendants, 22 of those chromosomes change with every generation, because each generation represents the coming together of a male and a female, which results in a new combination for these 22 chromosomes at each conception. When testing for paternity, there are therefore two different kinds of tests that can be run. A son's entire 23 chromosomes can be tested to determine whether the son is the product of his father. However, this test will be specific to the father, and any other male in his family will not yield the same results. Father and grandson (or any other lineal descendant) will not work, because although the Y chromosome will be the same, all the other chromosomes will have changed because in each instance the father combines with a new mother, which mixes up the 22 chromosomes.

The blood and DNA tests conducted in the Jefferson-Hemings controversy can only be carried out on samples of the male Y chromosome because it passes unchanged from father to son. Since Thomas Jefferson's son died in infancy and he only had daughters who lived to maturity, it is impossible to definitively link any descendant of Thomas Jefferson to Thomas Jefferson himself using DNA alone. (This would be true even if Thomas Jefferson did have male descendants. Such male descendants would only have the Jefferson Y chromosome, which does not establish a specific link to Thomas. The presumptive link, of course, would be very persuasive). Also, recent DNA researchers of the Hemings line have sampled only direct male line descendants of persons who have descended from a common male line with Thomas Jefferson (e.g. grandfather).

If the acknowledged descendants of Thomas Jefferson submitted to DNA testing the test would be futile because the only genetic test would be of the Y chromosome. The acknowledged descendants of Thomas Jefferson are all descended through Thomas Jefferson's daughter, not the male line. Thus they would have the Y chromosome from their male lines, not the same Y chromosome as any Jefferson. For example, a son of Martha would have the Randolph Y chromosome, and any direct male descendant would have that same Randolph Y chromosome. Therefore it is impossible that any descendant of Thomas Jefferson's daughters would have the Jefferson Y chromosome (unless some descendant along the line later married a male line descendant of Field Jefferson). Since all of the descendants of Thomas Jefferson's daughters had Y chromosomes from male lines other than the Jeffersons, nothing could be more futile than to test the acknowledged descendants of Thomas Jefferson.

#### **Exhumation of Thomas Jefferson.**

If Thomas Jefferson were exhumed for Y chromosome DNA testing it would only confirm that he carried the same Y chromosome as the other 7 Jeffersons in question. The only way this would not be true is if Thomas Jefferson were illegitimate. Besides being futile, it is very unlikely that there would be usable DNA that could be tested after so many years.

#### **Illegitimacy.**

The genetic trail also could have been broken in subsequent generations if any of the mothers in the presumed chain actually had her son by a man outside the Jefferson line. Some of the Hemings' lines cannot be tested, as there are no male line descendants.

#### **DNA and Legal Requirements of Paternity.**

There is no reason to use DNA testing if the father acknowledges paternity. In the absence of the father acknowledging paternity the law has determined that the most reliable way of determining paternity is blood and DNA testing, and there are clear rules one must follow to establish paternity. The responsibility for obtaining these rights and providing appropriate legal evidence belongs solely to the Hemings descendants and the burden of proof lies with them, not us.

Since the law recognizes blood or DNA tests as the most reliable method in order to determine paternity in case of disputes, oral history plays no part and most other information is irrelevant as to whether someone is a lineal descendant for purposes of the right of burial in our graveyard. While interesting, the oral history promoted by the Hemings' plays absolutely no part when it comes to determining their rights as heirs of Thomas Jefferson. Family oral history may be useful in a scientific investigation as a pointer to suggest lines of inquiry, or to support other, more substantial evidence.

From a legal standpoint admissibility is the test which determines whether the evidence may be considered, e.g. it is information from a source which the law permits in a legal proceeding and is material and relevant to the issues presented, and because of the nature of the evidence, whether greater or lesser weight should be accorded to it. Hearsay is testimony offered by someone who does not have personal knowledge that the testimony is true. A witness cannot be cross-examined on hearsay because the witness only knows what he has been told. For that reason, hearsay is inadmissible unless it falls within certain limited exceptions. Oral history is inherently hearsay and therefore inadmissible.