

Finding Family –February 2017

## **What Can DNA Tell You About Your Genetic Genealogy?**

By Sheila Newberry

My parents had told me that I was “mostly English” with some German and Irish thrown into the mix. Wanting to confirm this as I started researching my family tree, I elected to take an Ancestry DNA test. Testing couldn’t have been simpler, purchasing a DNA kit and then sending off my saliva sample for evaluation. In a few short weeks I received my DNA ethnic background results.

DNA stands for deoxyribonucleic acid. DNA is composed of small units of proteins formed into a double helix, a twisted ladder shape that directs and controls our body’s cells. DNA is fairly equally composed of our maternal and paternal information that is expressed in our 22 pairs of chromosomes, not including the sex chromosomes.

Testing is performed by breaking some of the proteins at specific sites on the chromosomes into short segments and comparing them to reference values of established populations.

Scientists have been able to study and tabulate DNA sequences in isolated populations in areas where there hasn’t been much immigration into the country. (Think Iceland, Ireland, the Himalayas, etc.) From these studies, it is known that mutations, which are changes in DNA sequencing, appear slowly.

While autosomal DNA (atDNA for short) testing is useful for uncovering ethnicity, it might not allow you to untangle your family tree by itself. Many of the census records will not include maiden names of married women. In such cases, mitochondrial DNA (mDNA) testing will help, since it is only passed through the maternal line. And conversely, testing Y-DNA, the male sex chromosome, which is passed only through the male line, would help if one encounters paternal questions. Similarly, X-DNA testing can narrow and pinpoint female ancestors. It is done as part of atDNA testing.

According to Blaine T. Bettinger, the author of “The Family Tree Guide to DNA Testing and Genetic Genealogy,” 2016, as more people test for atDNA and Y-DNA, more complete information will be available at cheaper prices. In general, the testing methods are becoming more refined and the genetic pool of knowledge is becoming larger.

I have not yet completed my family tree, but my DNA results were enlightening. Mostly, I am Irish, but Scandinavian is a strong second. Surprising, until one remembers how much the Vikings were involved in northern Europe and the British Isles. Then there is the German part (or western European area as Ancestry calls it) of my ethnic profile. It turns out that my English heritage is a distant fourth. And I have no Native American – not even a little – to brag about.

Family lore has it that I am related to Aaron Burr, vice president under Thomas Jefferson –who killed Alexander Hamilton in a duel. Not nearly as sensational, I’m also said to be related to John Edwards, democratic vice presidential candidate in 2004. I have not verified either of these yet.

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