DNA Analysis

August 2023
Sam Casey
kcgen1970@gmail.com

DNA testing became available to us common folks about 10 years ago with Y dna and mitochondrial dna testing. A few years later, autosomal dna testing became available. Using my website, sjcjr.com , I will share some of my dna analysis results, primarily autosomal. Most of the time, the DNA analysis will be near the bottom of an individuals profile page.

Several years ago, about 55 of us Averett descendants shared their dna results. This study helped to confirm relationships with descendants of John Averett and identified two of his daughters where there was not written documention. Also showed that the early Averetts in Hancock Co GA were related but could not determine exact relationships.

Also a group of about 25 Simmons descendants shared their dna results. This DNA study proved that the different Simmons lines that moved to southeast AL were related but could not identify the parents of the Isaac Simmons who married Elizabeth Fowler. Isaac and Elizabeth are my great great grandparents. However the DNA study did strongly suggest that Isaac was a descendant of Isaac Simmons (1732-1804).

I use the free software GDAT (Genealogical Data Analysis Tool) to analyze dna matches. For my paternal side in particular, I have been able to perform Visual Phasing at the great grandparent level for me, my brother, nephew, 4 first cousins, and 4 first cousins once removed. This means that I know whether a particular DNA segment comes from which great grandparent: Charlie A Casey, Buena Vesta Maund, Julius Edward Cox, or Willie Lorena Averett. With my mother being an only child (no first cousins on our maternal side), some of the Visual Phasing is at the grand parent level and some at the great grandparent leve.

My goal is to add a DNA analysis comment at the end of the profile for each of my direct ancestors as far back as practical. I will add a “DNA” icon to those ancestors whose relationships are confirmed by DNA. A DNA icon will be added ancestor’s siblings when one of their descendants has matching DNA.

Things I have learned from reading and Visual Phasing:

- Visual Phasing is very, very time consuming.
- 50% of your dna comes from each parent. On average, 25% comes from each grandparent. However, it could be as varied as 17% and 33% from one set of grandparents and 50-50 from the other set.
- My dna is about 25-25-25-25 from grandparents but each chromosome is different. On any chromosome it could be 50-0 or 0-50 from any set of grandparents
- You will have a dna match (> 7 cm) with every 2nd cousin. Beyond that, you may not match 3rd cousins or 2nd cousins once removed.
- Matches > 20 cm are considered reliable. Matches from 20 cm down to 7 cm have an increased possibility of being false positive. For most small dna matches, the common ancestor is too far back to find common ancestors by comparing family trees.

- For people with a lot of Colonial ancestors like me, on average you will probably be related to 25% of your matches by 2 different paths and to 16% of your matches by three or more paths. Examples:
    - My paternal grandparents were 2nd cousins once removed. My paternal grandfather's grandmother was a sister to my paternal grandmother's great grandfather.
    - Obviously my paternal first cousins and I share the same great great grandparents. One set of first cousins are related to this couple on their paternal and maternal sides.
    - Some of my small dna matches with other Averett descendants are not Averett dna. My paternal grandmother's mother was an Averett. The common dna from my matches with some of the descendants of Benjamin Averett comes from my paternal grandfather's Kirkland line.
    - The common ancestors for dna matches with some descendants of Drury Averett were not Averetts. Haven't figured out exactly who this dna comes from.
    - Be cautious before accepting suggestion in Ancestry's Thru-lines or My Heritage's Theory of Relativity. The further back in time you go, the more likely that the suggestion is wrong.
    - The result of the above is that I will only perform detailed DNA analysis on DNA kits which have been visually phased or with DNA kits that triangulate with phased DNA kits. That's the only way to accurately determine Common Ancestors.