

HOW DNA MADE A FAMILY OUT OF STRANGERS

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Genealogy as a hobby and a passion is one of the oldest, perhaps even as old as time itself. Though we haven't always and still don't completely understand it, genetics has also played a central role in the history of mankind. It is this simple genetic code that often selects survivors of disease and famine and elects fathers and mothers.

While genetics and genealogy have been accomplices in writing the history of the world since the dawn of time, we mortals have only been privy to it for a short time. But the beauty of this awareness is that now we can use the strengths of each to describe an even more complete story of our family history.

MY STORY

My story began in my high school English class as my teacher encouraged all of us graduating seniors to walk onto our college campuses and find a professor who was researching something we were interested in and get involved. So I did. I began working in the laboratory of Dr. Scott Woodward who was involved in a project to use DNA to identify the remains discovered in an ancient Egyptian cemetery. That project eventually turned into the *Sorenson Molecular Genealogy Foundation*, one of the first efforts to create a correlated genetic and genealogical database with the aim of helping individuals trace their ancestry using their genetics.

At that time, back in the year 2000, we were only able to access two of the three types of DNA testing: the YDNA (tracing a direct paternal line), and the mtDNA (tracing a direct maternal line). Autosomal DNA testing would not be available for several more years.

A short time into this project my mom came to visit me. Being an ardent and exuberant supporter of anything I have ever tried, she willingly gave her blood and let me determine her mtDNA profile and haplogroup.

MTDNA TESTING

When you have your mtDNA tested the laboratory actually finds the exact sequence, or order of the DNA letters, for your mitochondrial DNA. They then compare that sequence to a standard reference sequence and report to you the differences in what we call your mtDNA profile.

This profile then serves two purposes. It is used to determine your haplogroup, or deep ancestral group, and it is used to query the database to find other people who share your profile, and therefore might share a direct maternal line ancestor with you

We were very interested in any information this mtDNA could provide as we did not know anything about my mom's biological family. My mom turned out to be in haplogroup W, which was a bit of a surprise, I assumed we would be in haplogroup H, like most of the rest of Western Europe. This was especially interesting as my mom's dad swore that he saw her biological mother, and that she was Polish. As it turns out, significant portions of individuals in haplogroup W are from Poland!

mtDNA Matching

A couple of years later my mom's mtDNA was migrated into a public database called *GeneTree* and we began to find our first matches. Now, mtDNA matching often does not meet expectations. Even having an exact match with another individual does not guarantee a recent common maternal ancestor. But there was that possibility. However, instead of being excited about the possibility of finding biological relatives we were suddenly very hesitant.

Tip: Be patient. We are all in this genetic genealogy thing for different reasons. It might seem like everyone who is tested must have wanted to know everything about his or her family history, but it is not the case. Just because you reach out once and are rebuffed, doesn't mean you shouldn't try again.

Autosomal DNA Testing

Our story resumes in 2007 when autosomal DNA testing became available. Autosomal DNA testing, unlike the YDNA and mtDNA tests, is not limited to a direct paternal or direct maternal line, but can give you information about both your mom's and your dad's side of your family. The first company to offer the autosomal DNA test was called *23andMe* (23andMe.com), and they were also offering health information, which my mom found very interesting.

Tip: Be aware that taking any test from any major genetic genealogy testing company can result in a DNA profile that could reveal information about your health. While only 23andMe actively reports that information to those tested, you can obtain your own report from promethease.com.

While we were tested looking for health information, we also received a list of locations where my mom's ancestry was likely from, as well as a match list- people who were her biological relatives. We reached out to one of them.

ETHICS IN GENETIC GENEALOGY

Ultimately, contacting individuals who may not know about your branch of the family is not new to genetic genealogy, these kinds of discoveries have been a part of genealogy from the start. But it is important to realize the ethical implications of your search and to ensure that you are taking other's feelings and rights into consideration.

Tip: When reaching out to one of your matches, keep your correspondence short and sweet. No need to share all of your genealogy at this point, just ask a simple direct question, be personable, and encourage a response.

Modified from Blaine Bettinger's book, *The Family Tree Guide To DNA Testing and Genetic*

Genealogy, here are my three tips for maintaining ethical relationships:

1. If possible, be aware of potential outcomes before you test.
2. Ask relatives beforehand if they want to know about unexpected results.
3. Be kind.

MAKING CONNECTIONS

If you do gain access to your matches and their pedigrees you can begin to look at their genetic relationship to you, and then search in the right part of their pedigree for ancestors that fit. For example, if you have a genetic third cousin, then you would look at their great grandparents for names or places that might fit into your own pedigree chart.

Eventually, using this method, we did identify two of the four sets of great grandparents for my mom. This was very exciting, and we could not have accomplished it without DNA and the help of our newfound genetic cousins.

For us, in the end, it was a new close match that tipped our search over the edge. A half-brother of my mother was tested and using various online sources, including an obituary of my mom's biological mother, we were able to find and meet this wonderful family.

Our story may seem extraordinary, but it really isn't. Every family has a story to tell, and DNA can help.