

The ABCs of DNA & Genealogy

Presenter: Jessica M. Trotter

“For a few days after I received my results, I looked in the mirror and didn’t know how to understand myself.” ~ Jesmyn Ward¹

Genetic Genealogy

- Offers the ability to extend genealogies further into the past with more accuracy
- Can confirm or eliminate relationships
- Can strengthen weak paper trails or weaken strong ones
- Is rarely (if ever) a magic bullet to solve all your brick wall problems
- Can offer unexpected and unwanted insights
- Is constantly adapting and improving
- *Has* to be done hand in hand with thorough traditional genealogy research

You get half your DNA from each parent—but it’s not consistent, a sibling could have inherited different segments from the same parents.

Major tests:

Y-DNA—Men only

- DNA passed direct from father to son with very little mutation
- Identifies haplogroups—which pertain to deep ancestral origins dating back thousands of years and can be used to define genetic populations

MtDNA (mitochondrial)—anyone

- DNA passed direct from mother to child with very little mutation
- Identifies haplogroups

Autosomal—anyone

- Can confirm a relationship to a living person and to some degree determine relationships
- Can give a guess to ancestral heritage

CentiMorgans—is a measure of genetic linkage. Think of it as a measure of DNA information within a chromosome.

Best time to buy?

There are large sales around family holidays – especially Christmas, or during large genealogy conferences.

One of the best sales I’ve seen is on and around DNA Day: April 25th

¹ From her essay “Cracking the Code” in *The Fire This Time: A New Generation Speaks About Race*, 2017, p. 94.

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X-Matching—for those tests or 3rd party sites that identify X matches. X are passed to men only from their mother. Women inherit an X from both parents.

Chromosome Browser—Allows user to compare your matching DNA segments (blocks) with your genetic matches.

Major companies:

AncestryDNA—Autosomal

- Largest database (Most commercially recognized)
- Trees and leaf hints
- ThruLines
- No chromosome browser
- Cannot transfer data in
- Can download raw data

Family Tree DNA—Autosomal, YDNA, MtDNA

- Dedicated Genealogists
- Chromosome browser with shared percentages
- Largest YDNA database
- Stores samples (Can upgrade tests)
- Smallest database
- Family trees are optional but not easy to use
- Accepts transfers from most other services—sometimes with a charge

23andMe—Autosomal

- More health-related testing than genealogy
- Large database but traditionally less likely to reply
- Chromosome Comparison
- Have to contact members one by one for sharing
- Cannot transfer data in

My Heritage DNA—Autosomal

- Chromosome Comparison
- AutoClusters
- Broadest geographic coverage
- Limited use without premium subscription
- Highlights shared surnames, shared ethnicity, and shared matches
- Theory of Relativity

Living DNA—Autosomal, YDNA, MtDNA in one test

- Started British-based. Particularly useful if you have British Isles ancestry.
- More granular ethnicity breakdown particular in Britain and Africa
- Matching

Grandparent 1754 984 – 2462				
Half Aunt / Uncle 871 492 – 1315	Parent 3485 2376 – 3720			Aunt / Uncle 1741 1201 – 2282
Half 1C 449 156 – 979	Half Sibling 1759 1160 – 2436	Sibling 2613 1613 – 3488	SELF	1C 866 396 – 1397
Half 1C1R 224 62 – 469	Half Niece / Nephew 871 492 – 1315	Niece / Nephew 1740 1201 – 2282	Child 3487 2376 – 3720	1C1R 433 102 – 980

Snip from the Shared cM Project 4.0 tool v.4

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Third Party Tools

- [GedMatch.com](https://www.gedmatch.com/)
- [DNAGedcom.com](https://www.dnagedcom.com/)
- [DNA Painter](https://www.dnainter.com/)

Surprises

n.p.e.—non-paternity event—essentially not the parent expected—ex. The next-door neighbor's child or my aunt and father are genetically only half-siblings.

Pedigree Collapse and Dna—ex. Uncle John married my 2nd great aunt and then my great aunt, or cousin marriages, etc.

Resources

International Society of Genetic Genealogy Wiki: https://isogg.org/wiki/Wiki_Welcome_Page

Genetic Genealogy in Practice by Blaine T. Bettinger and Debbie Parker Wayne, 2016.

The Family Tree Guide to DNA Testing and Genetic Genealogy by Blaine Bettinger, 2016

The Genetic Genealogist (Blaine Bettinger)—<http://www.thegeneticgenealogist.com/13-2/>

- Unlocking the Genealogical Secrets of the X Chromosome: <https://thegeneticgenealogist.com/2008/12/21/unlocking-the-genealogical-secrets-of-the-x-chromosome/>
- More X-Chromosome Charts: <https://thegeneticgenealogist.com/2009/01/12/more-x-chromosome-charts/>
- DNA Central—a subscription site created by Bettinger: <https://dna-central.com/>
- Facebook Group: Genetic Genealogy Tips & Techniques

The Shared cM Project 4.0 tool v4: <https://dnainter.com/tools/sharedcmv4>

Finding Family: My Search For Roots and the Secrets in My DNA by Richard Hill, 2013

Richard Hill, The DNA Testing Advisor, <http://www.dna-testing-adviser.com/>

The Lost Family: How DNA Testing is Upending Who We Are by Libby Copeland, 2020.

Your Genetic Genealogist (CeCe Moore)—<http://www.yourgeneticgenealogist.com/>

Advanced Genealogy Research Techniques by George G. Morgan and Drew Smith, 2013.

Your DNA Guide: <https://www.yourdnaguide.com/> the site of Dian Southard

Learn More:

Legacy Family Tree Webinars: <https://familytreewebinars.com/index.php>

NGS Annual Conferences—<https://www.ngsgenealogy.org/>

Genealogical Research Institute of Pittsburgh: <http://www.gripitt.org/>

Midwest African American Genealogy Institute: <http://www.maagiinstitute.org/> (normally held at Allen County Public Library, Fort Wayne, Indiana)

More questions? Contact me!

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Genie Road Trip: <http://genieroadtrip.com/>