

**Finding Birth Families Using DNA Boot Camp**  
**Mary Eberle, JD**

**Mary@DNAHunters.com • www.DNA Hunters.com • 608-206-0641**

## **Talk 1: Using DNA for Adoption & Unknown Parentage Work**

### Birth Certificates

- Original (OBC) – with birth parents' info
- Amended (ABC) – with adoptive parents' info
  - Access to OBCs – based on State law

### Non-identifying Information

- Information about the birth family
  - Age, race, religion, education level, hobbies
- Not always accurate
  - What was popular—to help get baby adopted
- However, it can help to determine who birth parents are.

### Confidential Intermediaries

- State-by-state
- State-approved
- Confidential
- Experienced
- Access to Sealed Information

### Types of DNA

- Autosomal DNA (atDNA)
- Y-DNA
- Mitochondrial DNA (mtDNA)
- X-DNA

### Autosomal DNA

- Covers relatives related to us
- 5 or more generations
- It gets halved at every generation
  - $\frac{1}{2}$  of your atDNA is from your mom
  - $\frac{1}{2}$  is from your dad
    - $\frac{1}{4}$  is from each grandparent (but it's not exactly  $\frac{1}{4}$ )
- atDNA is measured in centimorgans (cMs) or percents (%)
  - cMs are like inches on a ruler
- Companies' relationships aren't accurate
  - Therefore, you must do it yourself "DIY," that is, figure out possible relationships yourself.
    - even how much DNA you share with a match

- Determining How Much DNA You Share with a Match
  - At Ancestry
    - Click on one match
      - Then click on the “i” in the little blue circle

## DIY @ Ancestry

The screenshot shows a user profile on Ancestry.com. At the top, there is a profile picture, a name, and a 'SEND MESSAGE' button. Below this, it says 'Member since 2016, last logged in May 4, 2016'. A predicted relationship is shown as '2nd Cousins' with a confidence level of 'Extremely High'. A tooltip is overlaid on the page, displaying: 'Amount of Shared DNA: 516 centimorgans shared across 28 DNA segments'. Below the tooltip, there is a red arrow pointing to a 'Hidden Tree' button. The background shows a message from another user and a 'CONTACT' button.

- At FamilyTreeDNA, you need to subtract segments under 7 cM.
  - Click on the box next to one match
  - Then click on Chromosome Browser (CB) button at the top of the page
  - This opens the CB
    - If you only share one to a few segments with a match, hover your mouse over them to show how big they are
      - Add up segments 7 cM or greater
    - If you share a lot of segments with a match, under “Optional Views” click on “Download to Excel (CSV Format)”
      - This downloads the segments into a spreadsheet on your computer
      - Open the spreadsheet
      - Remove rows with segments under 7 cM
      - Add the remaining rows to get a new total & use this
- 23andMe lists the % of atDNA you share with a match
  - It’s displayed in your match list.
  - No adjustment is needed.

- Now that you know how much DNA is shared, look at a table showing possible relationships for given amounts of DNA
  - International Society of Genetic Genealogy's Autosomal DNA Statistics - [http://isogg.org/wiki/Autosomal\\_DNA\\_statistics](http://isogg.org/wiki/Autosomal_DNA_statistics)
  - DNA Detectives FaceBook Group – in their files section has the table you've been given  
<https://www.facebook.com/groups/DNADetectives/>
  - My website, DNAHunters.com, has a possible relationships calculator based on the DNA Detectives table. Input how much DNA is shared, and it tells you possible relationships.  
<https://dnahunters.com/possible-relationships-calculator/>
  - The DNA Geek Blog has a table with probabilities that a given amount of shared DNA is in one of the DNA Detectives groups.  
<http://thednageek.com/the-limits-of-predicting-relationships-using-dna/>

### Know the Different Types of Cousins

- Wikipedia explains types of cousins

### Mirror Trees

- Tree based on a match's tree
- Needs to be done on AncestryDNA.com
  - Takes advantage of Shared Ancestor Hints (SAHs)
- Steps
  1. Find match of interest to mirror
  2. Reproduce their tree
  3. Attach your atDNA to that match
  4. Wait for Shared Ancestor Hints
  5. Determine most likely relationship to match
  6. Build tree *forward*
- Mirror Tree + SAHs Show You:
  - an ancestor/ancestors that are shared by two of your matches
  - which branch of match's tree you're connected on
  - that these are also your ancestor(s)/ancestral line
- Resources (Mirror Trees):
  - Blog Born in New Orleans has videos and blog posts about Mirror Trees; put mirror tree in the search box. <http://www.borninneworleans.com>
  - DNA Detectives FaceBook Group - <https://www.facebook.com/groups/DNADetectives/> - has a file, "CREATING-YOUR-MIRROR-TREES.docx. You need to join this group to see the file.
  - DNA Boot Camp "Solving Family Mysteries with DNA," which includes two webinars:
    - Mirror Trees
    - Best Tools for Researching Difficult DNA Matches
    - <http://hackgenealogy.com/features/store/>

### Y-DNA

- Y-DNA can be helpful if you're male looking for a birth father or someone on your direct paternal line ("patrilineal line").
- 23andMe provides basic Y-DNA haplogroup information for males who test their atDNA.
  - This can be used to sort through atDNA matches (put in the search field).
    - Same Y-haplogroup can indicate same patrilineal line
    - Different Y-haplogroup always indicates NOT the same patrilineal line (unless it's a variation, like a subgroup)
- At Gedmatch.com, some people list their Y-haplogroup
- For full Y-DNA testing, order from FamilyTreeDNA
  - Y-37, Y-67, Y-111 Tests
  - Remember, only 30-40% of men get one surname from their test
    - Most (60-70%) get multiple surnames.
  - You will still need atDNA testing
    - But if you have one surname, it will help sort through your atDNA matches.

### Mitochondrial DNA

- Mitochondrial DNA (mtDNA) can be helpful if you're looking for a birth mother or someone on your direct maternal line.
- 23andMe provides basic mtDNA haplogroup information for everyone who test their atDNA.
  - This can be used to sort through atDNA matches (put in the search field).
    - Same mtDNA-haplogroup can indicate same direct maternal line
    - Different mtDNA-haplogroup always indicates NOT the same direct maternal line (unless it's a variation like a subgroup)
- At Gedmatch.com, some people list their mtDNA-haplogroup
- For full mtDNA testing, order from FamilyTreeDNA
  - However, it's highly unlikely that you'll find a common ancestor even if you have a perfect match.




### X-DNA

- Women get one X from mom and one X from dad
  - X-chromosome in women *usually* recombines (gets shuffled) when women make eggs
- Men get only one X from mom (because they get Y is from dad)
  - X-chromosome in men does not recombine (it's not shuffled)
- *Not the same inheritance pattern as mtDNA!*
- X-DNA Pie Charts are available <http://dnahunters.com/x-dna-inheritance/>
- Understanding X-DNA inheritance lets you interpret your X-DNA matches
- X-DNA Companies
  - Test: autosomal DNA test
  - Ancestry tests it, but you don't "see" it unless you transfer to GEDMatch
  - FamilyTreeDNA indicates X matches & can view them in chromosome browser
  - 23andMe shows X DNA in chromosome browser

- X-DNA Genealogical Uses
  - For women, can use X-DNA as follows:
    - Determine whether 2 ½-sisters share a father
    - Determine certain relationships b/w matches
    - X-matches from father's side = his mother (your paternal grandma)
      - But also can have X-matches from mother's side
  - For men, can use X-DNA as follows:
    - X-matches = maternal matches

## DNA Testing Companies You Need DNA Matches!

	<u>atDNA</u>	Y-DNA	<u>mtDNA</u>
<u>AncestryDNA</u>	Yes	-	-
23andMe	Yes	Basic	Basic
<u>FamilyTreeDNA</u>	Yes	\$\$ Full	\$\$ Full



**atDNA Only!**

## Most Bang for Your DNA Buck\*

AncestryDNA  
(\$99 + shipping)

→

Family Tree  
DNA  
(\$19/transfer)

←

23andMe  
(\$99 or \$199 +  
shipping)

\* Based on Judy Russell, The Legal Genealogist, <http://www.legalgenealogist.com/blog/2015/02/02/2015-most-bang-for-the-dna-buck/>

## Other DNA Companies

### 1. MyHeritage

- 1st in Europe
- Now in US



### 2. Living DNA

- Provides 80 world regions, including 21 in Britain and Ireland
- Matches in the future
- \$159 (but sales)



### 3. NOT AncestryByDNA!!!

#### **Resources (General):**

1. International Society of Genetic Genealogy – [isogg.org](http://isogg.org)
2. Glossary of Terms - [http://isogg.org/wiki/Genetics Glossary](http://isogg.org/wiki/Genetics_Glossary)
3. Short videos on genetic genealogy - <http://learn.genetics.utah.edu/content/basics/molgen/>

Try the **Possible Relationship Calculator** at <http://dnahunters.com/possible-relationships-calculator/>. Input the shared centiMorgans (cM) (or % shared DNA) for a DNA match, and get the possible relationships to that match.