

# Bridging the Gap

Traditional Genealogy to  
Genetic Genealogy

What is genetic genealogy and  
what can it do for me?



# Mitochondrial DNA (mtDNA)

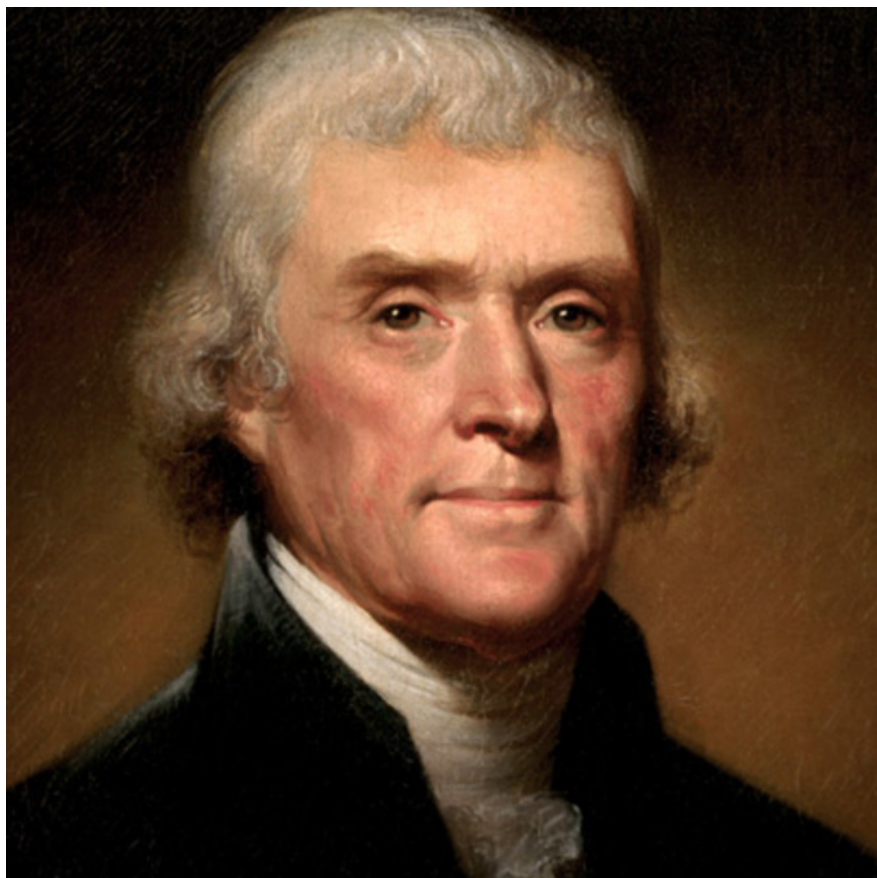
mtDNA is passed exclusively from mother to child, and an mtDNA test reveals information about the test-taker's direct maternal line.

# X-chromosomal DNA (X-DNA)

Focuses on the X chromosome, women have two X chromosomes, one from their father and one from their mother; men have one X chromosome from their mother. For men, the X-DNA test reveals information about maternal lines. For women, the X-DNA test reveals information about both maternal and paternal lines.

# Y-chromosomal DNA (Y-DNA)

Focuses on the Y chromosome, only men have a Y chromosome, and a Y-DNA test reveals information about the (male) test-taker's Y chromosome, which is exclusively passed from fathers to sons.



# Autosomal DNA (atDNA)

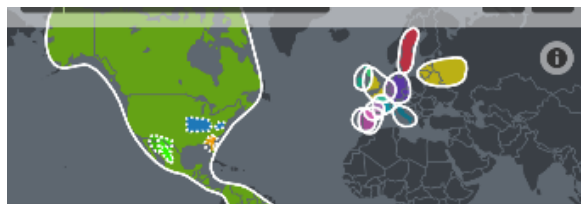
Humans have 23 pairs of chromosomes 22 are autosomal DNA and one is sex chromosomes. One copy of each chromosome is inherited from the mother and one copy from the father. An atDNA test reveals information about both paternal and maternal lines. Most common type of test, Ancestry & 23andme



# Why DNA test?

- Verify questionable findings
  - Break down brick walls
    - It's fun!!

# Ethnicity Estimates and Matches



## Ethnicity Estimate

|                                         |     |   |
|-----------------------------------------|-----|---|
| England, Wales & Northwestern Europe    | 71% | > |
| Native American—North, Central, South   | 9%  | > |
| Sonora, Mexico & Southwestern Arizona   |     | > |
| Chihuahua, Durango & Zacatecas          |     | > |
| Durango, Zacatecas & Southern Chihuahua |     |   |
| Ireland & Scotland                      | 7%  | > |
| France                                  | 3%  | > |
| Italy                                   | 3%  | > |
| Germanic Europe                         | 2%  | > |
| Portugal                                | 1%  | > |

## Parent/Child

|  |                                                         |                                 |
|--|---------------------------------------------------------|---------------------------------|
|  | <b>Charles Myers</b><br>Parent/Child<br>3,458 cM shared | 1,630 People<br>Common ancestor |
|  | <b>debora ramos</b><br>Parent/Child<br>3,450 cM shared  | 84 People<br>Common ancestor    |

## Close Family

|  |                                                             |                                 |
|--|-------------------------------------------------------------|---------------------------------|
|  | <b>Chuck Ramos</b><br>Close Family<br>1,760 cM shared       | 3,893 People<br>Common ancestor |
|  | <b>Ernestine Herrera</b><br>Close Family<br>1,685 cM shared | 1,630 People<br>Common ancestor |

## 1st Cousin

|  |                                                                         |                                  |
|--|-------------------------------------------------------------------------|----------------------------------|
|  | <b>R.R.</b><br>Managed by Mendora Servin<br>1st Cousin<br>816 cM shared | 19,364 People<br>Common ancestor |
|  | <b>hawaiiifireprotectiondccc1</b><br>1st Cousin<br>768 cM shared        | Unlinked Tree                    |
|  | <b>T.M.</b><br>Managed by vicki5418<br>1st Cousin<br>672 cM shared      | 703 People<br>Common ancestor    |

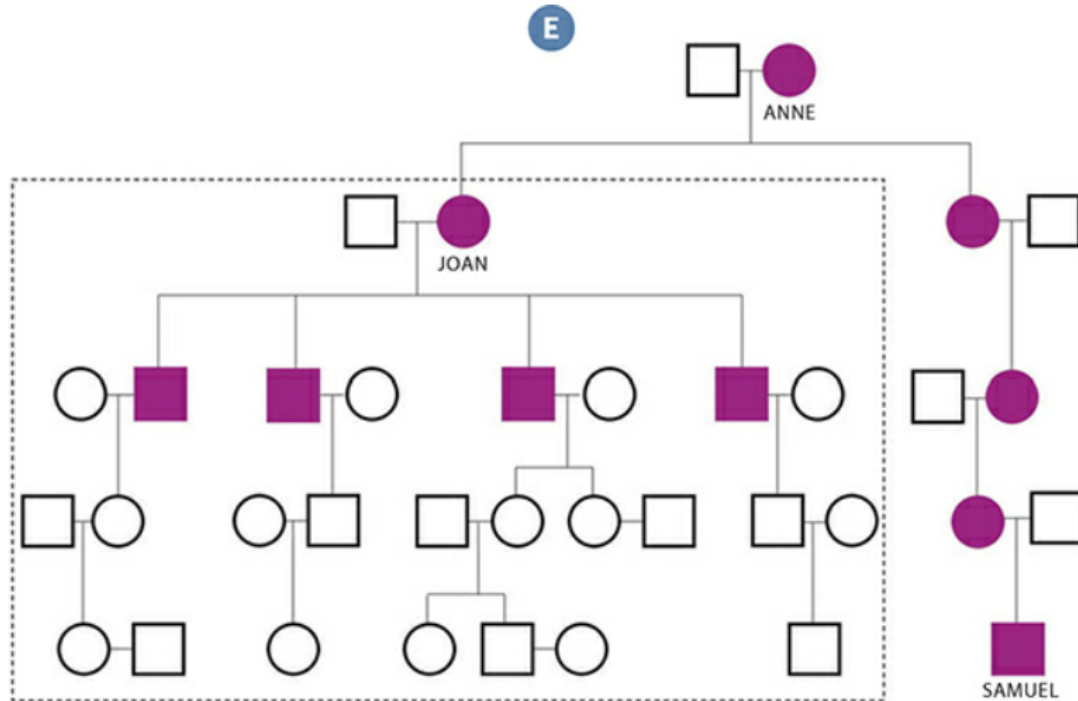
# Using matches to break down brick walls

1. Analyze your matches (choose who to concentrate on, review their trees and/or lack thereof)
2. Build out trees (yours and theirs)
3. Find your most recent common shared ancestor
4. Connect the dots

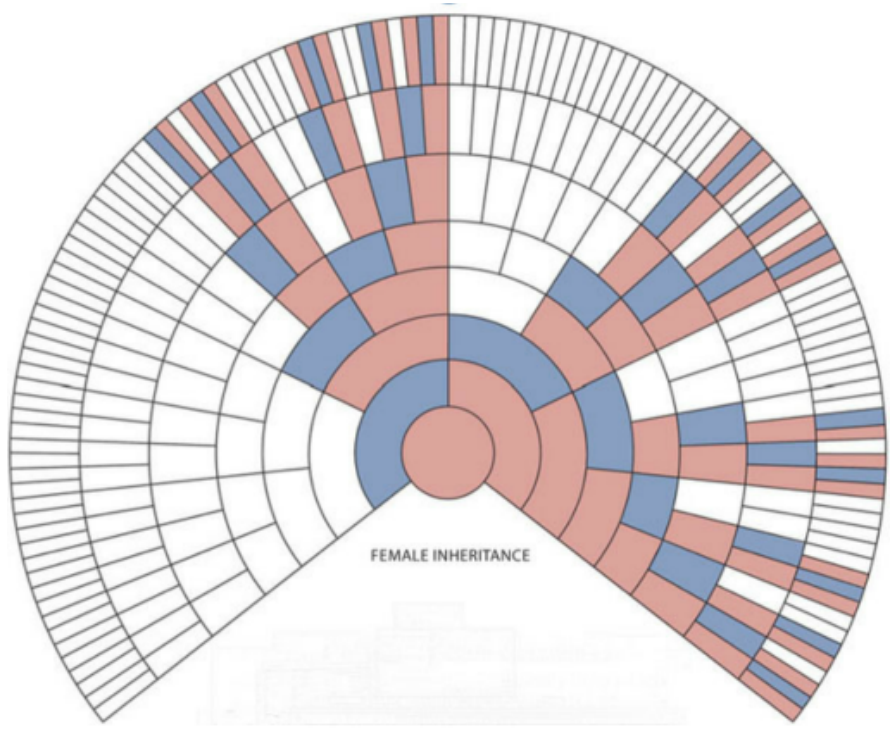
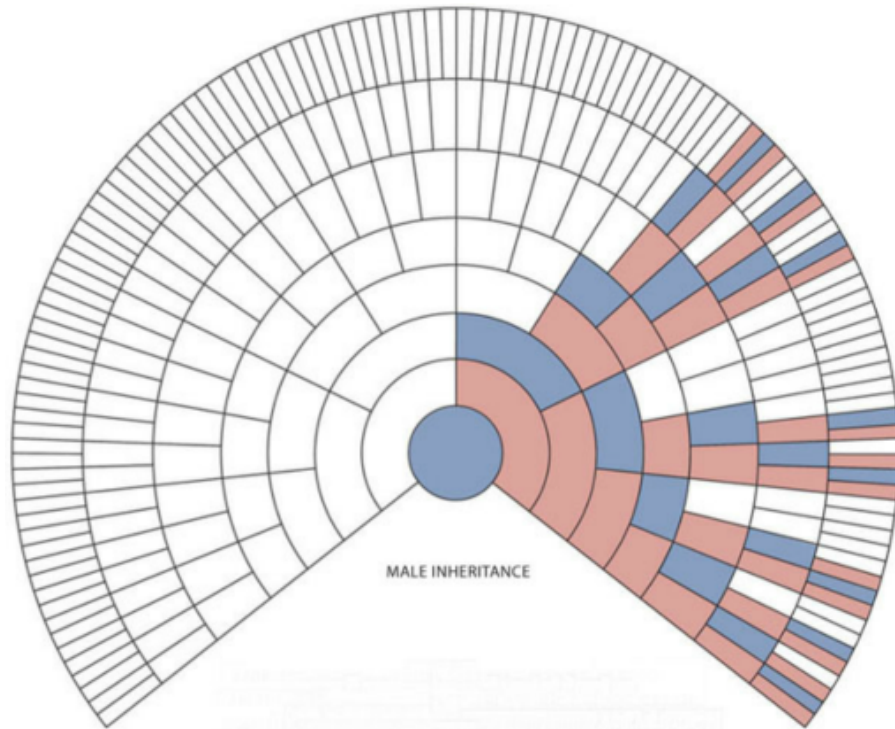
# DNA Clues

- mtDNA, maternal line
- Y-DNA, paternal line
- X-DNA, inheritance pattern

The pedigree chart illustrates the inheritance of Down syndrome across three generations. Generation I consists of ANNE (affected female) and an unaffected male. Generation II includes JOAN (affected female) and an unaffected male. Generation III shows multiple offspring, including SAMUEL (affected male). A dashed box encloses the family members from Generation II to Generation III.



# X-DNA



# Digging Deeper

*The Family Tree Guide to DNA testing and genetic  
genealogy by Blaine Bettinger*

*Gedmatch*

*DNAAgedcom*

*DNA2tree*

*GeneticAffairs (Collins Leeds Method)*

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