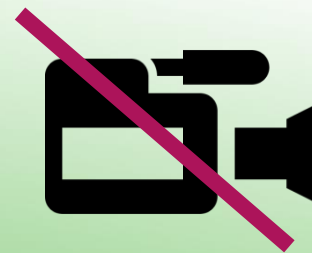


A Beginner's Guide to Using DNA To Research Your Family Tree

Julie Stoddard, MSc, AG[®]

- Co-owner, ConnectTheBranch.com
- Senior Mentor at BYU's Center for Family History & Genealogy

- Please silence all electronic devices
- No audio or video recording
- Photos allowed

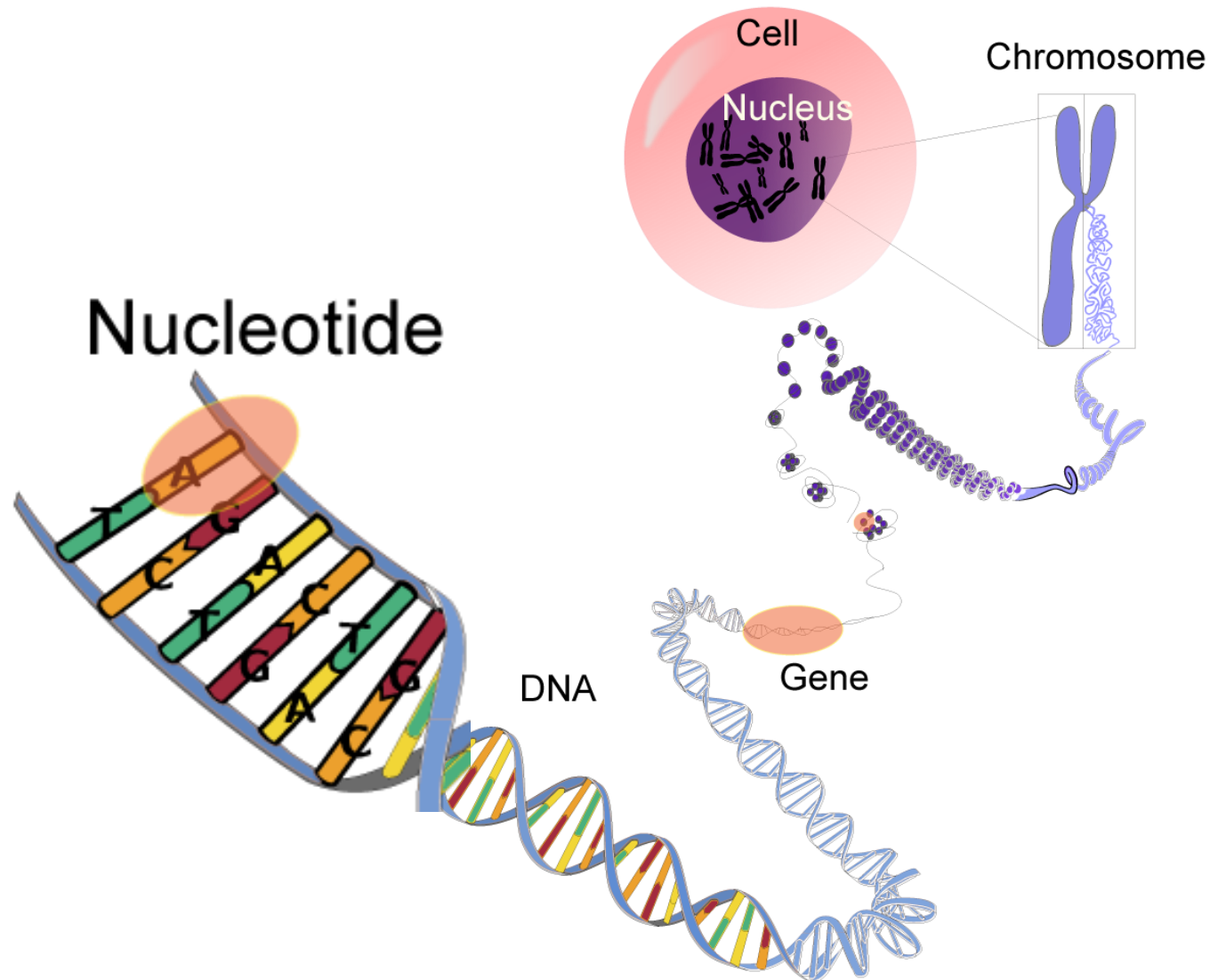


Learning Outcomes

1. How DNA is inherited from your ancestors.
2. The information and tools on the “DNA Results” pages.
3. How DNA provides genealogical evidence.
4. Strategies to organize and use your DNA matches to confirm and extend your tree.

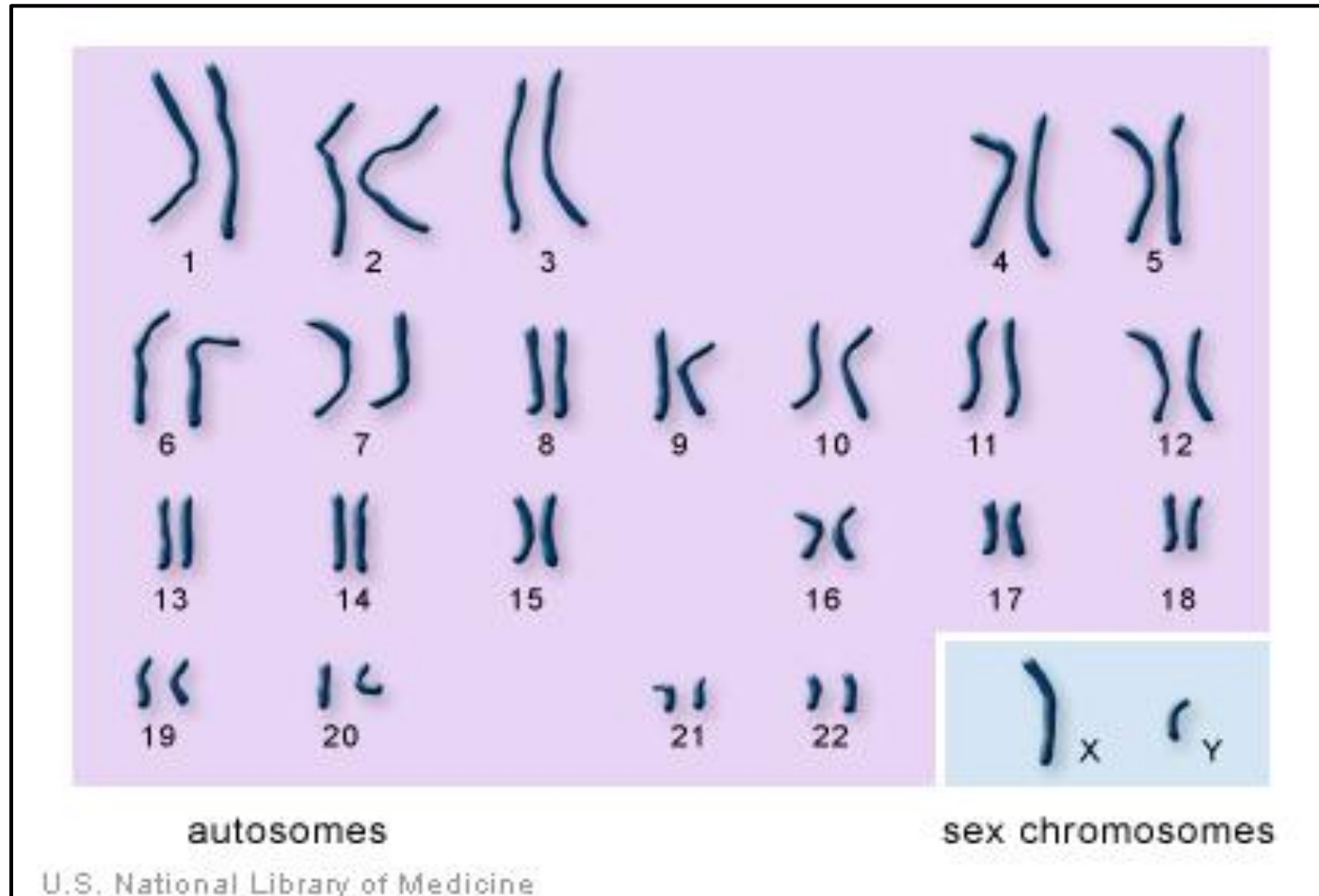
DNA

DeoxyriboNucleic Acid (DNA)



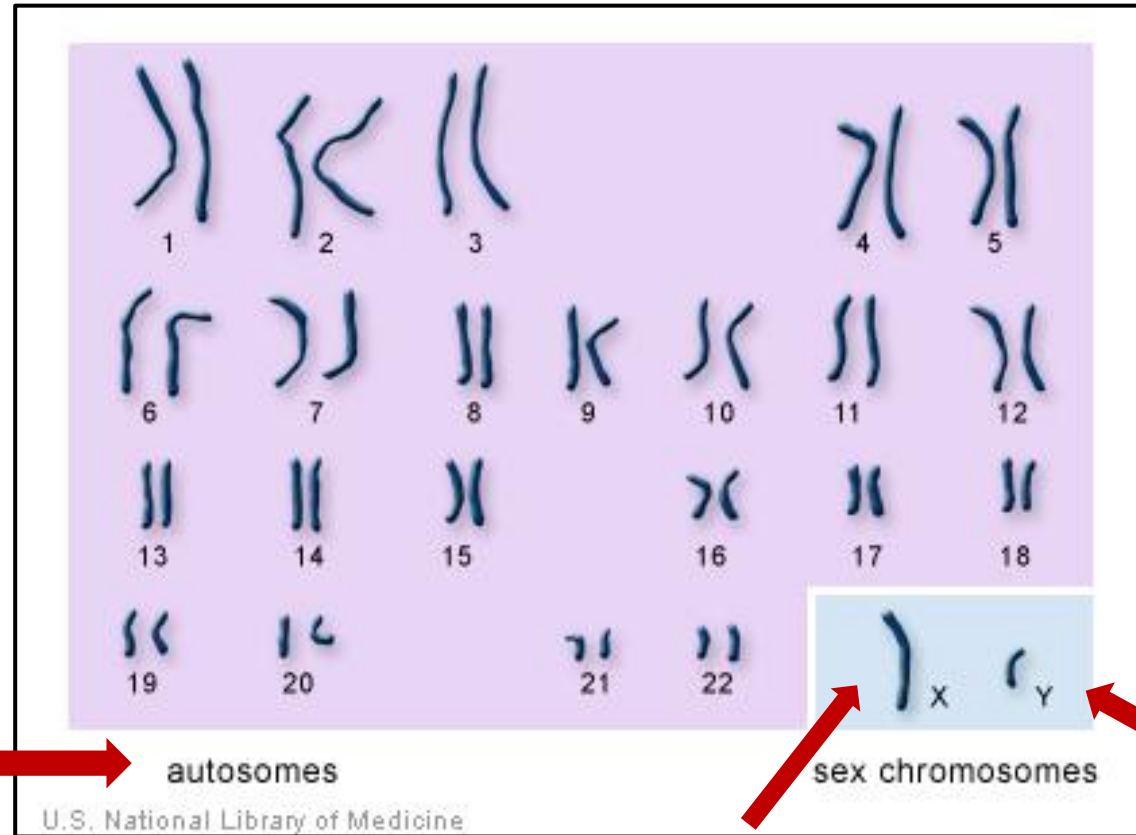
Chromosomes

You have two copies of each chromosome.
You get one copy from each parent.



Types of DNA

There are four types of DNA, each with a unique inheritance pattern.



1) autosomal DNA on 22 chromosomes

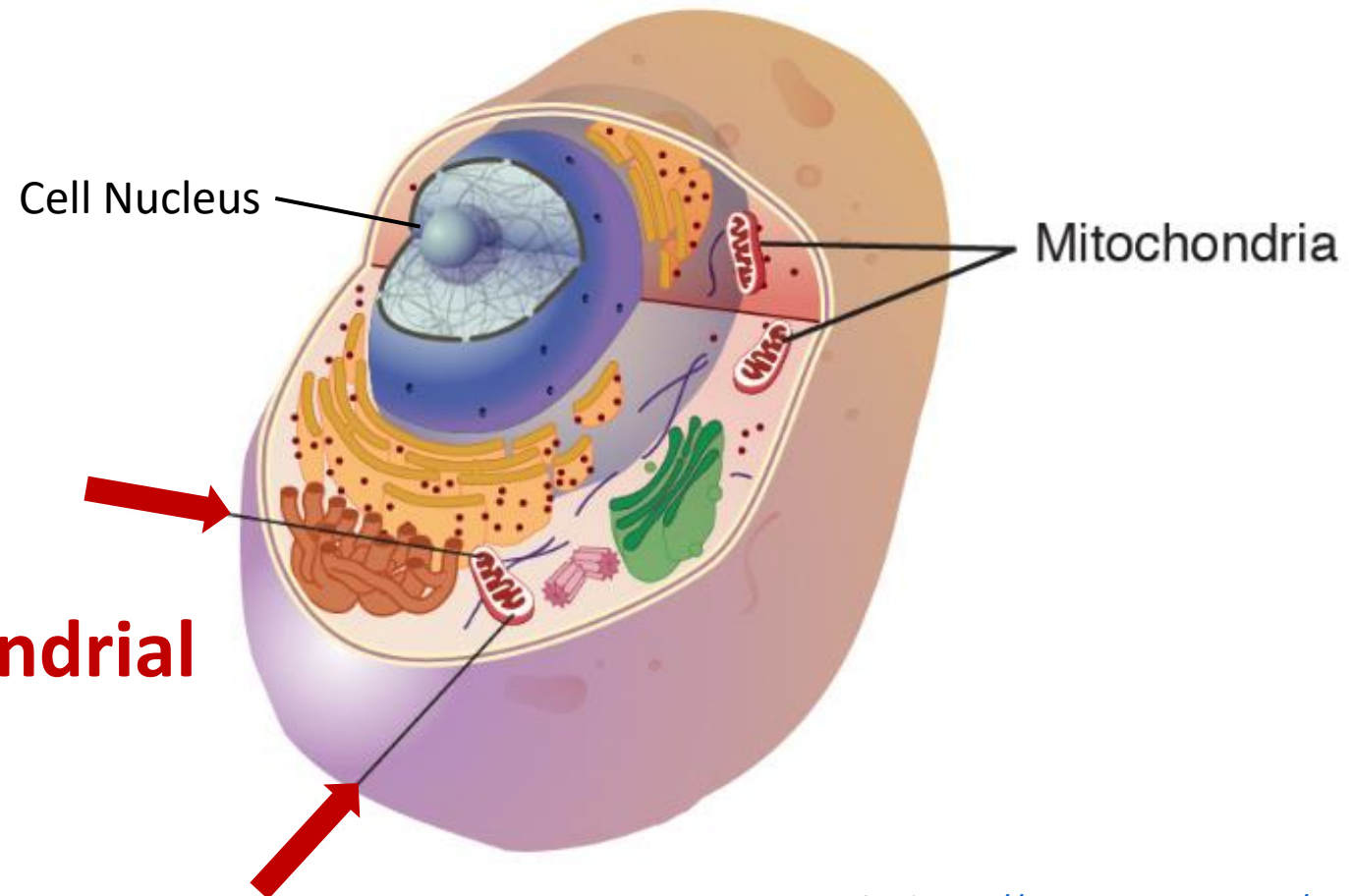
2) X DNA

3) Y DNA

Types of DNA

Mitochondrial DNA:

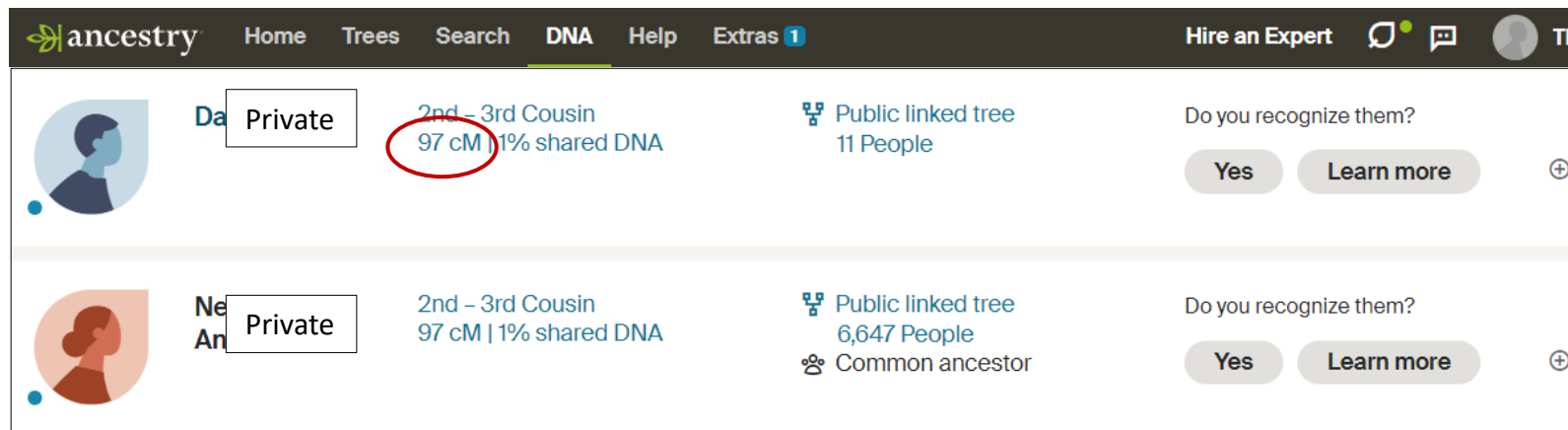
4) Mitochondrial DNA



Centimorgans

Segments of DNA are often measured in centimorgans (cM).

- cM is not a measurement of length.
- cM is a measurement of genetic distance.



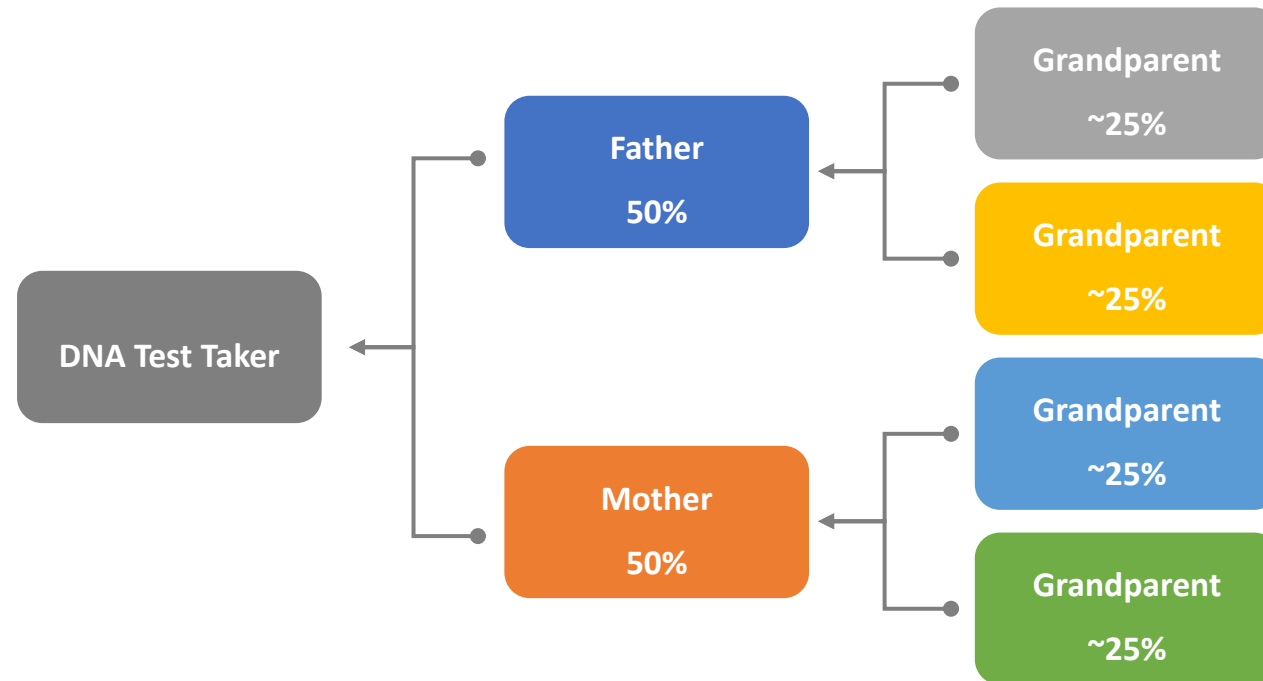
The screenshot shows the Ancestry DNA interface. At the top, there is a navigation bar with 'ancestry' logo and links for Home, Trees, Search, DNA, Help, and Extras. Below the navigation bar, there are two match cards. The first card shows a profile picture of a man, a 'Private' label, and the text '2nd - 3rd Cousin' and '97 cM | 1% shared DNA'. The second card shows a profile picture of a woman, a 'Private' label, and the text '2nd - 3rd Cousin' and '97 cM | 1% shared DNA'. Both cards also show 'Public linked tree' information and a 'Do you recognize them?' section with 'Yes' and 'Learn more' buttons. The '97 cM' value in the first card is circled in red.

Match Name	Relationship	Shared DNA	Public linked tree	Do you recognize them?
Da [Private]	2nd - 3rd Cousin	97 cM 1% shared DNA	Public linked tree 11 People	Do you recognize them? Yes Learn more
Ne An [Private]	2nd - 3rd Cousin	97 cM 1% shared DNA	Public linked tree 6,647 People Common ancestor	Do you recognize them? Yes Learn more

Living DNA test takers shown in this presentation consented to their data being shown or their names are changed/redacted.

Inheritance

A person inherits about 25% from each grandparent and 12.5% from each great-grandparent, etc.

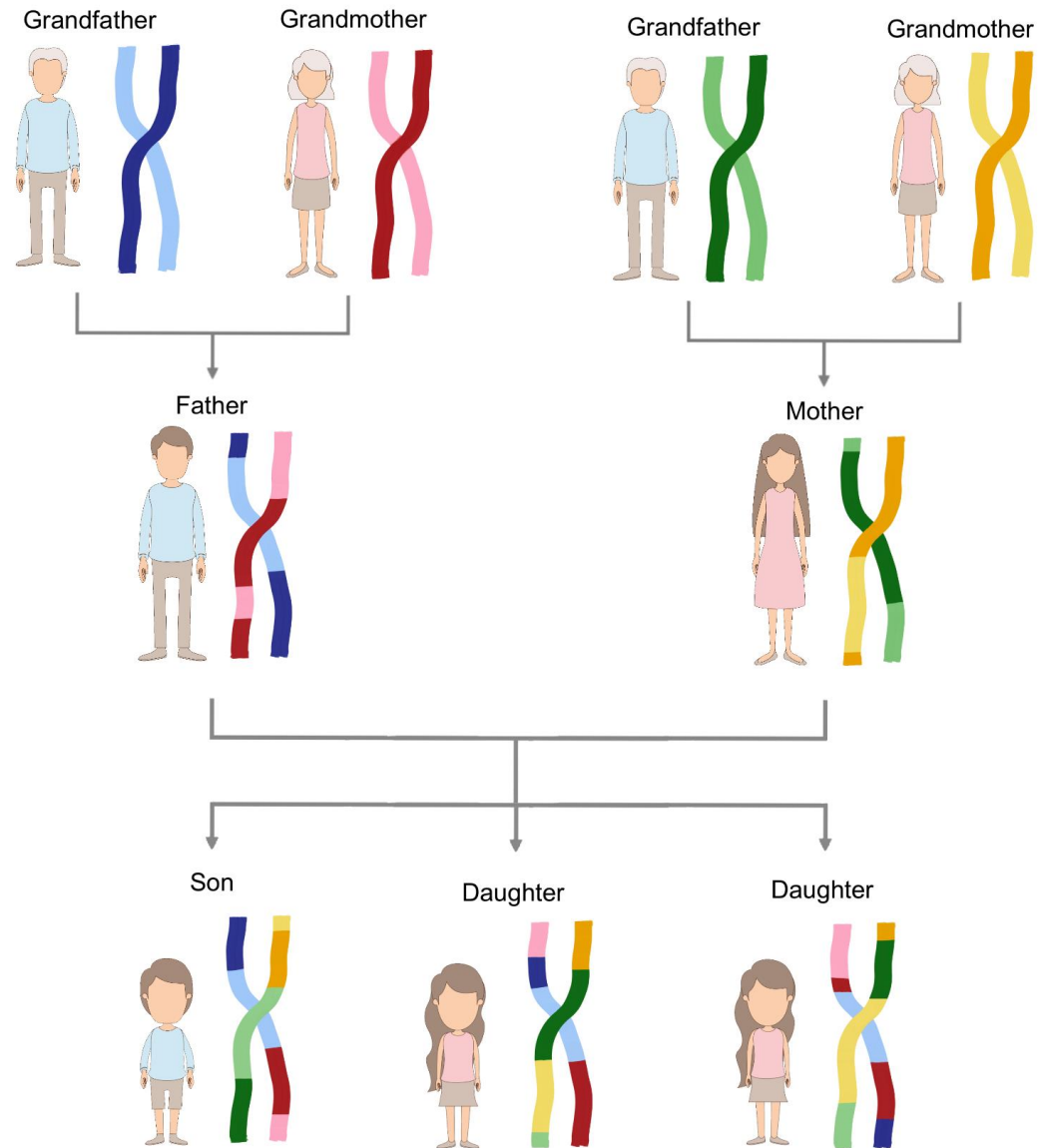


Not all your distant cousins will share autosomal DNA with you.

Recombination

Autosomal DNA
recombines (shuffles)
each time a child is
created.

Recombination is an
exchange of DNA
segments between the
maternal and paternal
chromosomes.



Where Do I Test?

TIPS: Test the oldest possible candidate.
Holidays and Black Friday have the cheapest deals.

Company	AncestryDNA	23andMe	MyHeritage	Family Tree DNA
Type of DNA test	Autosomal	Autosomal	Autosomal	Autosomal, Y-DNA, or Mitochondrial
People in the database (Oct 2022)	21,000,000 people	12,800,000 people	6,000,000	1,200,000
Upload DNA from other companies?	No	No	Yes	Yes
Segment data?	No	Yes	Yes	Yes

Fish in all ponds

Transfer your DNA to other databases that allow it.



Your DNA Results

AncestryDNA Landing Page

ancestry Home Trees Search **DNA** Help Extras Hire an Expert Theron Stoddard

Activate a Test Settings

Hello, Theron
This test is shown to matches as Theron Stoddard Linked to Theron Mark Stoddard

AncestryDNA® Traits
Now with new fitness traits and more nutrient traits
Get the most out of your DNA by adding AncestryDNA® Traits to your results. Learn how your genetics influence how quickly your heart rate recovers after exercise or the role genetics play in whether you sneeze in bright light.
Get AncestryDNA Traits

DNA Story
Ethnicity Estimate
61% England & Northwestern Europe
22% Scotland
4 Other regions
Discover the places, history, and cultures that shaped who you are today—using just your DNA.
Discover Your DNA Story

DNA Matches
0 Starred matches
1000+ 4th cousins or closer
View DNA Matches

ThruLines®
ThruLines uses Ancestry trees to suggest how you may be related to your DNA matches through common ancestors.
Explore ThruLines

Your DNA Results

AncestryDNA Results Page

The screenshot shows the AncestryDNA interface for Theron Stoddard's DNA matches. The navigation bar at the top includes 'ancestry', 'Home', 'Trees', 'Search', 'DNA' (highlighted with a red box), 'Help', and 'Extras'. The user's name 'Theron Stoddard' is visible in the top right corner. The main heading is 'Theron Stoddard's DNA Matches', with a link to 'View Stoddard-Law Tree'. Below the heading, there are tabs for 'All matches', 'By parent', 'By ancestor', and 'By location'. A red arrow points to the 'All matches' tab. The 'Filter by' section includes 'Unviewed', 'Common ancestors', 'Notes', 'Trees', 'Shared DNA', and 'Groups'. The matches list is displayed below, with a red box highlighting the first match. A red arrow points to the '700 cM' value in the first match, with the text 'cM' written in red next to it.

Match	Relationship	Shared DNA	Tree	Common Ancestor	Action
Private	1st cousin 1x removed	700 cM 10% shared DNA	Public linked tree	3 People	View match
Private	1st - 2nd Cousin	576 cM 8% shared DNA	Private linked tree	52 People	Do you recognize them? Yes Learn more
Private	1st cousin 1x removed	565 cM 8% shared DNA	Public linked tree	3,883 People	View match
Private	1st - 2nd Cousin	555 cM 8% shared DNA	No Trees		Do you recognize them? Yes Learn more

Your DNA Results

AncestryDNA Results Page

The screenshot shows the AncestryDNA interface for Theron Stoddard's DNA matches. The navigation bar includes 'ancestry', 'Home', 'Trees', 'Search', 'DNA' (highlighted with a red box), 'Help', and 'Extras'. The user's name 'Theron Stoddard' is visible in the top right. The main heading is 'Theron Stoddard's DNA Matches' with a link to 'View Stoddard-Law Tree'. Below this are filters for 'All matches', 'By parent', 'By ancestor', and 'By location'. A 'Filter by:' section includes 'Unviewed', 'Common ancestors', 'Notes', 'Trees', 'Shared DNA', and 'Groups'. The matches list shows several entries with details on relationship, shared DNA, and linked trees. Red arrows point to specific UI elements: 'Notes' points to the note icon in the first match's details; 'Groups' points to the group icon in the first match's details; and 'Not Viewed' Dot points to the blue dot in the first match's status indicator.

Match Name	Relationship	Shared DNA	Linked Tree	People	Common Ancestor	View Match
an e Private	1st cousin 1x removed	700 cM 10% shared DNA Paternal side	Public linked tree	3 People	Common ancestor	View match
Daughter of Ric	r, son of Estelle Stoddard					
Al Private	1st - 2nd Cousin	576 cM 8% shared DNA Paternal side	Private linked tree	52 People	Common ancestor	Do you recognize them? Yes Learn more
Common Ancestors: William H. Stoddard and Catherine Coffin						
T.H. Managed by Private	1st cousin 1x removed	565 cM 8% shared DNA Maternal side	Public linked tree	3,883 People	Common ancestor	View match
Grandchild of Ca	, daughter of Milford Law and Edith Lowe.					
Al Private	1st - 2nd Cousin	555 cM 8% shared DNA Maternal side	No Trees			Do you recognize them? Yes Learn more

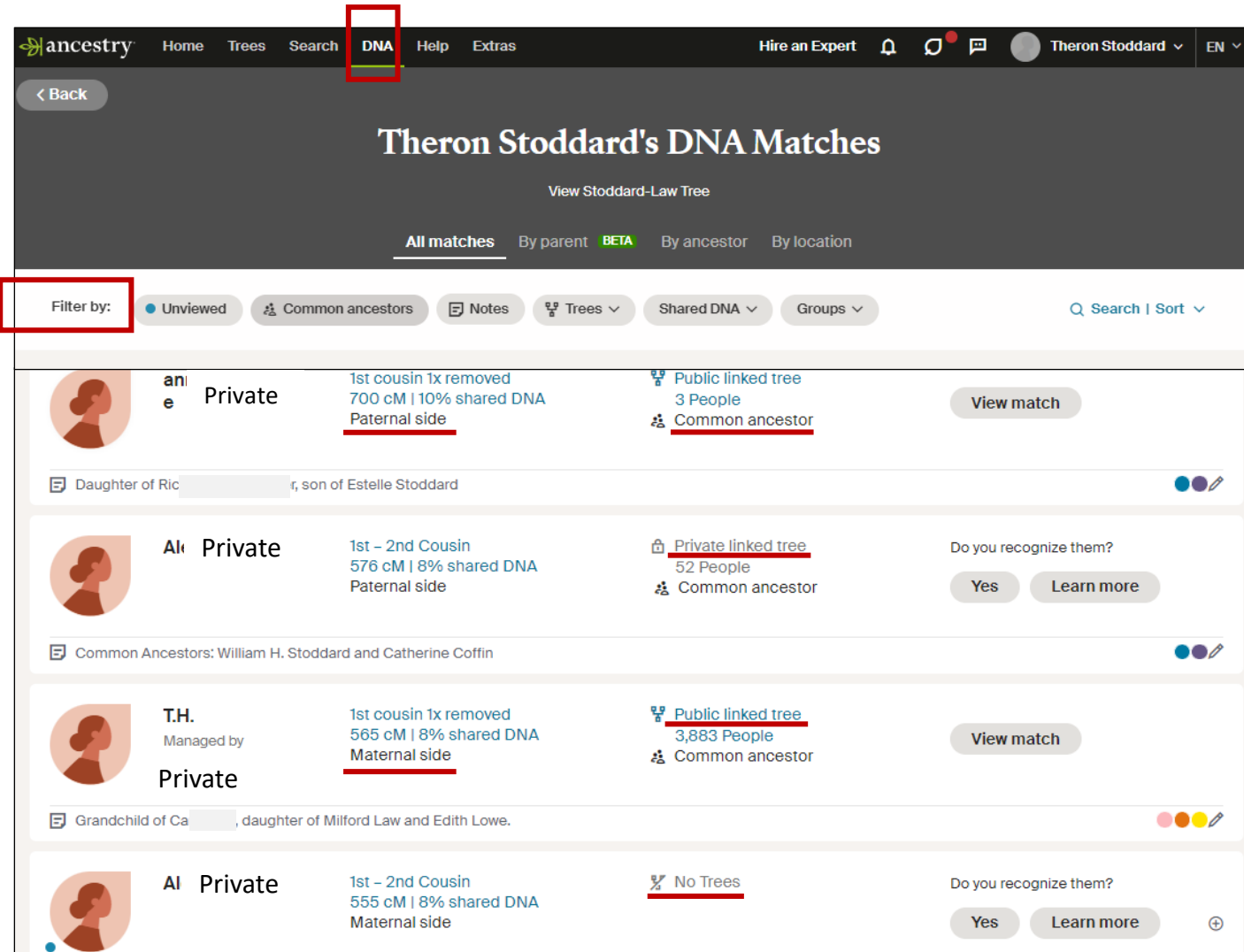
Notes

Groups

“Not Viewed” Dot

Your DNA Results

AncestryDNA Results Page



The screenshot shows the AncestryDNA interface for Theron Stoddard's DNA matches. The navigation bar at the top includes 'ancestry', 'Home', 'Trees', 'Search', 'DNA' (highlighted with a red box), 'Help', and 'Extras'. The user's name 'Theron Stoddard' is visible in the top right. Below the navigation bar, the page title is 'Theron Stoddard's DNA Matches' with a link to 'View Stoddard-Law Tree'. The main content area features a 'Filter by:' section (highlighted with a red box) with options: 'Unviewed', 'Common ancestors', 'Notes', 'Trees', 'Shared DNA', and 'Groups'. A search and sort icon is also present. The matches are listed in a table-like format with four entries:

Match Profile	Relationship & Shared DNA	Tree Information	Actions
Private an e	1st cousin 1x removed 700 cM 10% shared DNA Paternal side	Public linked tree 3 People Common ancestor	View match
Private Al	1st - 2nd Cousin 576 cM 8% shared DNA Paternal side	Private linked tree 52 People Common ancestor	Do you recognize them? Yes Learn more
T.H. Managed by Private	1st cousin 1x removed 565 cM 8% shared DNA Maternal side	Public linked tree 3,883 People Common ancestor	View match
Private Al	1st - 2nd Cousin 555 cM 8% shared DNA Maternal side	No Trees	Do you recognize them? Yes Learn more

Filtering DNA Matches

ancestry Home Trees Search **DNA** Help Extras Hire an Expert 1

Theron Stoddard's DNA Matches

View Stoddard-Law Tree

All matches **By parent BETA** By ancestor By location

Updated Dec 2022

Paternal

31,748 matches

[View matches](#) [Edit parent](#)

Last names in trees

**Bowman
Stoddard
Hunt
Brown**

In the trees of your closest paternal matches, these last names are the most common.

[View more](#)

Common communities

**Scottish Lowlands,
Northern England &
Northern Ireland**

[View more](#)

Ethnicity inheritance

Paternal

[View more](#)

Maternal

17,983 matches

[View matches](#) [Edit parent](#)

Last names in trees

**Price
Brown
Belnap
Bocock**

In the trees of your closest maternal matches, these last names are the most common.

[View more](#)

Common communities

**Scottish Lowlands,
Northern England &
Northern Ireland**

[View more](#)

Ethnicity inheritance

Maternal

[View more](#)

Filtering DNA Matches

The “By Ancestor” filter displays Ancestry’s ThruLines tool, which predicts how you and a DNA match are related based on Ancestry Public Member Trees.

This means you need to verify everything!

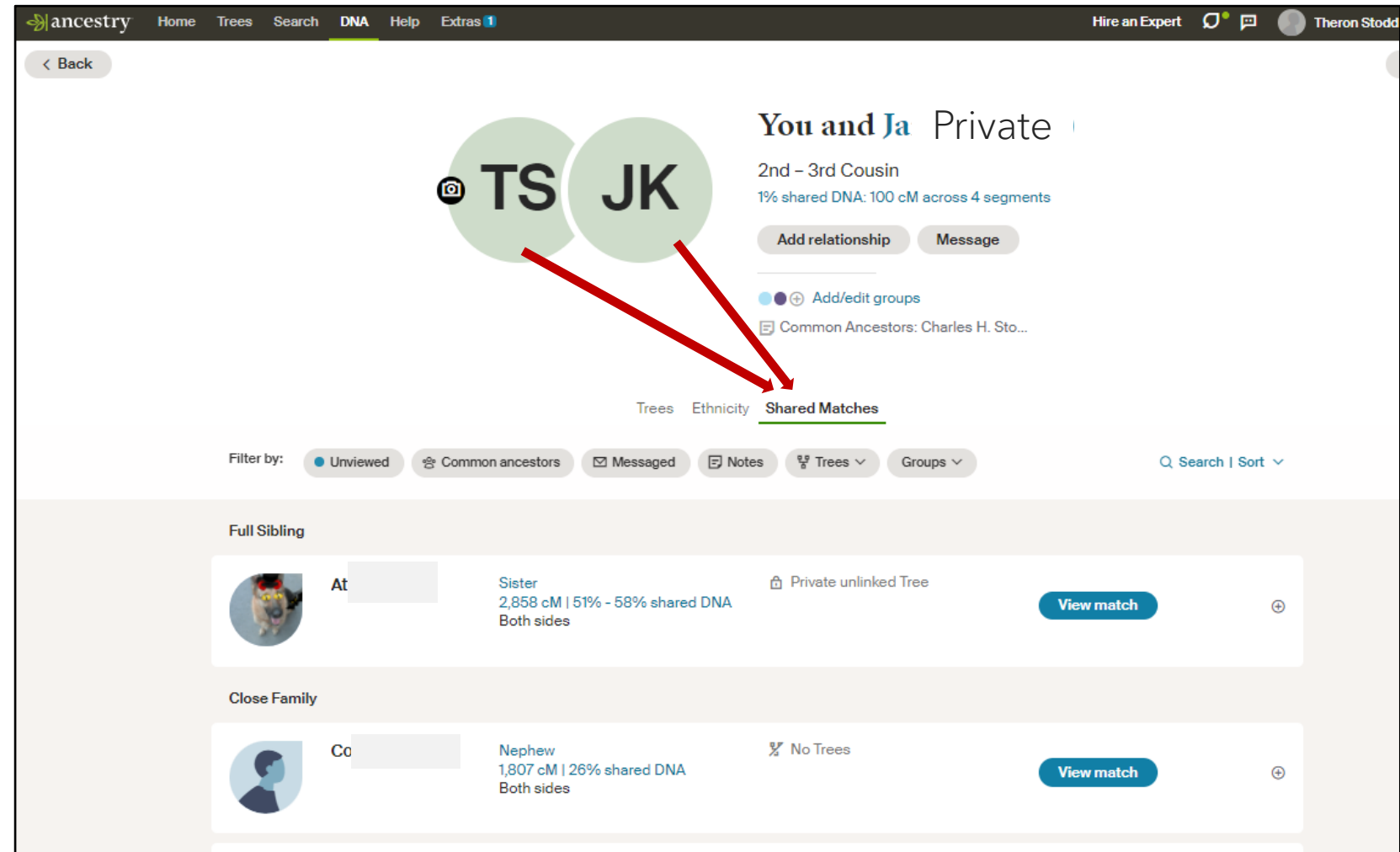
The screenshot shows the Ancestry.com interface for Theron Stoddard's DNA matches. The navigation bar at the top includes 'ancestry', 'Home', 'Trees', 'Search', 'DNA' (highlighted with a red box), 'Help', and 'Extras'. The user's name 'Theron Stoddard' is visible in the top right. The main heading is 'Theron Stoddard's DNA Matches', with a link to 'View Stoddard-Law Tree'. Below the heading are filter options: 'All matches', 'By parent' (with a 'BETA' badge), 'By ancestor' (highlighted with a red box), and 'By location'. A 'Filters' dropdown menu is open, showing 'ThruLines®' (highlighted with a red box). A text box explains that ThruLines shows relationships through shared ancestors and provides a link to 'Learn more about ThruLines'. The main content area displays a family tree with three levels: Parents, Grandparents, and Great Grandparents. Each level shows profile cards for individuals with their names, roles, and dates.

Parents	Grandparents	Great Grandparents
Ray Webster Stoddard Father 1924-2001	William Henry Stoddard Paternal grandfather 1880-1954	George Henry Stoddard Great-grandfather 1852-1935
Thelma Law Mother 1932-	Catherine Coffin Paternal grandmother 1880-1964	Hannah Elizabeth Bowman Great-grandmother 1855-1916
	Milford Robert Law Maternal grandfather 1903-1972	William Albert Coffin Great-grandfather 1846-1924
	Edith Lowe Maternal grandmother 1905-1976	Sophonra Elizabeth Hunt Great-grandmother 1848-1942

DNA Match Page: Shared Match List

Clicking on the Shared Match tab shows the list of matches that TS (Theron) and JK have in common.

This is referred to as match triangulation.



The screenshot shows the Ancestry DNA interface for a shared match between 'You' and 'Ja'. The relationship is identified as '2nd - 3rd Cousin' with '1% shared DNA: 100 cM across 4 segments'. Two red arrows point from the 'TS' and 'JK' profile icons to the 'Shared Matches' tab, which is currently selected. Below the navigation tabs, there are filter options: 'Unviewed', 'Common ancestors', 'Messaged', 'Notes', 'Trees', and 'Groups'. The match list is divided into two sections: 'Full Sibling' and 'Close Family'. The first match is a 'Full Sibling' relationship with a 'Sister' who has '2,858 cM | 51% - 58% shared DNA' and is linked to a 'Private unlinked Tree'. The second match is a 'Close Family' relationship with a 'Nephew' who has '1,807 cM | 26% shared DNA' and has 'No Trees'.

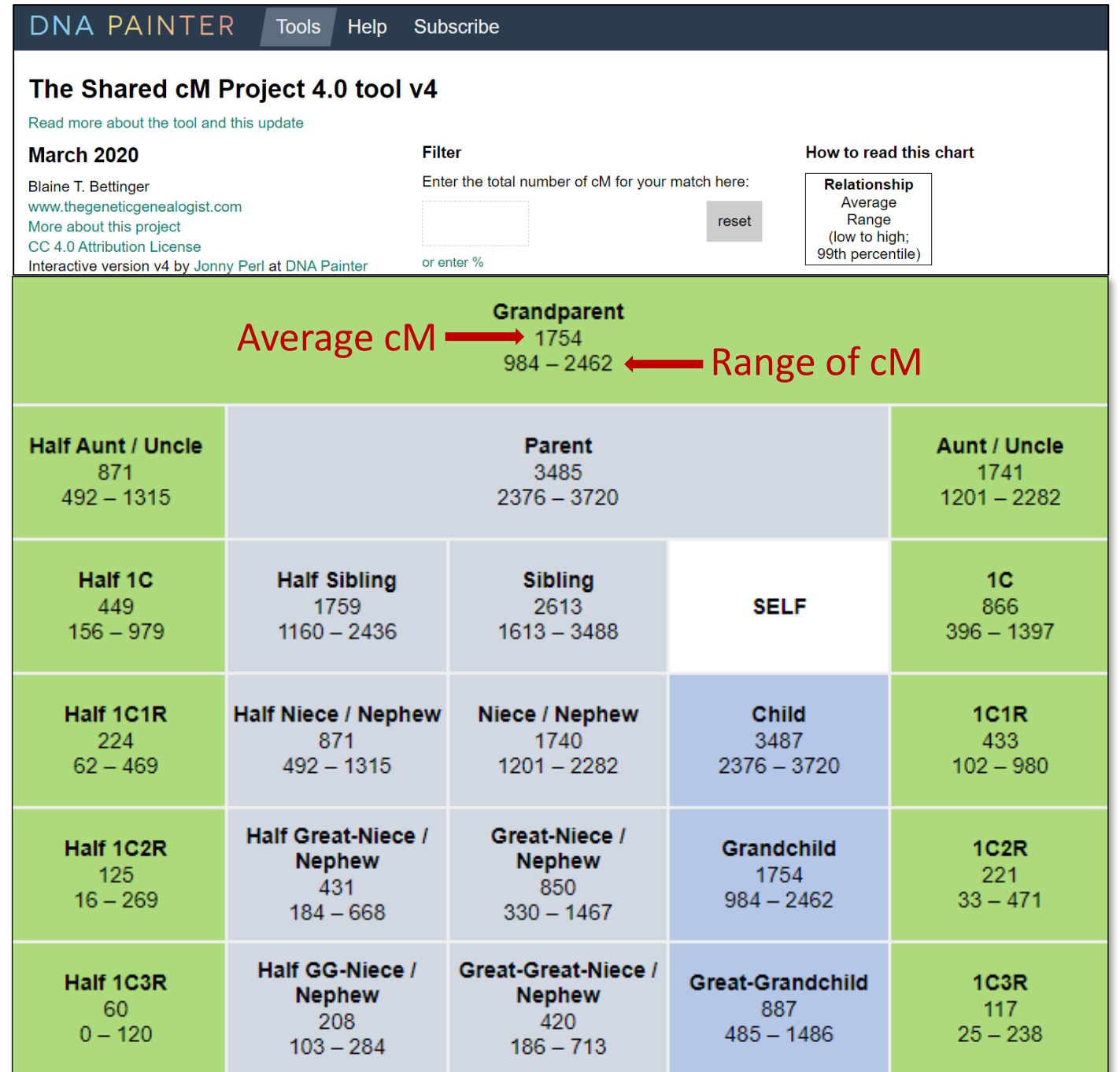
Relationship	Match Name	Shared DNA	Tree Status	Action
Full Sibling	At [redacted]	Sister 2,858 cM 51% - 58% shared DNA Both sides	Private unlinked Tree	View match
Close Family	Co [redacted]	Nephew 1,807 cM 26% shared DNA Both sides	No Trees	View match

DNA Evidence

Principle #1:

The more cM a person shares with a DNA match, the closer the relationship.

The Shared cM Project on DNA Painter shows possible relationships.



DNA Evidence

Enter the number of cM you share with a match to highlight possible relationships.

dnainter.com/tools/sharedcmv4

Blaine T. Bettinger
www.thegeneticgenealogist.com
More about this project
CC 4.0 Attribution License
Interactive version v4 by Jonny Perli at DNA Painter
Click here to contribute data to the shared cM project
Last updated 26th March 2020

Enter the total number of cM for your match here:
244
or enter %
Then any relationships that fit will stand out below
Click here for a shareable link to the cM amount above

Relationship Average Range
(low to high; 99th percentile)

Important

- For relationships more distant than Half 2C, the averages were determined only for relationships in which DNA was shared.
- The more distant a relationship, the more likely it is that you won't share DNA at all (read more)
- These statistics do not cater for pedigree collapse or endogamy

Most distant common ancestors
Assuming no pedigree collapse or endogamy, and that you're related in just one way, the furthest back you might need to go to find common ancestors for a match of 244cM is 3rd-Great-Grandparent level or generation 6 on your pedigree chart.
The connection may be closer.

Relationship probabilities (based on stats from The DNA Geek)
New: View these relationships in a tree

62%	Half GG-Aunt / Uncle Half GG-Niece / Nephew
28%	1C3R † Half 2C 2C1R Half 1C2R
11%	Great-Great-Aunt / Uncle Half Great-Aunt / Uncle Half 1C 1C1R Half Great-Niece / Nephew Great-Great-Niece / Nephew
0.23%	3C † Half 1C3R † Half 2C1R † 2C2R

† this relationship has a positive probability for 244cM in the DNA Geek's table of probabilities, but falls outside the bounds of the recorded cM range (99th percentile)

Other versions
Beta with updated probabilities
With editable boxes
Shared cM 3.0 (2017) version

Now Click on any relationship to view a histogram
[Read more about cousin relationships](#)

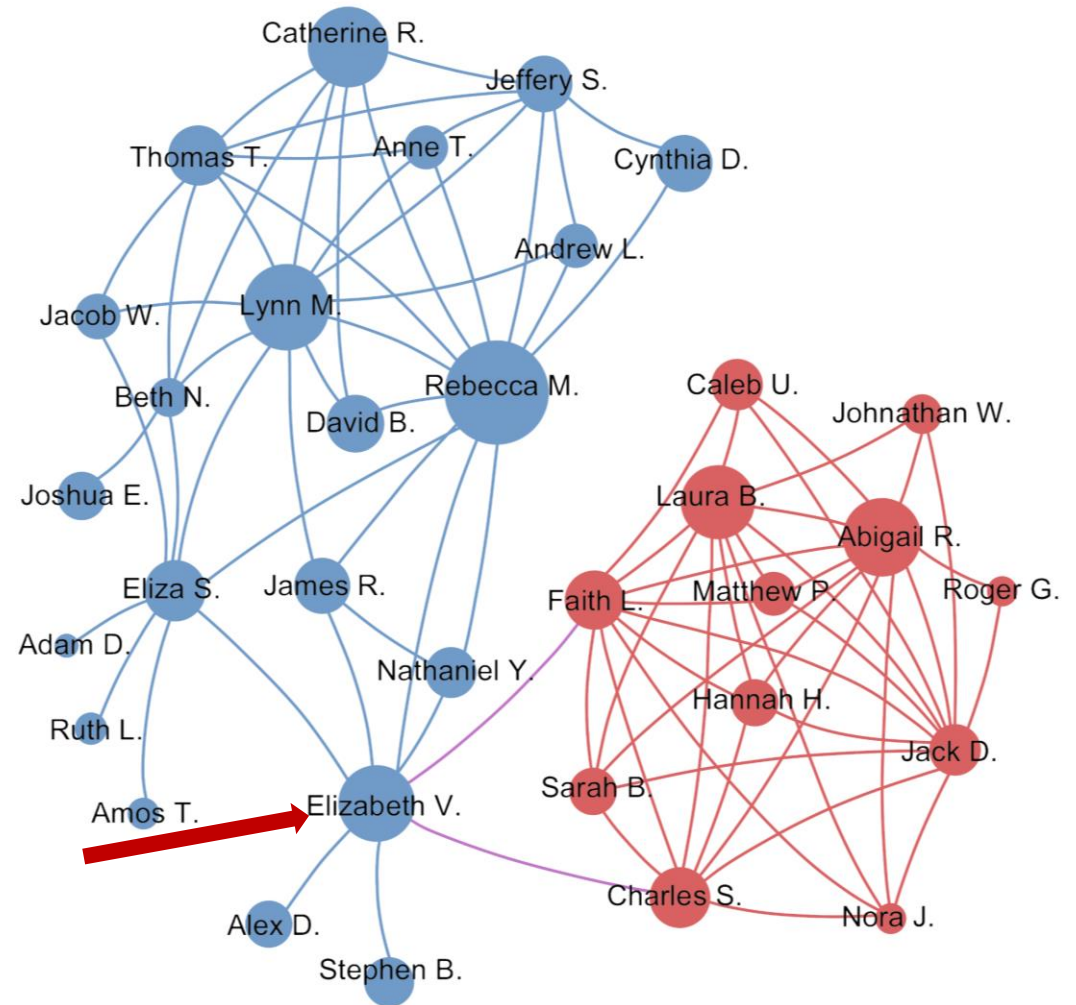
							Great-Great-Grandparent	GGGG Aunt / Uncle					
							Great-Great-Grandparent	GGG Aunt / Uncle					
Half GG-Aunt / Uncle 208 103 – 284							Great-Grandparent 887 485 – 1488	Great-Great-Aunt / Uncle 420 188 – 713	1C3R 117 25 – 238	2C3R 51 0 – 154	Other Relationships		
Half 1C2R 125 16 – 269	Half Great-Aunt / Uncle 431 184 – 888						Grandparent 1754 984 – 2482	Great-Aunt / Uncle 850 330 – 1487	1C2R 221 33 – 471	2C2R 71 0 – 244	3C2R 36 0 – 186	6C 18 0 – 71	
Half 2C1R 66 0 – 190	Half 1C1R 224 82 – 469	Half Aunt / Uncle 871 492 – 1315					Parent 3485 2378 – 3720	Aunt / Uncle 1741 1201 – 2282	1C1R 433 102 – 980	2C1R 122 14 – 353	3C1R 48 0 – 192	4C1R 28 0 – 128	6C1R 15 0 – 58
Half 3C 48 0 – 158	Half 2C 120 10 – 325	Half 1C 449 156 – 979	Half Sibling 1759 1180 – 2438	Sibling 2613 1613 – 3488	SELF		1C 886 398 – 1397	2C 229 41 – 592	3C 73 0 – 234	4C 35 0 – 139	5C 25 0 – 117	6C2R 13 0 – 45	
Half 3C1R 37 0 – 139	Half 2C1R 66 0 – 190	Half 1C1R 224 82 – 469	Half Niece / Nephew 871 492 – 1315	Niece / Nephew 1740 1201 – 2282	Child 3487 2378 – 3720		1C1R 433 102 – 980	2C1R 122 14 – 353	3C1R 48 0 – 192	4C1R 28 0 – 128	5C1R 21 0 – 80	7C 14 0 – 57	
Half 3C2R 27 0 – 78	Half 2C2R 48 0 – 144	Half 1C2R 125 16 – 269	Half Great-Niece / Nephew 431 184 – 888	Great-Niece / Nephew 850 330 – 1487	Grandchild 1754 984 – 2482		1C2R 221 33 – 471	2C2R 71 0 – 244	3C2R 36 0 – 186	4C2R 22 0 – 93	5C2R 18 0 – 65	7C1R 12 0 – 50	
Half 3C3R 80 10 – 240	Half 2C3R 80 10 – 240	Half 1C3R 80 10 – 240	Half GG-Niece / Nephew 208 103 – 284	Great-Great-Niece / Nephew 420 188 – 713	Great-Grandchild 887 485 – 1488		1C3R 117 25 – 238	2C3R 51 0 – 154	3C3R 27 0 – 89	4C3R 19 0 – 69	5C3R 13 0 – 50	8C 11 0 – 47	

How DNA provides genealogical evidence

Principle #2:

A shared match group is also called a genetic network. They share a Most Recent Common Ancestor (MRCA).

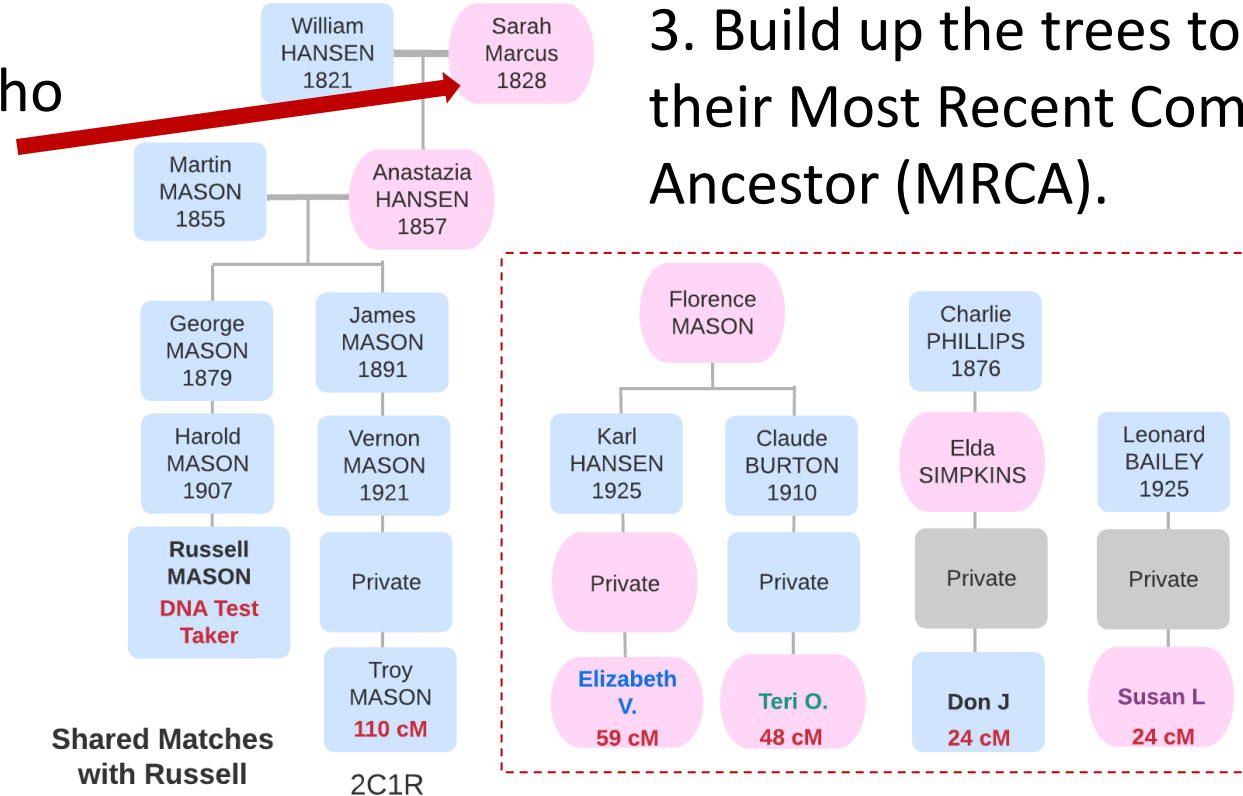
The larger the genetic network, the stronger the evidence.



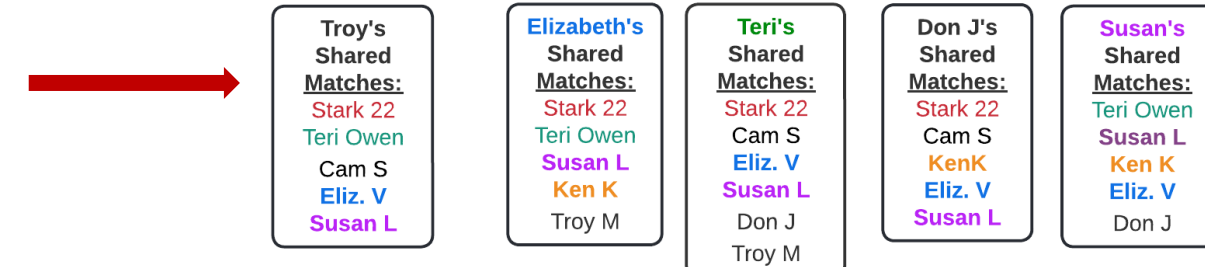
Evidence: DNA Shared Match Groups

1. Research Question: Who are Sarah's Parents?

3. Build up the trees to find their Most Recent Common Ancestor (MRCA).

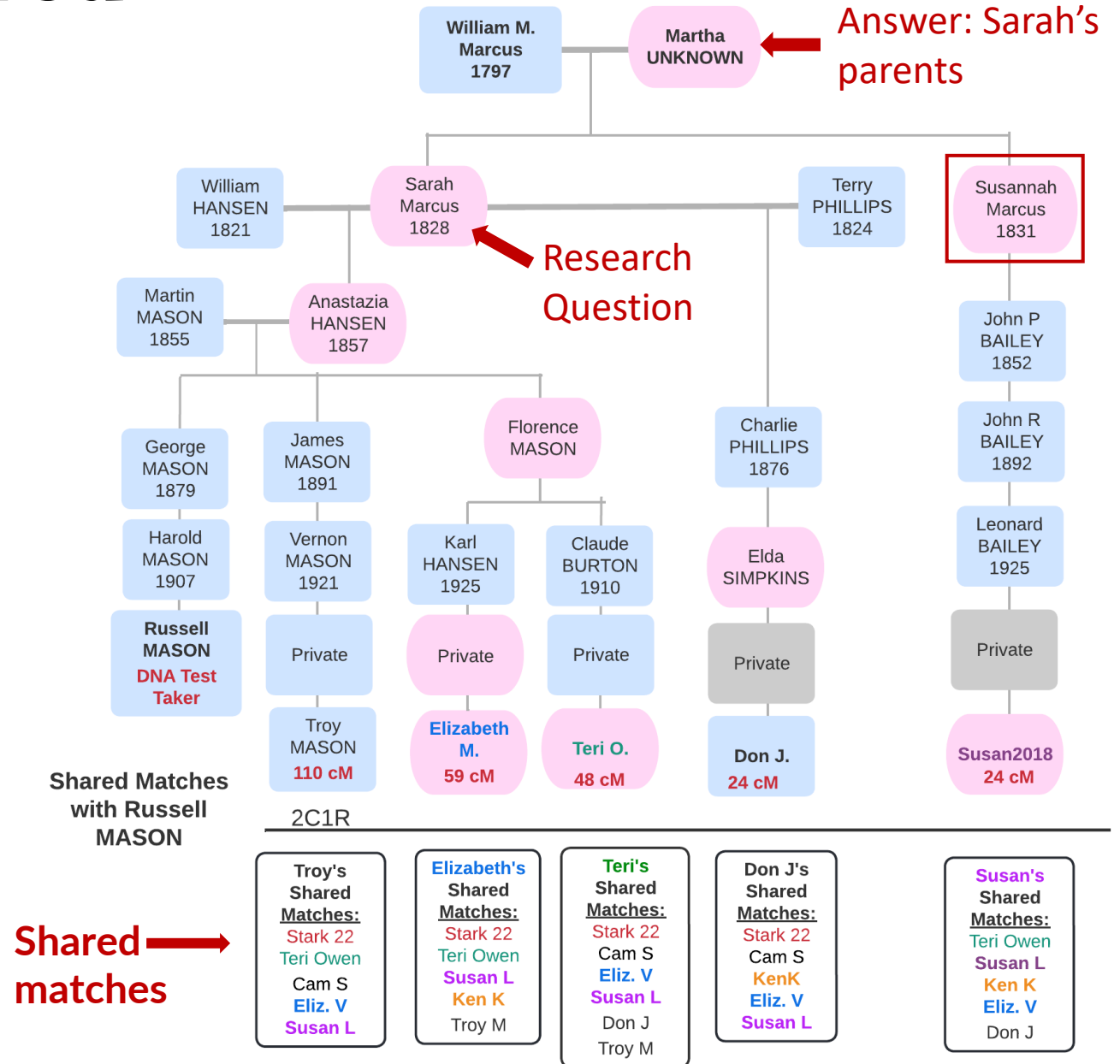


2. Create a Group of Shared DNA Matches



How to Use DNA Shared Match Groups

- All the Shared Matches descend from William and Martha Marcus.
- Documents found for Susannah Marcus named her parents.
- DNA can lead to more documents to research!



Organize DNA Matches into Shared Match Groups

Step 1

Create DNA Groups for Eight Great-Grandparents

Step 2

Create a DNA Focus Group for the Research Question

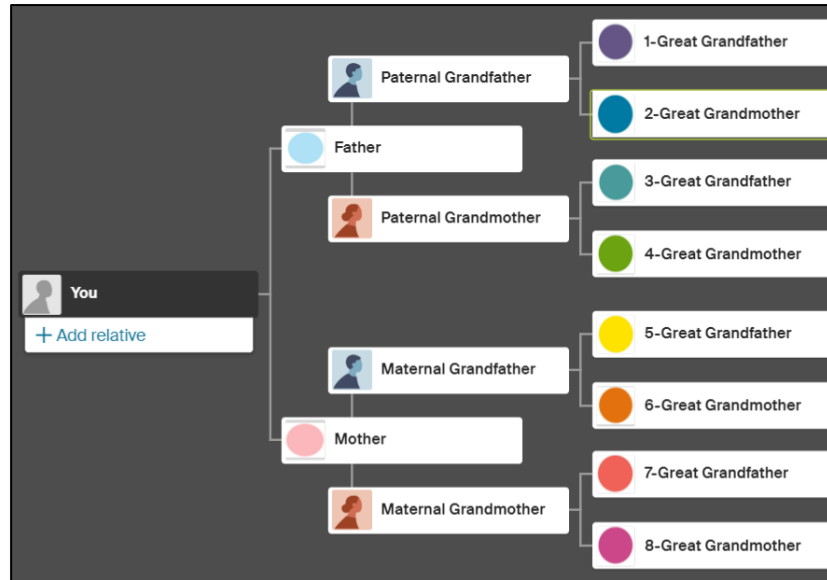
Step 3

Place “Common Ancestor” & Known Matches into DNA Groups

Step 4

Build Up the DNA Focus Group for the Research Question

Create DNA groups for your eight great-grandparents to use as reference groups.



Theron Stoddard's DNA Matches

Filter by: Unviewed Common ancestors Messaged Notes Trees Shared DNA **Groups** Search

[+ Create custom group](#)

New matches (104)

Mother's side (6)

Father's side (9)

Starred matches (0)

0 Maternal (16)

0 Paternal (15)

1 Stoddard-Telford (7)

2 Bowman-Wilson (4)

3 Coffin-Starbuck (9)

4 Hunt-Nease (5)

5 Law-Bocock (4)

6 Price-Juchau (1)

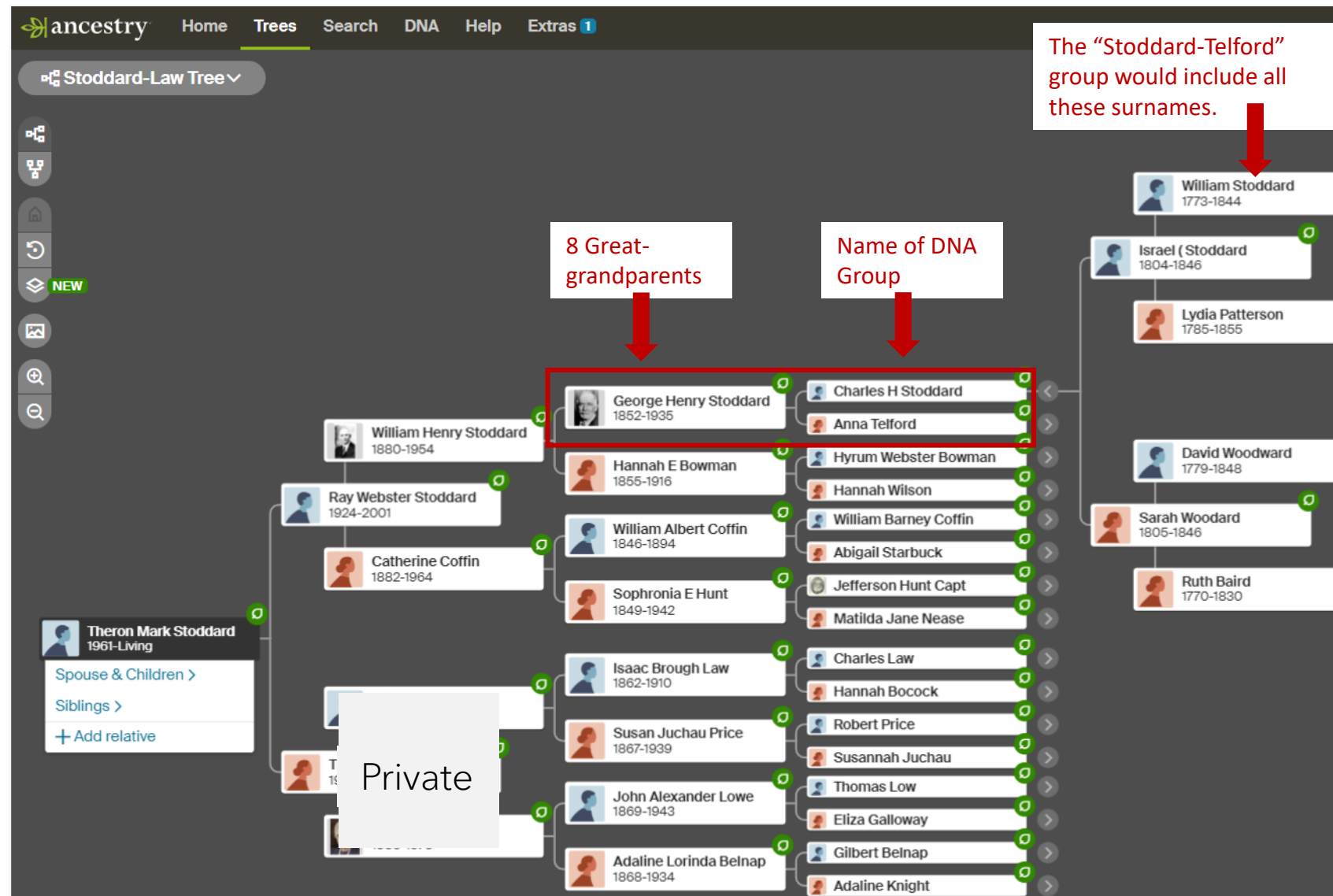
7 Lowe-Galloway (6)

8 Belnap-Knight (6)

Match	Relationship	Shared DNA	Tree
Full Sibling			
A 24	Sister	2,858 cM 51% - 58% shared DNA Both sides	Private unlinked Tree
Close Family			
C S 1	Nephew	1,807 cM 26% shared DNA Both sides	No Trees
J W	Close Family - 1st Cousin	1,570 cM 22% shared DNA	Unlinked Tree

Use the surnames of the parents of your eight great-grandparents.

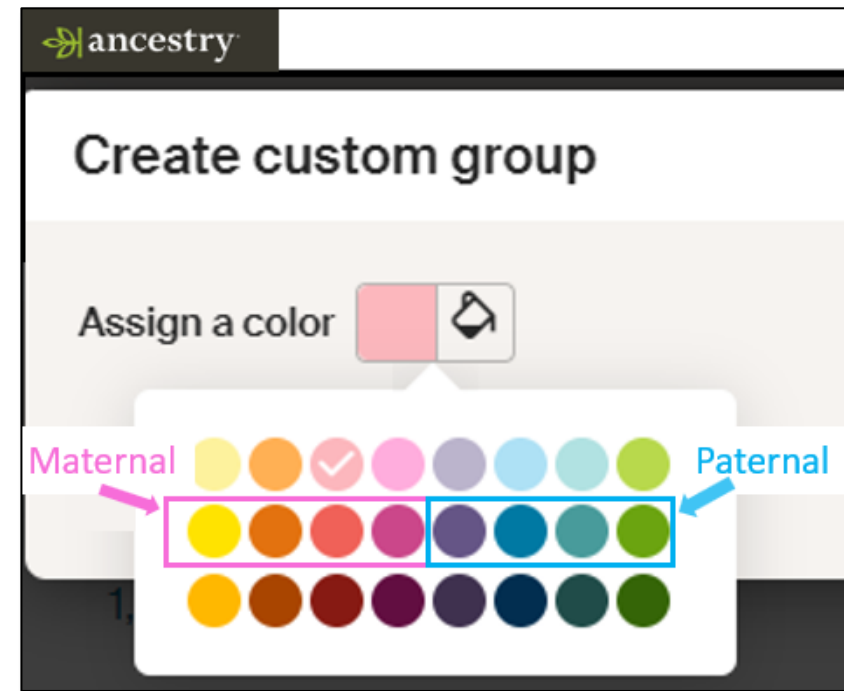
Example:
The DNA Group for George Henry Stoddard is “Stoddard-Telford” and it would include all surnames further back on this line.



Color-coding DNA Groups*

On Ancestry, the middle row has eight colors which are easy to distinguish.

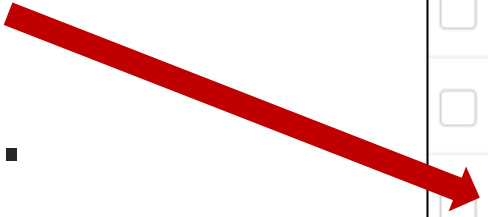
They work well for your eight great-grandparents.



Use all colors on the left half for maternal lines and the right half for paternal lines.

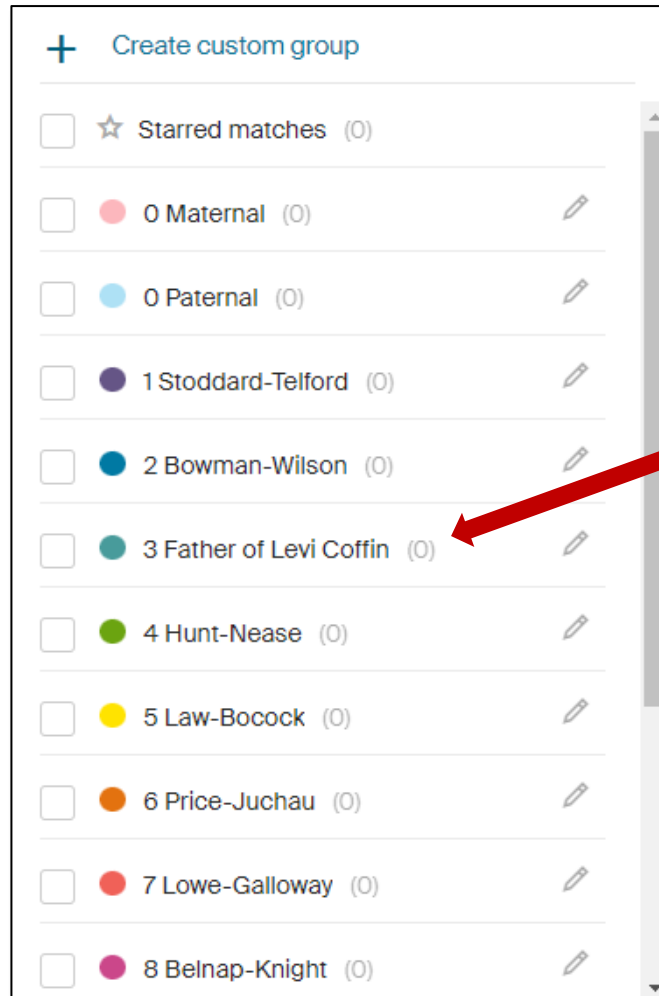
Creating DNA Groups

Number your DNA groups to force the sort order you want.



<input type="checkbox"/>	0 Maternal	
<input type="checkbox"/>	0 Paternal	
<input type="checkbox"/>	1 Stoddard-Telford	
<input type="checkbox"/>	2 Bowman-Wilson	
<input type="checkbox"/>	3 Coffin-Starbuck	
<input type="checkbox"/>	4 Hunt-Nease	
<input type="checkbox"/>	5 Law-Bocock	
<input type="checkbox"/>	6 Price-Juchau	
<input type="checkbox"/>	7 Lowe-Galloway	
<input type="checkbox"/>	8 Belnap-Knight	

Creating DNA Groups



If a great-grandparent is unknown, label the group “Father/Mother of...”

Shared Match Groups on MyHeritage

MyHeritage Home Family tree Discoveries Photos

Manage labels

Labels let you organize DNA Matches by grouping them according to common ancestors, shared DNA segments, or other genealogical information. You can then filter the matches to see those associated with a specific label.

[+ Create new label](#)







[Cancel](#) [Apply](#)

Privatized

1st cousin twice removed
Shared DNA: 1.4% (100.0 cM)

Shared DNA Matches and you share the following 107 DNA Matches

Privatize

Estimated relationship to you	Shared match
Sister	<p>38.7% (2,742.2 cM)  1.2% (82.8 cM)</p> <p><input checked="" type="checkbox"/> Privatized</p> <p> </p>
1st cousin twice removed - 4th cousin	<p>1.3% (90.3 cM)  11.5% (815.6 cM)</p> <p><input type="checkbox"/> Privatized</p> <p> </p>

Organize DNA Matches into Shared Match Groups

Step 1

Create DNA Groups for Eight Great-Grandparents

Step 2

Create a DNA Focus Group for the Research Question

Step 3

Place “Common Ancestor” & Known Matches into DNA Groups

Step 4

Build Up the DNA Focus Group for the Research Question

DNA Focus Groups

Name the DNA focus group after your research question.

The screenshot shows a list of DNA focus groups. At the top is a '+ Create custom group' link. Below it are several groups, each with a checkbox, a star icon, a colored circle, a name, and an edit icon. The groups are:

- ☆ Starred matches
- 0 Maternal
- 0 Paternal
- 1 Stoddard-Telford
- 2 Bowman-Wilson
- 3 Coffin-Starbuck
- 4 Hunt-Nease
- 5 Law-Bocock
- 6 Price-Juchau
- 7 Lowe-Galloway
- 8 Belnap-Knight
- Focus-Israel Stoddard & Sar...
- Focus-Wm Stoddard & Lydia P...

A red arrow points from the text 'Name the DNA focus group after your research question.' to the 'Focus-Israel Stoddard & Sar...' group entry.

Organize DNA Matches into Shared Match Groups

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Build Up the DNA Focus Group for the Research Question

“Common Ancestor” Matches

- Your Common Ancestor matches become your reference group of known matches.
- Group ~50 DNA matches to research more recent ancestors.
- Group 100+ DNA matches for more distant ancestors.

The screenshot shows the Ancestry DNA interface for Theron Stoddard's matches. The page is titled "Theron Stoddard's DNA Matches" and includes navigation options like Home, Trees, Search, DNA, Help, and Extras. A "Filter by:" section is visible, with "Common ancestors" selected and highlighted by a red box. Below this, a list of matches is shown, each with a profile picture, name, relationship (3rd - 4th Cousin), shared DNA (72 cM | 1%), and tree information. The "Common ancestor" label is highlighted with a red box in two entries. A vertical "Privatized" label is overlaid on the left side of the match list.

Match Name	Relationship	Shared DNA	Tree Information	Common Ancestor Label
S W	3rd - 4th Cousin	72 cM 1% shared DNA	Public linked tree 182 People	Common ancestor
ja nish	3rd - 4th Cousin	72 cM 1% shared DNA	Unlinked Tree	
R r	3rd - 4th Cousin	72 cM 1% shared DNA	Public linked tree 16 People	Common ancestor
D Summers	3rd - 4th Cousin	72 cM 1% shared DNA	No Trees	

The Common Ancestor feature requires you to attach your DNA results to your family tree

ancestry Home Trees Search **DNA** Help Extras 1 Hire an Expert Theron Stoddard EN

Activate a Test

- Your DNA Results Summary
- DNA Story
- DNA Matches
- ThruLines®
- Traits
- DNA Surveys
- Activate A Test
- Buy Another Test

Hello, Theron

matches as Theron Stoddard Linked to Theron Mark Stoddard

Now with new fitness traits and more nutrient traits
Traits await you, from how genetics influence your heart rate recovery after exercise to whether you sneeze in bright sunlight. See what else there is to learn about yourself—inside and out.
[Explore your traits](#)

DNA Story

Ethnicity Estimate

- 58% England & Northwestern Europe
- 24% Scotland
- 3 Other regions

Discover the places, history, and cultures that shaped who you are today, using just your DNA

DNA Matches

- 0 Starred matches
- 1000+ 4th cousins or closer

ThruLines®

ThruLines uses Ancestry trees to suggest how you may be related to your DNA matches through common ancestors.

Search DNA Help Extras Hire an Expert

DNA Settings for Theron Stoddard

General Information

Test Details

Name: Theron Stoddard [Change](#)

Birth year: 1961 [Change](#)

Assigned sex at birth: Male [Change](#)

Tree Link

Link to Tree [Change](#)
Link your DNA test to a family tree.

“Common Ancestor” Matches

Start with 2nd cousins and place the “Common Ancestor” matches into one of your DNA groups.

The screenshot shows the Ancestry DNA interface for Theron Stoddard's matches. The page is titled "Theron Stoddard's DNA Matches" and has a navigation bar with "Home", "Trees", "Search", "DNA", "Help", and "Extras". A "Back" button is visible in the top left. Below the title, there are tabs for "List" and "Map". A "Filter by:" section includes "Unviewed", "Common ancestors" (highlighted with a red box), "Messaged", "Notes", "Trees", "Shared DNA", and "Groups". A search and sort option is also present.

Profile	Relationship	Shared DNA	Tree Type	People	Common Ancestor	Recognize?
S W	3rd - 4th Cousin	72 cM 1% shared DNA	Public linked tree	182 People	Common ancestor (highlighted)	Yes / Learn more
ja	3rd - 4th Cousin	72 cM 1% shared DNA	Unlinked Tree			Yes / Learn more
R	3rd - 4th Cousin	72 cM 1% shared DNA	Public linked tree	16 People	Common ancestor (highlighted)	Yes / Learn more
D S	3rd - 4th Cousin	72 cM 1% shared DNA	No Trees			Yes / Learn more

A vertical grey bar labeled "Privatized" is overlaid on the left side of the match list.

“Common Ancestor” Matches

Clicking on the “Common Ancestor” label takes you to the page for that DNA match.

The screenshot shows the Ancestry DNA match page for 'You and Suzanne Stone'. The match is identified as a '4th - 6th Cousin' with '< 1% shared DNA: 53 cM across 4 segments'. The page includes navigation options like 'Add relationship', 'Message', 'Add to group', and 'Add note'. A red box highlights the 'Add to group' and 'Add note' buttons. Below the match information, there are tabs for 'Trees', 'Ethnicity', and 'Shared Matches'. The 'Trees' tab is active, showing a 'Common Ancestors' section with the text: 'How are you and Suzanne Stone related? Common Ancestors According to Ancestry member trees, these are the common ancestors that connect you and Suzanne Stone. View a common ancestor to see the relationship path that connects you. Suzanne Stone could be your 3rd cousin through: Charles Henry Stoddard (2nd great-grandfather, 1827-1907) and Anna Telford (2nd great-grandmother, 1827-1918). A red box highlights this section. Below it is a 'View more possible connections' link with a red arrow pointing to it. To the right, there is a 'Linked Tree' section showing a preview of the match's tree with '3 People' listed. A red box highlights a portion of this tree. On the far right, a 'View ThruLines' section shows a detailed family tree for 'Charles H Stoddard' (1827-1907), including his parents 'George H Stoddard' (1852-1935) and 'Charles W Stoddard' (1857-1940), and his children 'William H Stoddard' (1880-1954) and 'Hazel A Stoddard' (1891-1975). Further down are 'Ray Webster Stoddard' (1924-2001) and 'Patricia Judd' (2nd cousin 1x removed, 1891-1975). At the bottom of this tree, 'Theron Stoddard' (TS) and 'Private' (SS) are shown as matches with '53 cM | 4 segments' shared DNA.

Add notes to each DNA match

The screenshot shows the Ancestry DNA interface. At the top, the navigation bar includes 'ancestry', 'Home', 'Trees', 'Search', 'DNA', 'Help', and 'Extras 1'. The user 'Theron Stoddard' is logged in. The main content area displays a match for 'You and Jan Kelsey', which is private. The match is identified as a '2nd - 3rd Cousin' with '1% shared DNA: 100 cM across 4 segments'. There are buttons for 'Add relationship' and 'Message'. Below these, there are options for 'Add/edit groups' and 'Add note', with the 'Add note' button circled in red. A 'Notes' modal is open on the right, containing the text 'Common Ancestors: Charles H. Stoddard & Anna Telford'. The modal also shows '448 characters remaining' and 'Save' and 'Cancel' buttons. At the bottom, there are sections for 'Common Ancestors' and 'Boman Family Tree'.

ancestry Home Trees Search DNA Help Extras 1 Hire an Expert Theron Stoddard EN

< Back Tools

You and Jan Kelsey Private

2nd - 3rd Cousin
1% shared DNA: 100 cM across 4 segments

Add relationship Message

Add/edit groups **Add note**

Trees Ethnicity Shared Matches

How are you and Jan Kelsey related?

Common Ancestors

According to Ancestry member trees, these are the common ancestors that connect you and Jan Kelsey.

Boman Family Tree Expand tree

Private **Linked Tree** 598 People

This is a preview of the public tree linked to your DNA results. Surnames that appear in both your tree and this tree are marked in green.

Notes

Common Ancestors: Charles H. Stoddard & Anna Telford

448 characters remaining

Save Cancel

MyHeritage

MyHeritage identifies available common ancestors in their “Theory of Family Relativity.”

They also list common ancestral surnames you have with a DNA match.

The screenshot shows the MyHeritage interface for a user named Theron Mark Stoddard. The page displays a list of DNA matches. Two matches are highlighted with red boxes:

- Match 1:** A person with a surname ending in "nis".
 - Age: 70's
 - From: USA
 - Estimated relationships: Great-grandmother or great-granddaughter, 1st cousin once removed - 2nd cousin
 - DNA Match quality: Shared DNA: 6.2% (437.2 cM), Shared segments: 13, Largest segment: 64.1 cM
 - Buttons: Review DNA Match, View tree
 - Text below: "Appears in a family tree with 814 people that she manages"
 - Red box text: "is the 2nd cousin of Theron Mark Stoddard according to the Theory of Family Relativity™ (+2 more theories). View theory"
- Match 2:** A person with a surname ending in "iley".
 - Age: 60's
 - From: USA
 - Estimated relationships: 1st cousin once removed - 2nd cousin
 - DNA Match quality: Shared DNA: 6.1% (432.9 cM), Shared segments: 17, Largest segment: 100.6 cM
 - Buttons: Review DNA Match, View tree
 - Text below: "Appears in a family tree with 74 people that she manages"
 - Red box text: "Ancestral surnames common to Theron Mark Stoddard and [redacted] include Stoddard."

Organize DNA Matches into Shared Match Groups

Step 1

Create DNA Groups for Eight Great-Grandparents

Step 2

Create a DNA Focus Group for the Research Question

Step 3

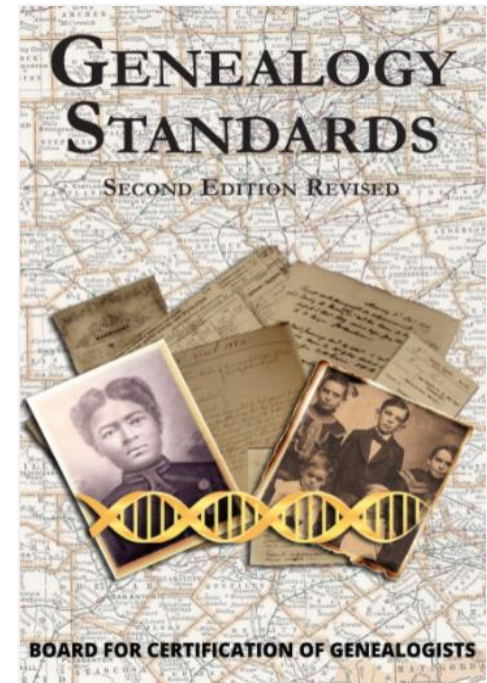
Place “Common Ancestor” & Known Matches into DNA Groups

Step 4

Build Up the DNA Focus Group for the Research Question

Genealogy Standards for DNA Evidence

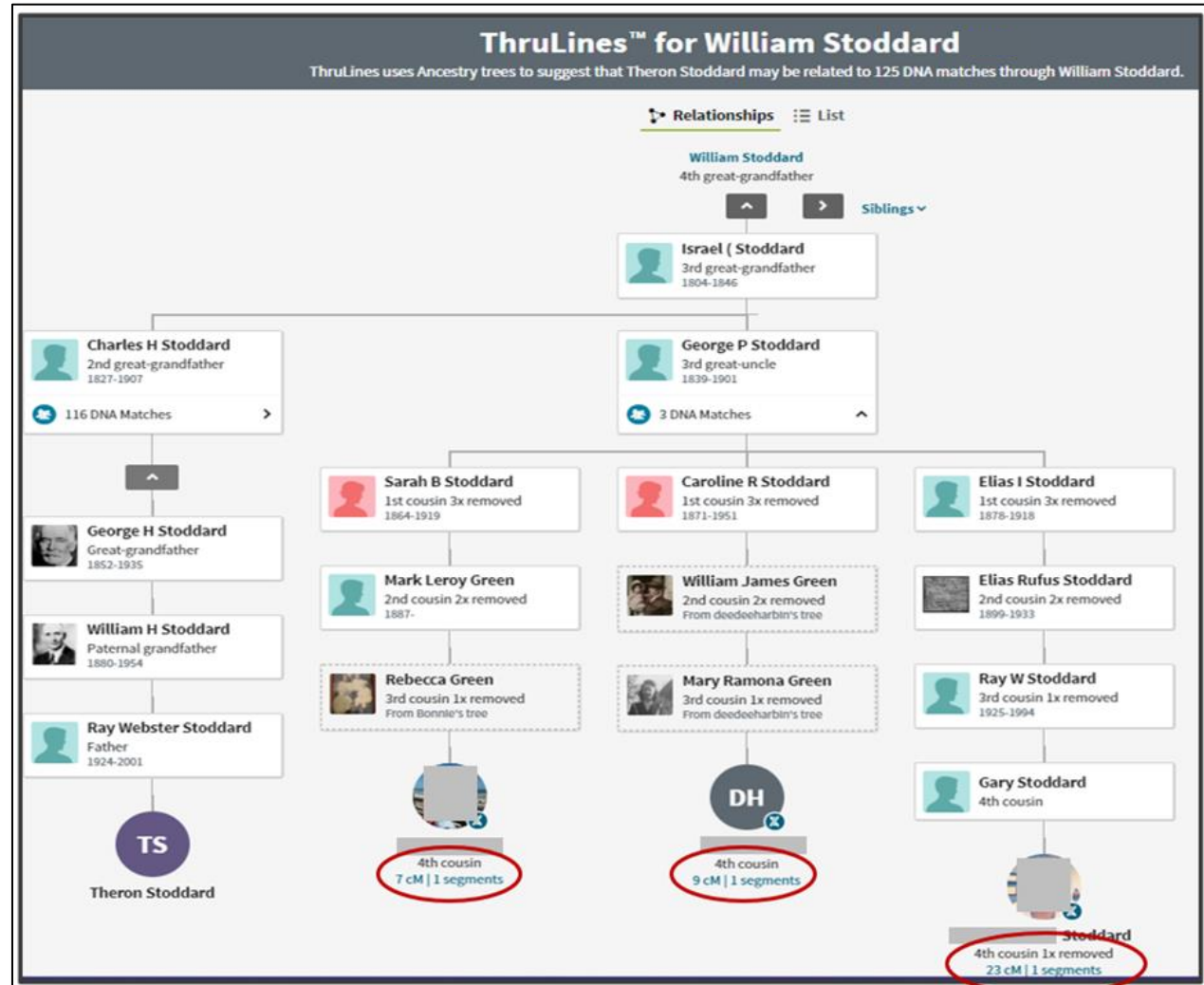
1. Accuracy, completeness, and depth of each tree
2. The possibility of more than one common ancestor for each pair of DNA test takers
3. Reported and typical amounts of shared DNA
4. Thoroughness of relevant documentary research.



The Danger of Small Segments

The further back in time you go, the smaller the DNA segments get.

Segments under 10-15 cM may be false matches.



Shared cM Tool

Smaller segments can be problematic because there are many possible relationships.

Blaine T. Bettinger
www.thegeneticgenealogist.com
 More about this project
 CC 4.0 Attribution License
 Interactive version v4 by Jonny Perl at DNA Painter
 Click here to contribute data to the shared cM project
 Last updated 28th March 2020

Enter the total number of cM for your match here:
 reset

Relationship Average Range (low to high; 99th percentile)

or enter %

Then any relationships that fit will stand out below
 Click here for a shareable link to the cM amount above

Important

- For relationships more distant than Half 2C, the averages were determined only for relationships in which DNA was shared.
- The more distant a relationship, the more likely it is that you won't share DNA at all (read more)
- These statistics do not cater for pedigree collapse or endogamy

Other versions

- Beta with updated probabilities With editable boxes
- Shared cM 3.0 (2017) version

Most distant common ancestors
 Assuming no pedigree collapse or endogamy, and that you're related in just one way, the furthest back you might need to go to find common ancestors for a match of 40cM is 8th-Great-Grandparent level or generation 11 on your pedigree chart.
 The connection could be closer. However, it could date much further back to beyond the genealogical timeframe.

Relationship probabilities (based on stats from The DNA Geek)
 New: View these relationships in a tree

48%	5C3R † 6C 6C1R 5C 6C2R 4C1R 5C1R 7C Half 3C2R 4C2R 5C2R 7C1R 3C3R 4C3R 8C or more distant
19%	Half 3C 3C1R Half 2C2R 2C3R
19%	4C Half 3C1R 3C2R
10%	3C Half 2C1R 2C2R Half 1C3R
4%	Half 2C 2C1R Half 1C2R 1C3R
~ 0%	** 1C2R

** this set of relationships is just within the threshold for 40cM, but has a zero probability in thednaageek's table of probabilities

† this relationship has a positive probability for 40cM in thednaageek's table of probabilities, but falls outside the bounds of the recorded cM range (99th percentile)

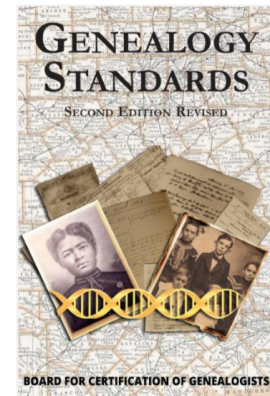
New Click on any relationship to view a histogram
 Read more about cousin relationships

							Great-Great-Grandparent	GGG Aunt / Uncle		
							Great-Great-Grandparent	GGG Aunt / Uncle		
Half GG-Aunt / Uncle 208 103 – 284							Great-Great-Aunt / Uncle 420 188 – 713	1C3R 117 25 – 238	2C3R 51 0 – 154	Other Relationships
							Great-Aunt / Uncle 850 330 – 1487	1C2R 221 33 – 471	2C2R 71 0 – 244	3C2R 38 0 – 188
Half 1C2R 125 16 – 289	Half Great-Aunt / Uncle 431 184 – 868									6C 18 0 – 71
Half 2C1R 68 0 – 190	Half 1C1R 224 62 – 489	Half Aunt / Uncle 871 492 – 1315					1C1R 433 102 – 980	2C1R 122 14 – 353	3C1R 48 0 – 192	4C1R 28 0 – 128
										6C1R 15 0 – 58
Half 3C 48 0 – 188	Half 2C 120 10 – 325	Half 1C 449 156 – 979	Half Sibling 1759 1180 – 2438	Sibling 2813 1813 – 3488	SELF	1C 866 398 – 1397	2C 229 41 – 592	3C 73 0 – 234	4C 35 0 – 139	5C 25 0 – 117
										6C2R 13 0 – 45
Half 3C1R 37 0 – 139	Half 2C1R 66 0 – 190	Half 1C1R 224 62 – 489	Half Niece / Nephew 871 492 – 1315	Niece / Nephew 1740 1201 – 2282	Child 3487 2378 – 3720	1C1R 433 102 – 980	2C1R 122 14 – 353	3C1R 48 0 – 192	4C1R 28 0 – 128	5C1R 21 0 – 80
										7C 14 0 – 57
Half 3C2R	Half 2C2R	Half 1C2R	Half Great-Niece /	Great-Niece /	Grandchild	1C2R	2C2R	3C2R	4C2R	5C2R

“Common Ancestor” Matches

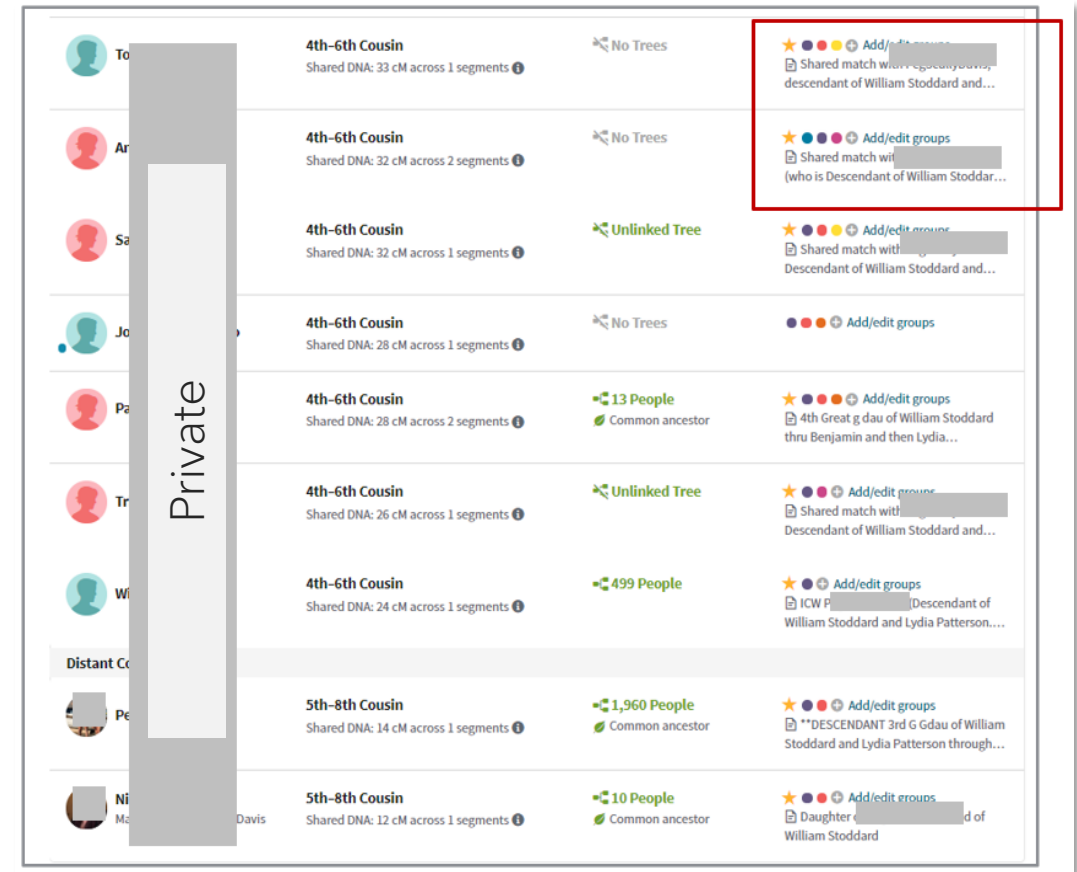
The screenshot shows a match page for 'You and Jay Stodds'. At the top, it indicates a relationship of '4th - 6th Cousin' with '<1% shared DNA: 45 cM across 4 segments'. Below this are buttons for 'Add relationship' and 'Message', and a link to 'Add/edit groups'. A breadcrumb trail shows 'Descendant of Charles Stoddard & ...'. The main content area is divided into two columns. The left column, titled 'How are you and Jay Stodds related?', lists 'Common Ancestors' and shows two individuals: Charles Henry Stoddard (2nd great-grandfather, 1827-1907) and Anna Telford (2nd great-grandmother, 1827-1918). A red box highlights a link 'View more possible connections'. The right column, titled 'Private's Linked Tree', shows a preview of a family tree with 1,284 people. A red arrow points to a specific path in the tree, highlighting several names: James Halley Stocks (1877-1941), Lettie Cornelia Hend... (1878-1958), John Rudolph Gyllen... (1881-1932), Laura Elvina Christe... (1884-1962), John William Boman (1861-1936), Fannie Elizabeth Bro... (1866-1942), Brigham Andrus Hen... (1857-1925), Mary Jane Andrus, Charles Henry Stoddard (1862-1930), and Anna Telford. Other names in the tree include Moroni Stocks, Sarah Heward, William Dorris Hendricks, Almira Davenport, Nils Nilsson Gotrik Gyll..., Ane Cecilie Andersen, Christen Anton Christe..., Mette Marie Mortensen, Hannah Turner Wilson, Ariah Coats Brower, and Hannah Thomson.

You may share more than one common ancestor with a DNA match, even if the match's tree does not show it.



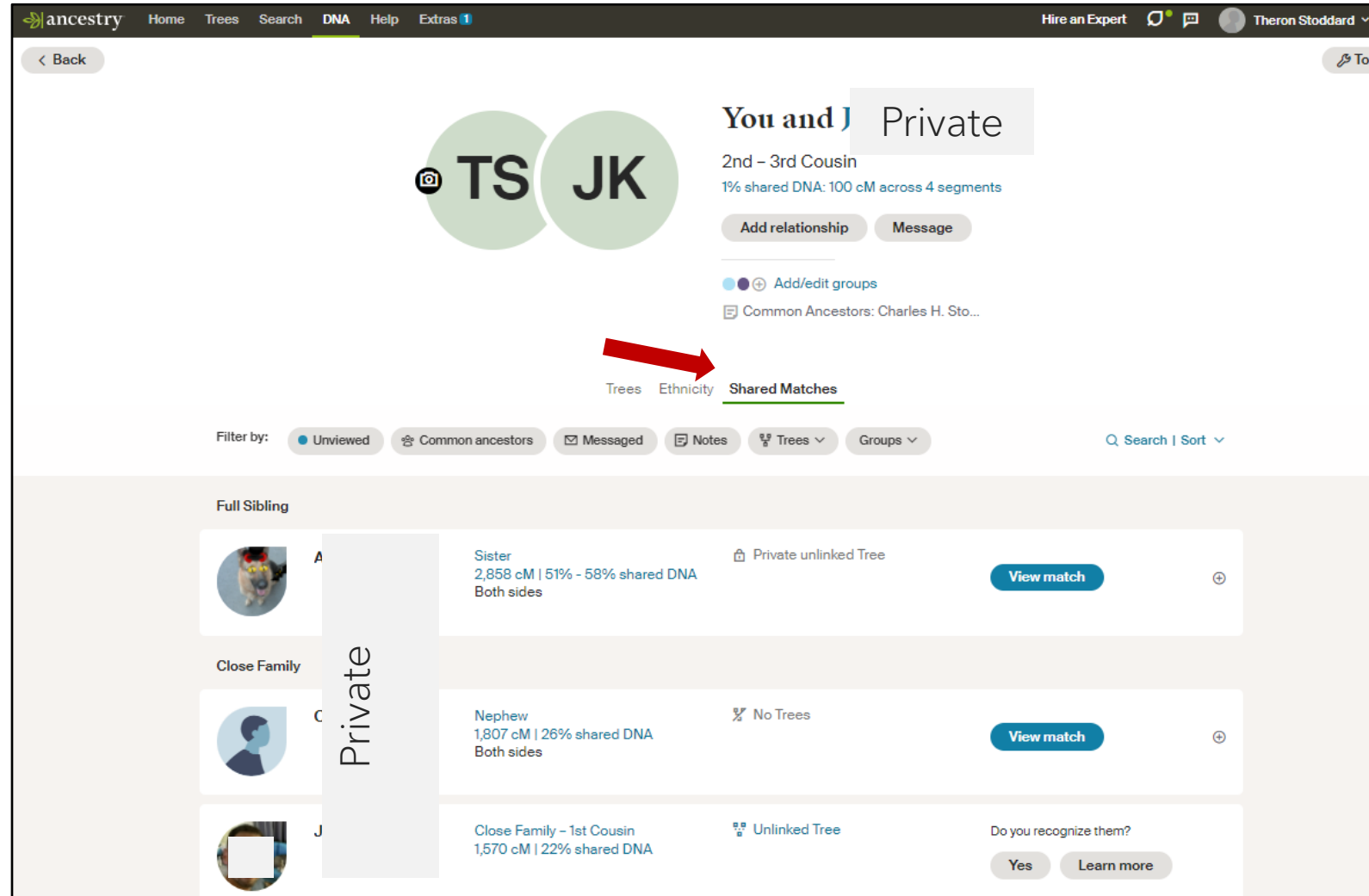
Build Up the DNA Focus Group

1. Determine your research question.
2. Identify your closest matches to your research question, meaning the matches with highest cM.
3. Add his/her Shared Matches to your DNA Focus Group.
4. Continue with other close matches.



Shared Match List

Click on the Shared Match tab.



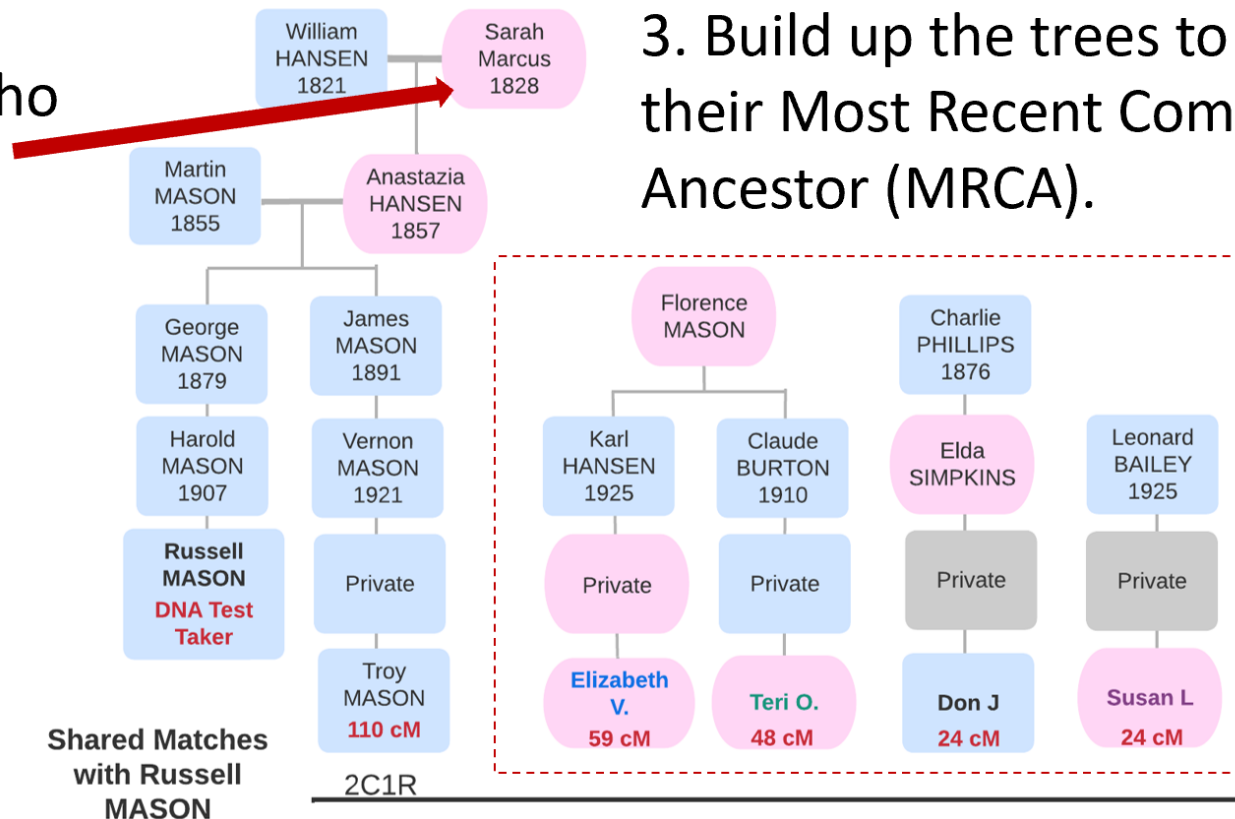
The screenshot shows the Ancestry DNA interface for a shared match. At the top, the navigation bar includes 'ancestry', 'Home', 'Trees', 'Search', 'DNA', 'Help', and 'Extras'. The user's name 'Theron Stoddard' is visible in the top right. The main header shows 'You and J Private' with a relationship of '2nd - 3rd Cousin' and '1% shared DNA: 100 cM across 4 segments'. Below this are buttons for 'Add relationship' and 'Message'. A red arrow points to the 'Shared Matches' tab, which is currently selected. Below the tabs are filter options: 'Unviewed', 'Common ancestors', 'Messaged', 'Notes', 'Trees', and 'Groups'. The match list is divided into categories: 'Full Sibling', 'Close Family', and 'Unlinked Tree'. The first match is a 'Sister' with 2,858 cM (51% - 58% shared DNA) and a 'Private unlinked Tree'. The second match is a 'Nephew' with 1,807 cM (26% shared DNA) and 'No Trees'. The third match is a 'Close Family - 1st Cousin' with 1,570 cM (22% shared DNA) and an 'Unlinked Tree'. A vertical 'Private' watermark is overlaid on the match list.

Relationship	Shared DNA	Tree Status	Action
Full Sibling			
Sister	2,858 cM 51% - 58% shared DNA Both sides	Private unlinked Tree	View match
Close Family			
Nephew	1,807 cM 26% shared DNA Both sides	No Trees	View match
Unlinked Tree			
Close Family - 1st Cousin	1,570 cM 22% shared DNA	Unlinked Tree	Do you recognize them? Yes Learn more

Build up a DNA Focus Group Using Shared Matches

1. Research Question: Who are Sarah's Parents?

3. Build up the trees to find their Most Recent Common Ancestor (MRCA).



2. Create a Group of Shared DNA Matches

Shared Matches with Russell MASON

- Troy's Shared Matches:**
 Stark 22
 Teri Owen
 Cam S
 Eliz. V
 Susan L

- Elizabeth's Shared Matches:**
 Stark 22
 Teri Owen
 Susan L
 Ken K
 Troy M

- Teri's Shared Matches:**
 Stark 22
 Cam S
 Eliz. V
 Susan L
 Don J
 Troy M

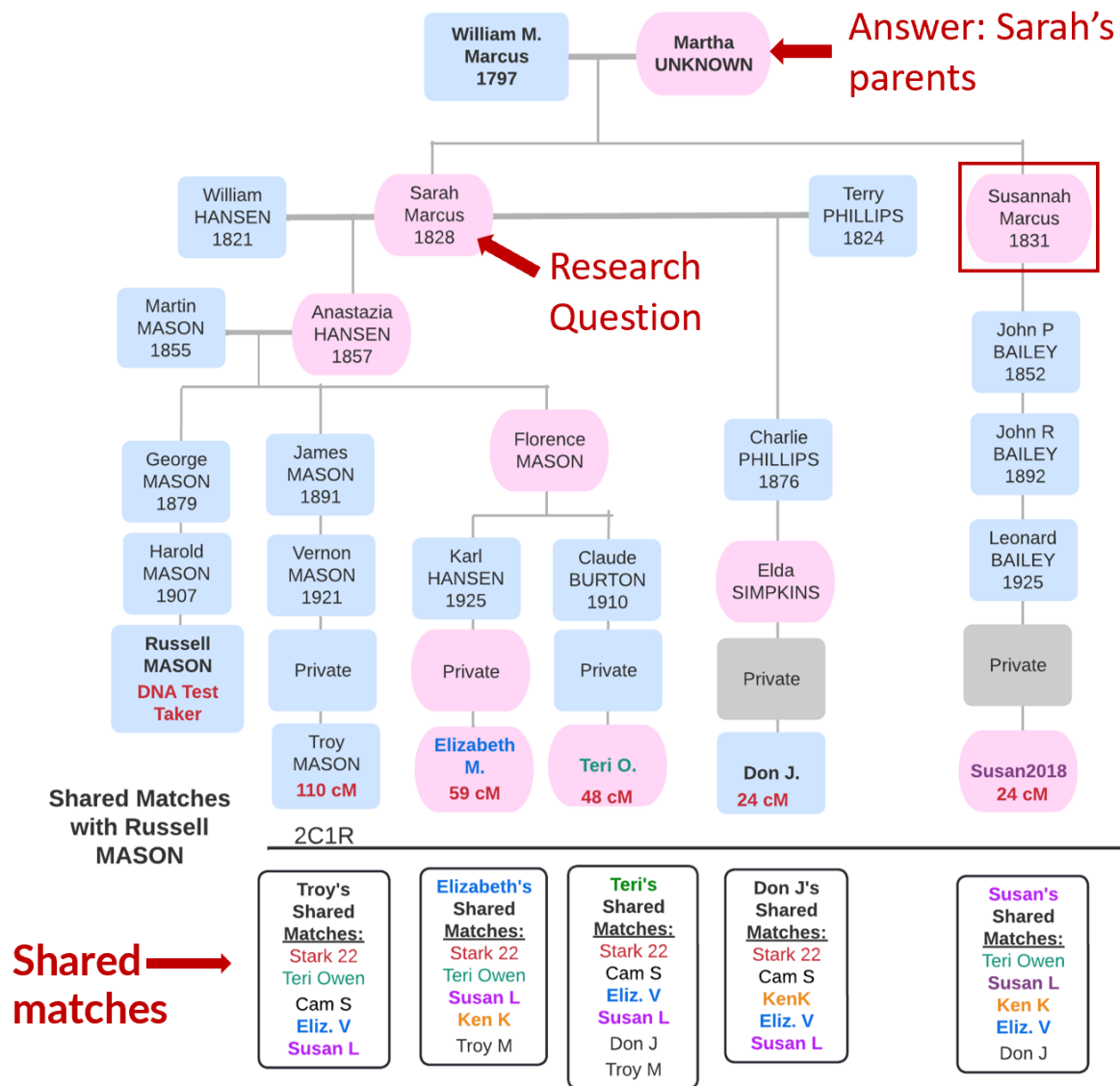
- Don J's Shared Matches:**
 Stark 22
 Cam S
 Ken K
 Eliz. V
 Susan L

- Susan's Shared Matches:**
 Teri Owen
 Susan L
 Ken K
 Eliz. V
 Don J

Build up a DNA Focus Group Using Shared Matches

This group of Shared Matches all tie back to the same MRCA.

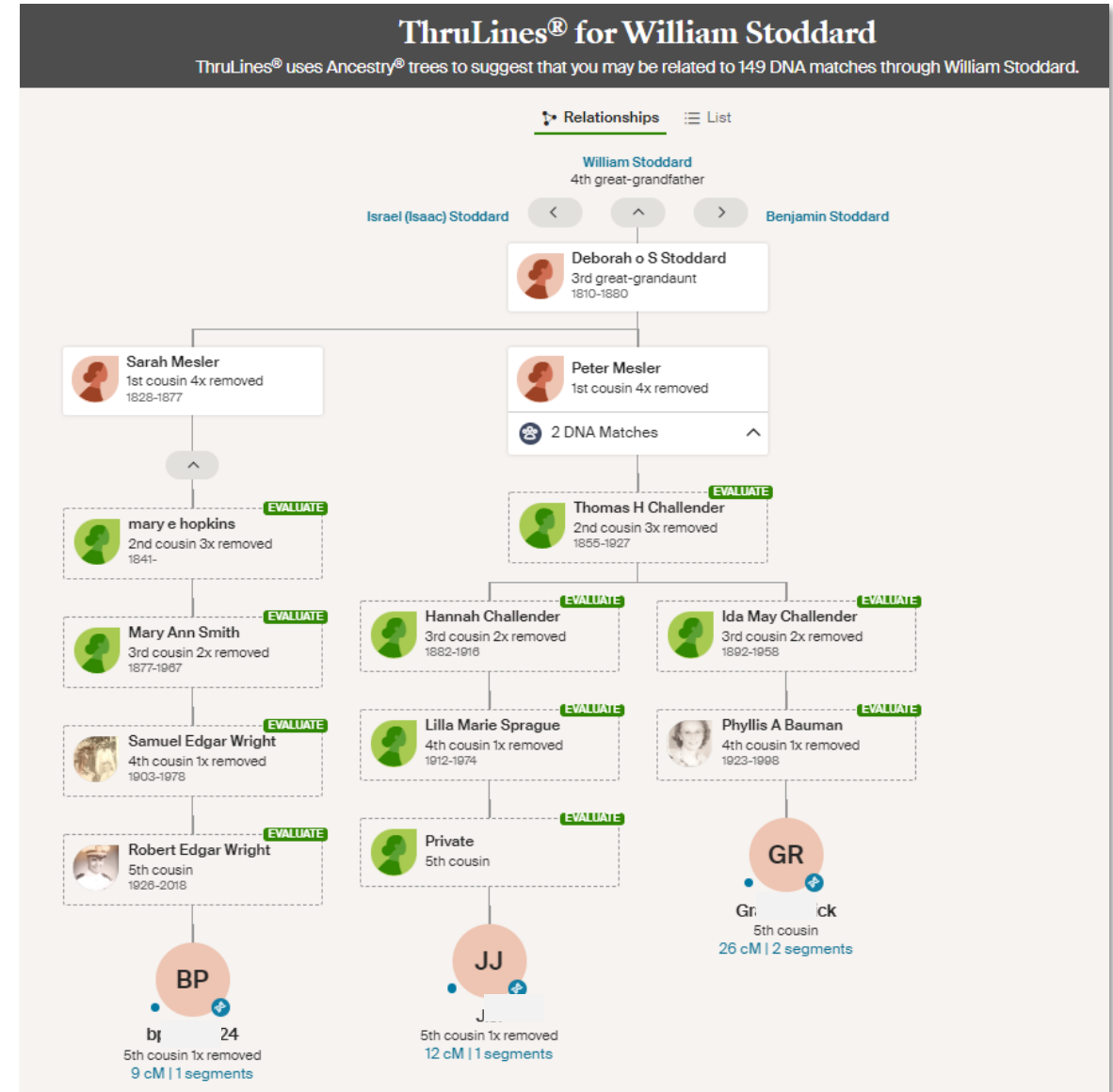
Triangulated segments provide even stronger evidence.



Build Quick Trees For Your DNA Matches

1. Use Ancestry's ThruLines or MyHeritage's "Theory of Family Relativity" to quickly build trees for your DNA matches.

Remember they both suggest possible relationships – verify everything!



Build Quick Trees For Your DNA Matches

Use FamilySearch Family Tree, Ancestry's Public Member Trees, etc. to build quick trees for your DNA matches.

Verify the trees after finding a MRCA.

The screenshot displays a list of DNA matches with the following columns: profile picture, name, relationship, shared DNA, tree information, and a 'Do you recognize them?' section with 'Yes' and 'Learn more' buttons. A vertical grey bar labeled 'Privatized' is overlaid on the left side of the match list. A red box highlights the 'Unlinked Tree' option for the match with 109 cM shared DNA.

Profile	Name	Relationship	Shared DNA	Tree Information	Do you recognize them?
	fr... 5	2nd - 3rd Cousin	110 cM 2% shared DNA	Public linked tree 7 People Common ancestor	Yes Learn more
	k... 3	2nd - 3rd Cousin	109 cM 2% shared DNA	Public linked tree 3,408 People Common ancestor	Yes Learn more
	K... M... k...	2nd - 3rd Cousin	109 cM 2% shared DNA	Unlinked Tree	Yes Learn more
	C... C...	2nd - 3rd Cousin	109 cM 2% shared DNA	Public linked tree 18 People	Yes Learn more
	A... C... en	2nd - 3rd Cousin	108 cM 2% shared DNA	Unlinked Tree	Yes Learn more
	S... d... oddar	2nd - 3rd Cousin	108 cM 2% shared DNA	Public linked tree 219 People Common ancestor	Yes Learn more

Common Ancestor: Gilbert Belnap & Adaline Knight.

Build Trees For Your DNA Matches

Search your DNA matches for the surname you are looking for, especially if it is not a common surname.

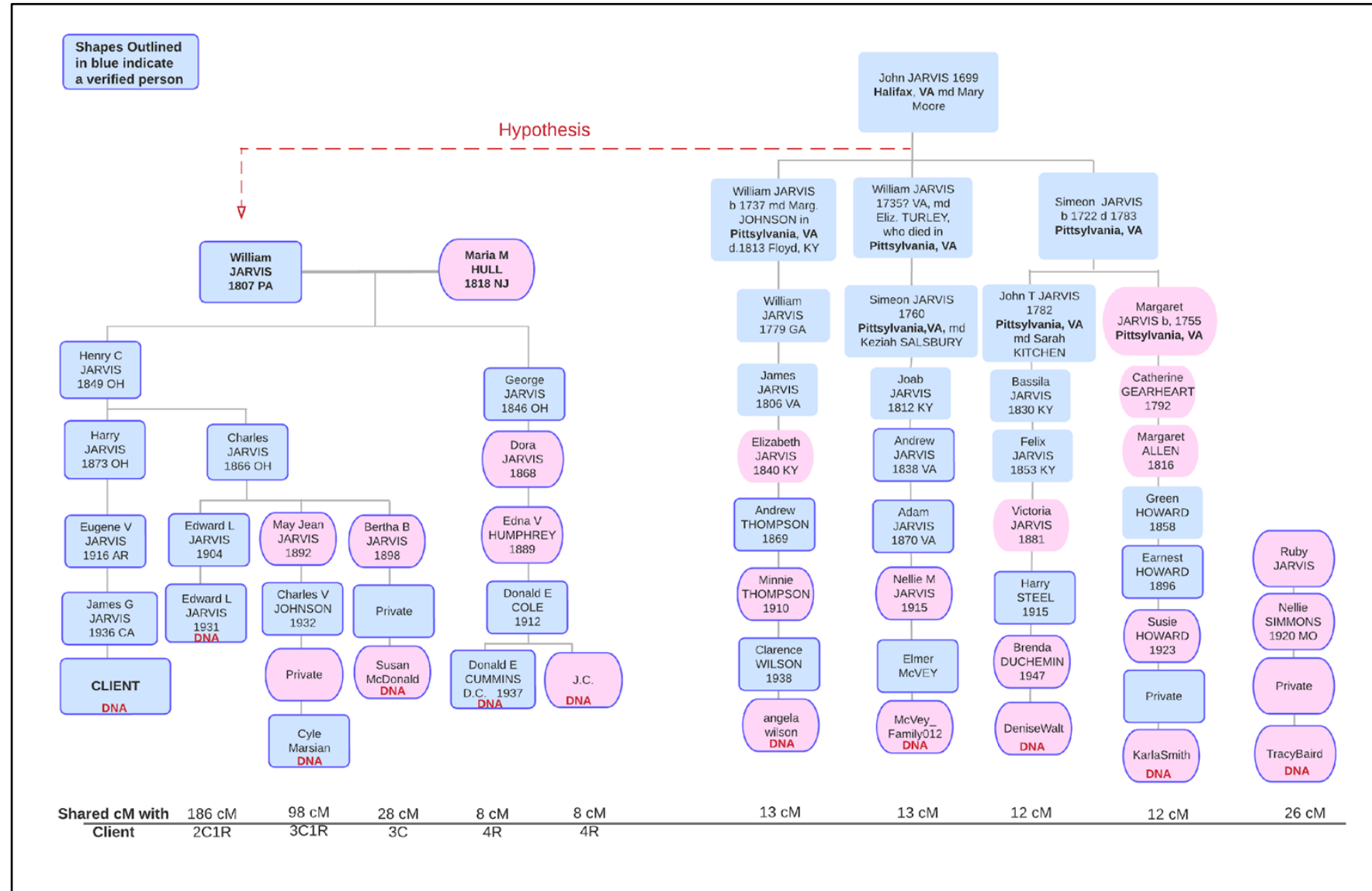
The screenshot shows the Ancestry.com interface for 'Theron Stoddard's DNA Matches'. The navigation bar includes 'ancestry', 'Home', 'Trees', 'Search', 'DNA', 'Help', and 'Extras'. The user's name 'Theron Stoddard' is visible in the top right. Below the navigation, there are tabs for 'List' and 'Map'. A 'Filter by' section includes buttons for 'Unviewed', 'Common ancestors', 'Messaged', 'Notes', 'Trees', 'Shared DNA', and 'Groups'. A search bar is located on the right with a magnifying glass icon and the text 'Search | Sort'. Below the filters, there are three search criteria: 'Match name' (with a placeholder 'First name, last name or username'), 'Surname in matches' trees' (with 'Hultz' entered and a checked box for 'Include similar surnames'), and 'Birth location in matches' trees' (with a placeholder 'Birth location in matches' trees'). A blue 'Search' button and a grey 'Cancel' button are on the right. The results section shows two matches, both identified as '4th - 6th Cousin' with '27 cM | < 1% shared DNA'. The first match is 't Hulse III' with a 'Public linked tree' of '143 People'. The second match is 'c 11' with a 'Public linked tree' of '134 People' and a 'Common ancestor' icon. Both matches have 'Do you recognize them?' buttons with 'Yes' and 'Learn more' options.

Identifying the Common Ancestor

Watch for unique surnames or locations.

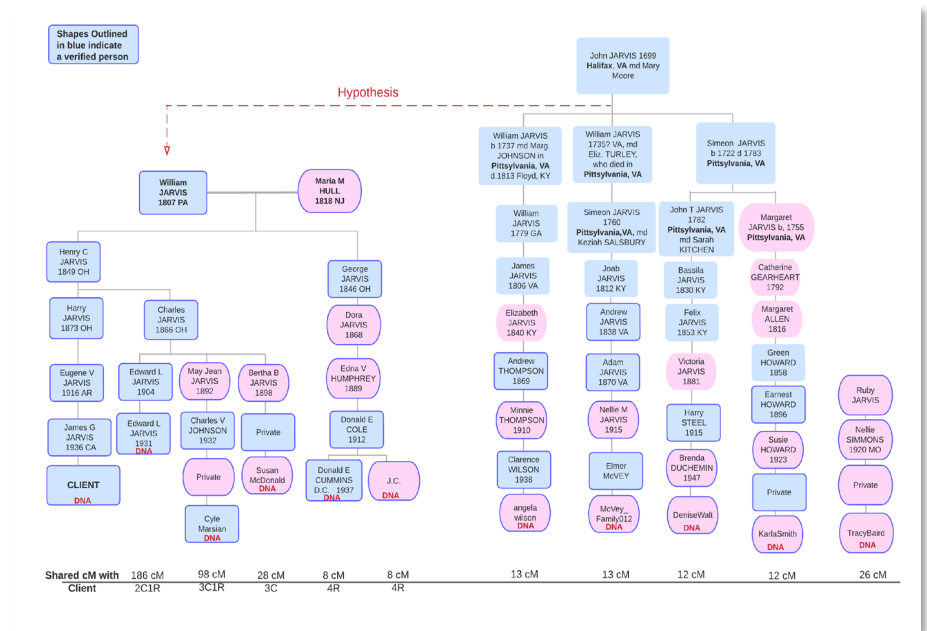
DNA leads to more records to search.

Build from the MRCA down.



Summary: Why DNA provides genealogical evidence

1. The more cM a person shares with a match, the closer the relationship is.
2. If you have multiple DNA matches in a shared match group, you can identify the Most Recent Common Ancestor (MRCA) you all descend from.





Questions?

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ConnectTheBranch.com