Survey of Genetic Genealogy

From Ethnicity to Visual Phasing

Full Disclosure

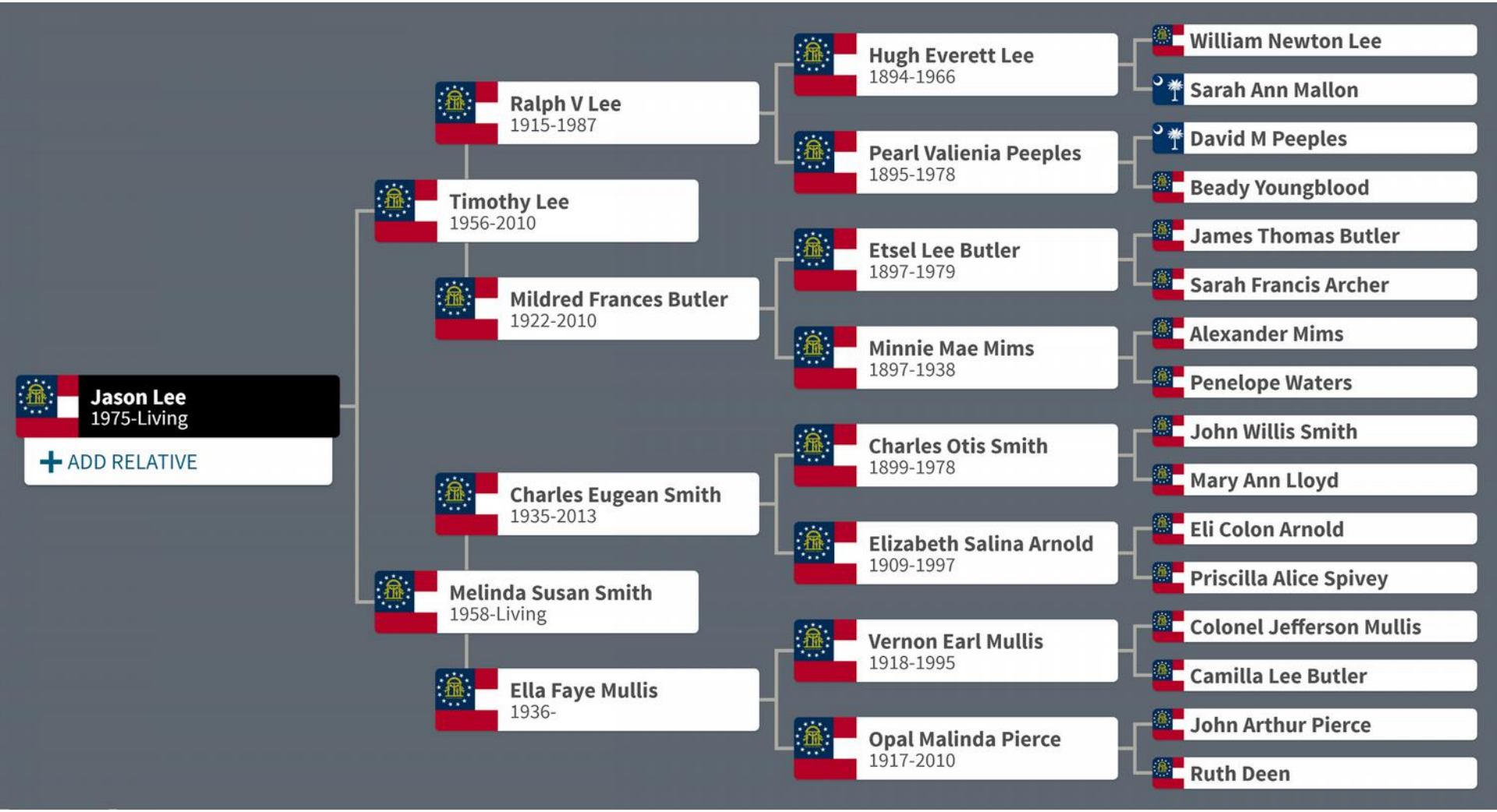
I have never had any financial, professional or personal ties with any of the DNA testing/matching companies or their employees.

- 23andMe
- AncestryDNA
- FTDNA
- GEDmatch
- MyHeritage DNA

Use these services!

Allow me to introduce myself...

...with my tree and my DNA.


Jason Lee
1975-Living
+ ADD RELATIVE
Ralph V Lee
1915-1987
Timothy Lee
1956-2010
Mildred Frances Butler
1922-2010
Charles Eugean Smith
1935-2013
Melinda Susan Smith
1958-Living
Ella Faye Mullis
1936-
Hugh Everett Lee
1894-1966
Pearl Valienia Peeples
1895-1978
Etsel Lee Butler
1897-1979
Minnie Mae Mims
1897-1938
Charles Otis Smith
1899-1978
Elizabeth Salina Arnold
1909-1997
Vernon Earl Mullis
1918-1995
Opal Malinda Pierce
1917-2010
William Newton Lee
Sarah Ann Mallon
David M Peeples
Beady Youngblood
James Thomas Butler
Sarah Francis Archer
Alexander Mims
Penelope Waters
John Willis Smith
Mary Ann Lloyd
Eli Colon Arnold
Priscilla Alice Spivey
Colonel Jefferson Mullis
Camilla Lee Butler
John Arthur Pierce
Ruth Deen

Mysterious & Interesting South Carolina Ancestry

Sarah Ann Mallon: ???

David M. Peeples: Hampton County ???

John W. Lloyd: Darlington, SC

Thomas Osgood: Essex, MA → Dorchester, SC

(1680-1736)

The Witches of East... Cooper?

BY SUZANNAH SMITH MILES
SPECIAL TO THE MOULTRIE NEWS

Suzannah Smith Miles

Going north on Highway 17, if you turn left on Fifteen Mile Landing Road at the SeeWee Restaurant, you'll find a marker indicating the spot where the Wappetaw Independent Congregational Church once stood. It reads: "This church was planted here in 1696 by a colony of 52 who came from New England and landed at Seawee Bay."

These earliest East Cooper settlers have long been a question mark to area historians. Records are scant. After sailing from Ipswich, Mass., in October 1696, they were shipwrecked on the North Carolina coast, rescued by a vessel sent by South Carolina's governor, John Archdale, and given land on the upper Wando River in the area the Sewee Indians called Wappetaw. Through early deeds, church records and wills, the late historian Petrona Royall McIver devised a list of their possible names. After that, the track largely went cold.

nation and at least five died in jail. Even elderly John Alden, Jr., the son of the Mayflower's famous John and Priscilla, was accused. The trials only came to a halt when accusations were being considered against the governor's wife, whose "crime" had been giving birth to a severely deformed child. Enough finally became enough.

The aftermath left Massachusetts in a state of rancor

Savage's Genealogical Register of early New England families. Savage states that Aaron and William Way, members of the Dorchester settlement on the Ashley River, were "active in the protest against the cruel hypochondria of the Rev. Samuel Parris," and thus moved to South Carolina.

Of those who settled at Wappetaw, one of the most familiar names is Whilden. Elias Whilden, Jr. (1799-

proved of Burroughs' more tolerant religious views, particularly the Reverend Parris and the Reverend Cotton Mather, the judge at the trials. Mather even suspected Burroughs of being (gasp!) a Baptist.

Accused by Ann Putnam and other girls who claimed Burroughs' tormented them in dreams and visions; Burroughs was arrested at his home in Maine and brought to Salem for trial.

been another. Murrell had also been a witness in the Burroughs case as well as the trial of one Sarah Murrell, likely a relation. Sarah was subsequently jailed in Boston where she spent 35 weeks chained in a dark, dank cell. She was 14-years-old.

Other Wappetaw settlers had witch trial connections. John Severance became unwittingly embroiled in the trial of his neighbor. John Hendrick's first cousins, John and Robert Pike, put their own lives on the line when they testified on behalf of the well-loved Mary Bradbury when she was tried as a witch. They were joined by members of the Murrell and Severance families and others who signed a petition for Bradbury's release. This was a brave but dangerous thing to do for many who had voiced opposition to the trials had ended up being accused, themselves.

The settlers at Dorchester on the Ashley River had similar experiences. Thomas Osgood, his wife, Susannah Lord and his sister, Lydia, not only signed the petition on behalf of Mary Bradbury,

erant laws toward religion in the world. No one was going to be put into stocks or branded for their religious beliefs in South Carolina. Or executed as a witch.

Some familiar, now traditional Lowcountry names may surprise. Boston silversmith Solomon Legaré came with the Wappetaw group. John Simmons and his wife, Anne, progenitors of the "two-M" Simmons family, came with the Dorchester group. Daniel Island settler Benjamin Singletary and his wife, Mary, likely arrived with the Wappetaw group. Today's Whitehall area on Highway 17 North comes from Wappetaw settlers George and William White.

Although the Wappetaw settlers never laid out a town like that at Dorchester, most became substantial planters and their landholdings ranged the length of the Wando River, encompassing areas we know today as Wakendaw, I'on, Brickyard, Palmetto Islands County Park, Dunes West and Park West. Members of the Murrell family eventually settled along the coast near Georgetown, remembered today by

My DNA Testing

Started with 23andMe for ethnicity...

Jason, explore your ancestry through your DNA.

Overview | All Reports

Ancestry Composition

Your DNA tells the story of who you are and how you're connected to populations around the world.

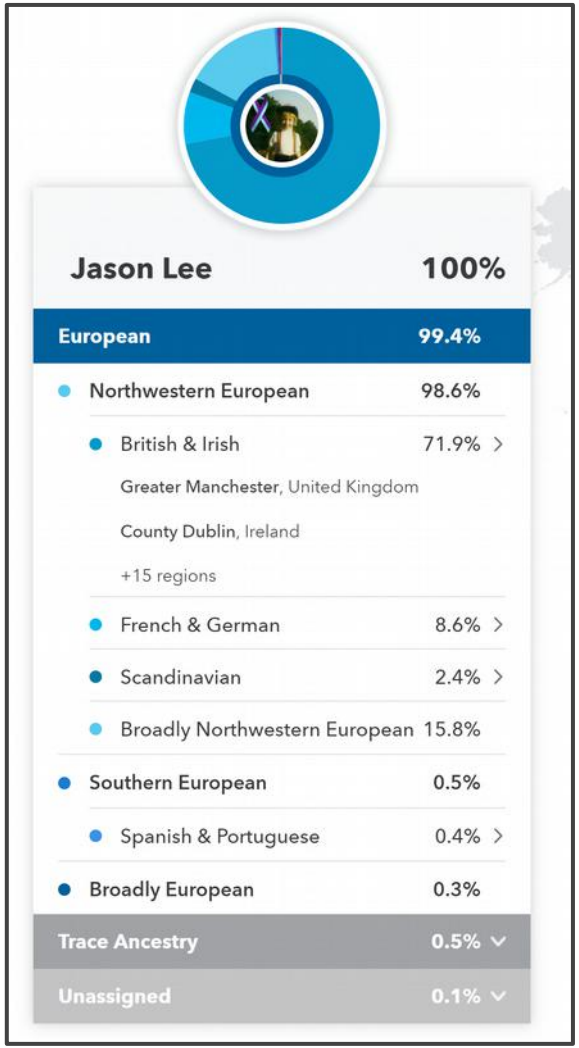
View your ancestry composition

YOUR ANCESTRY IN DETAIL

71.9%
British & Irish
View report

8.6%
French & German
View report

2.4%
Scandinavian
View report


Jason Lee
100%
European
99.4%
Northwestern European
98.6%
British & Irish
71.9%
Greater Manchester, United Kingdom
County Dublin, Ireland
+15 regions
French & German
8.6%
Scandinavian
2.4%
Broadly Northwestern European
15.8%
Southern European
0.5%
Spanish & Portuguese
0.4%
Broadly European
0.3%
Trace Ancestry
0.5%
Unassigned
0.1%

In the last 200 years, your ancestors may have lived in the following locations.

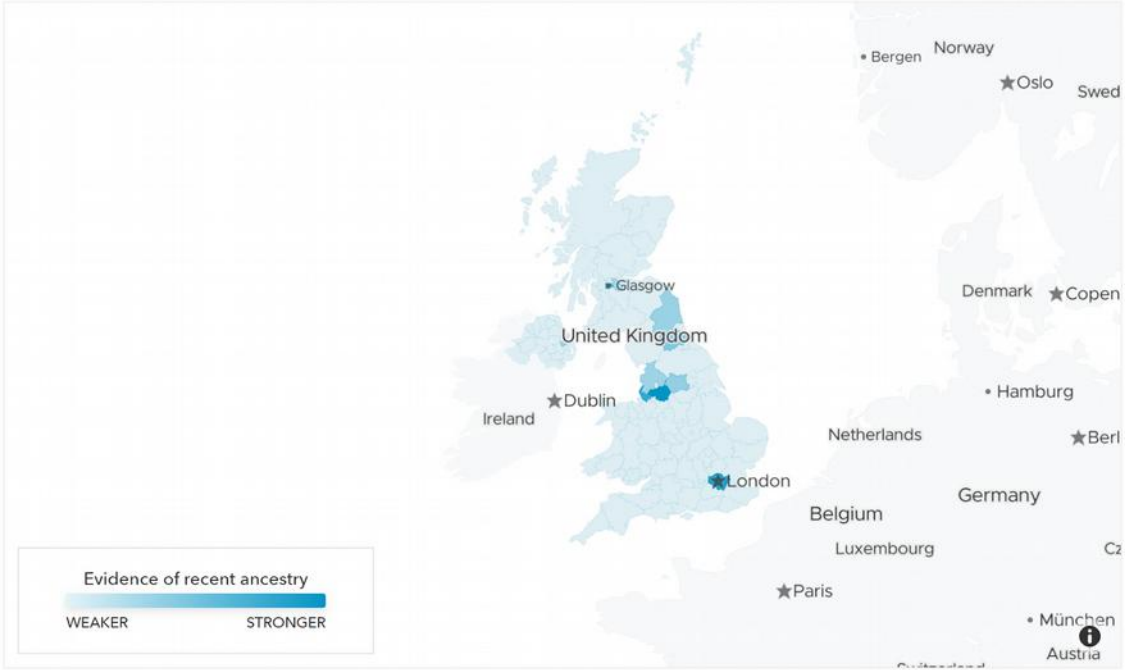
We found evidence of your recent ancestry in the following regions. Darker regions represent places where you have DNA in common with more people who report ancestry from that particular region. Because these results reflect the ancestries of individuals currently in our reference database, expect to see your results change over time as that database grows. **Read more in Scientific Details.**

British & Irish 71.9%

United Kingdom — Highly Likely Match

The United Kingdom has 165 administrative regions, and we found the strongest evidence of your ancestry in the following 10 regions.

1. Greater Manchester
2. Greater London
3. Merseyside
4. Glasgow City
5. County Durham
6. West Yorkshire
7. Northumberland
8. Belfast
9. Lancashire
10. North Lanarkshire



Jessica Lee	100%
European	**99.7%**
Northwestern European	96.0%
British & Irish	39.9%
French & German	31.0%
Scandinavian	2.3%
Finnish	0.4%
Broadly Northwestern European	22.3%
Southern European	1.4%
Broadly Southern European	1.4%
Eastern European	0.9%
Ashkenazi Jewish	0.3%
Broadly European	1.0%
Sub-Saharan African	**0.3%**
West African	0.1%
Broadly West African	0.1%
Broadly Sub-Saharan African	0.2%
No Data Available	

Get to Know Your Relatives with Finnish Ancestry

Start a conversation to learn more about your shared ancestry.

Ilkka Tammela

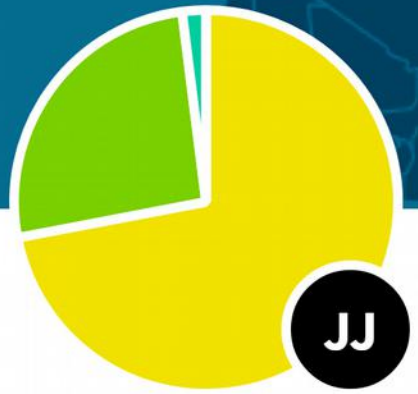
Predicted 4th Cousin

Has roots in Finland

Jorma Kinnunen

Predicted 5th Cousin

Has roots in Finland

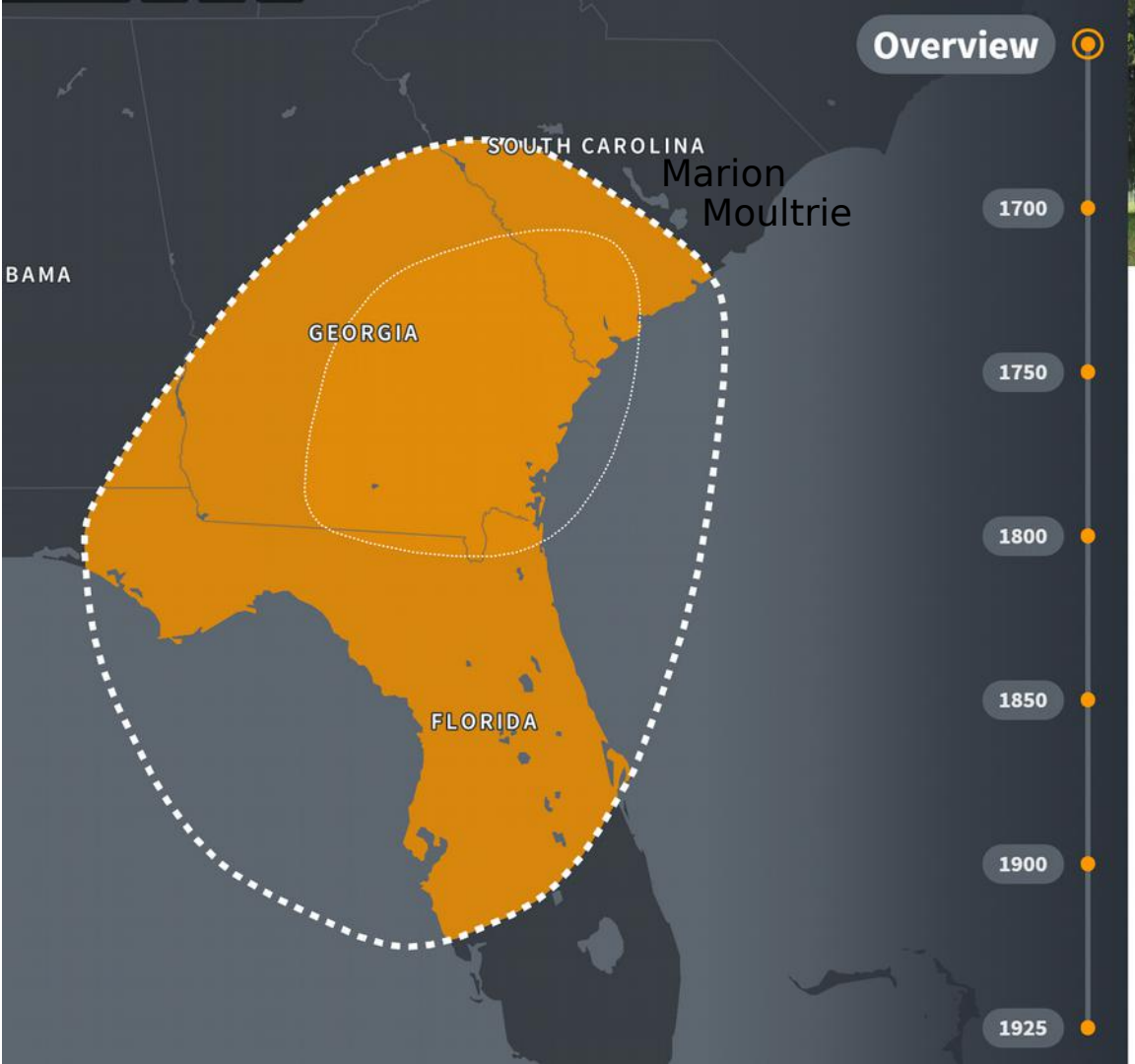


Ethnicity Estimate

72% England, Wales, and Northwestern Europe

26% Ireland and Scotland

2 Other regions



Ralph Daily / Flickr / CC BY 2.0 / Cropped

COMMUNITY

Georgia & Florida Settlers

302,335 AncestryDNA members

You, and all the members of this community, are linked through shared ancestors. You probably have family who lived in this area for years—and maybe still do.

Use the timeline to explore what their life might have been like.

The more specific places within this region where your family was likely from.

Southeast Georgia Settlers

Featured Matches

These are some of your matches who also belong to this community.

Many stop with ethnicity...

– – –

...but *matches* provide genealogical gold.

- Close matches (adoptees, NPEs)
- **Distant cousins (climbing UP the tree)**

Contacting matches: The Payoff

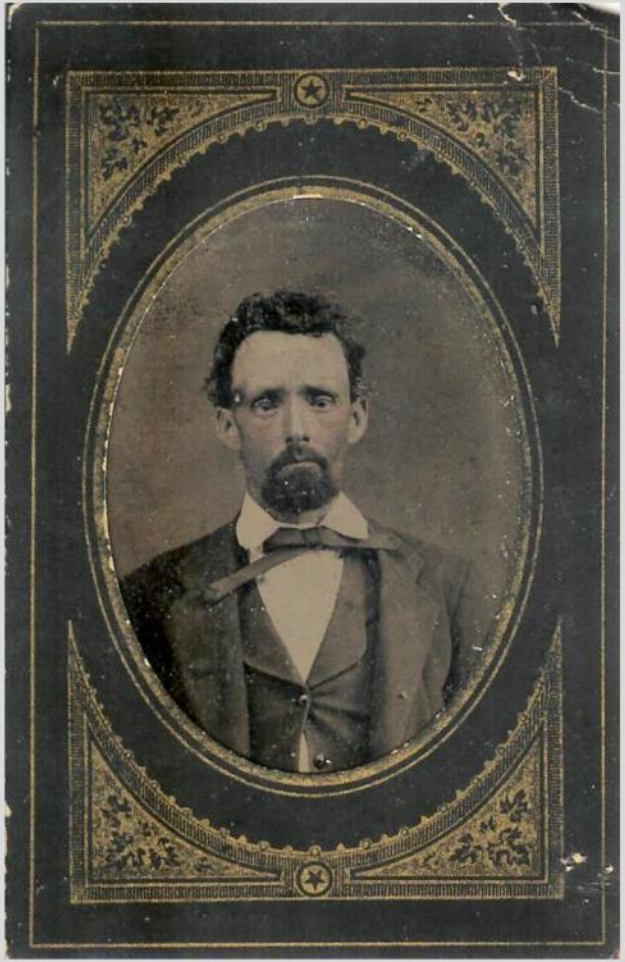
Two previously unknown first cousins

New family tree discoveries

New friends

New photos

New field trip ideas



John W. Lloyd (4th great grandfather)

BIRTH 1 APR 1830 • Darlington, SC

DEATH 12 DEC 1902 • Darlington, SC

Battle of Chickamauga (1863)

Field Trip!

Chickamauga and Chattanooga National Military Park

WAY TO PLA

Distant cousins

- Shared match lists (location, branch of tree)
- Comparing with other family (half siblings, parents, etc.)
- cM values
- Chromosome browser information
- Special techniques (e.g., visual triangulation)

Visual Triangulation

Big picture with a few details

Focus on the big picture.

Details provided to support & illustrate.

Videos are available for later review.

- Facebook and YouTube

Visual Triangulation

Making *INDIRECT* DNA comparisons.

Compare DNA matches at one company with DNA matches at another company!

Compare DNA matches with each other even when chromosome browser settings do not permit! (FTDNA)

Compare matches & sort matches by family line.

Backing up...

What is triangulation?

What is triangulation?

Looking at shared DNA & shared Ancestry to explore family relationships.

- **Shared DNA segments**

Segment Triangulation

1. Select a shared segment of DNA.
2. Look for other people who share the same DNA segment.
3. Look for ancestry shared by all of the people who share the segment.
4. Repeat for each shared segment.

Example...

Spivey cousins (maternal)

23andMe

Now comparing DNA segments.

Select different relatives or friends to compare.

Jason Lee
and
Bobby

Half identical
72 cM
2 segments

Jason Lee
and
Sherry

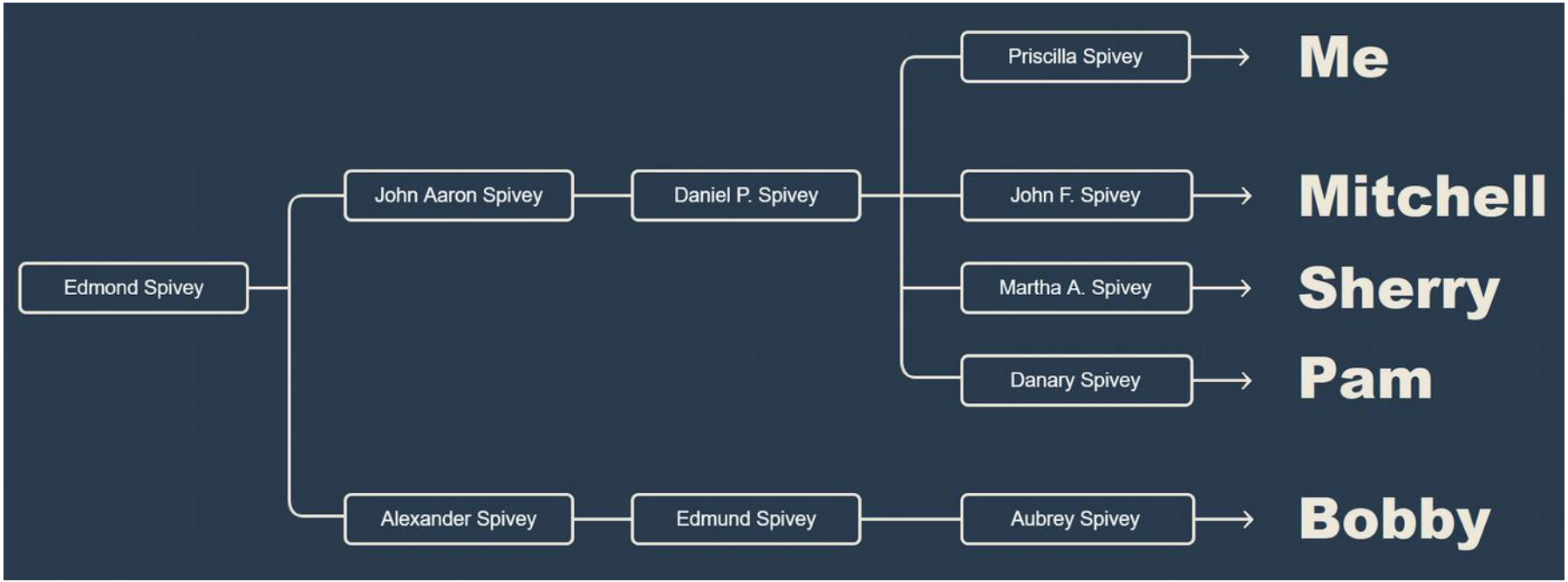
Half identical
88 cM
4 segments

Jason Lee
and
Pam

Half identical
94 cM
3 segments

Jason Lee
and
Mitchell Mendoza

Half identical
46 cM
1 segment


Edmond Spivey
John Aaron Spivey
Daniel P. Spivey
Priscilla Spivey
Me
John F. Spivey
Mitchell
Martha A. Spivey
Sherry
Danary Spivey
Pam
Alexander Spivey
Edmund Spivey
Aubrey Spivey
Bobby

My triangulation video!

DNA Triangulation for Family History

Triangulation Challenges

Confirming mutually shared DNA

Confirming shared ancestry

Why confirm mutually shared DNA?

Because appearances can be deceiving.

Two groups of matches: maternal & paternal

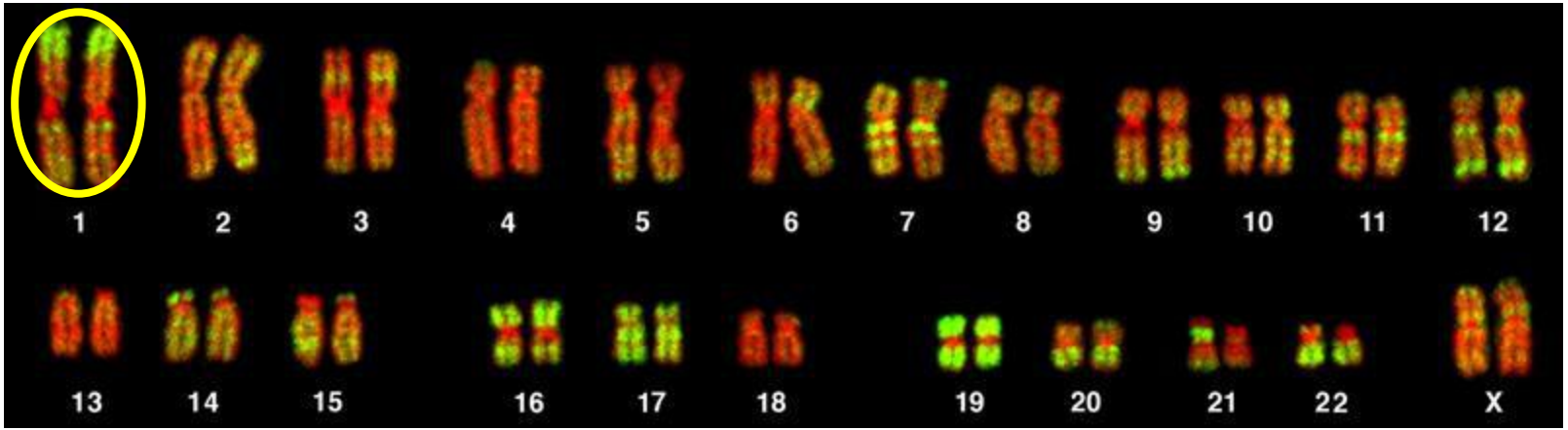
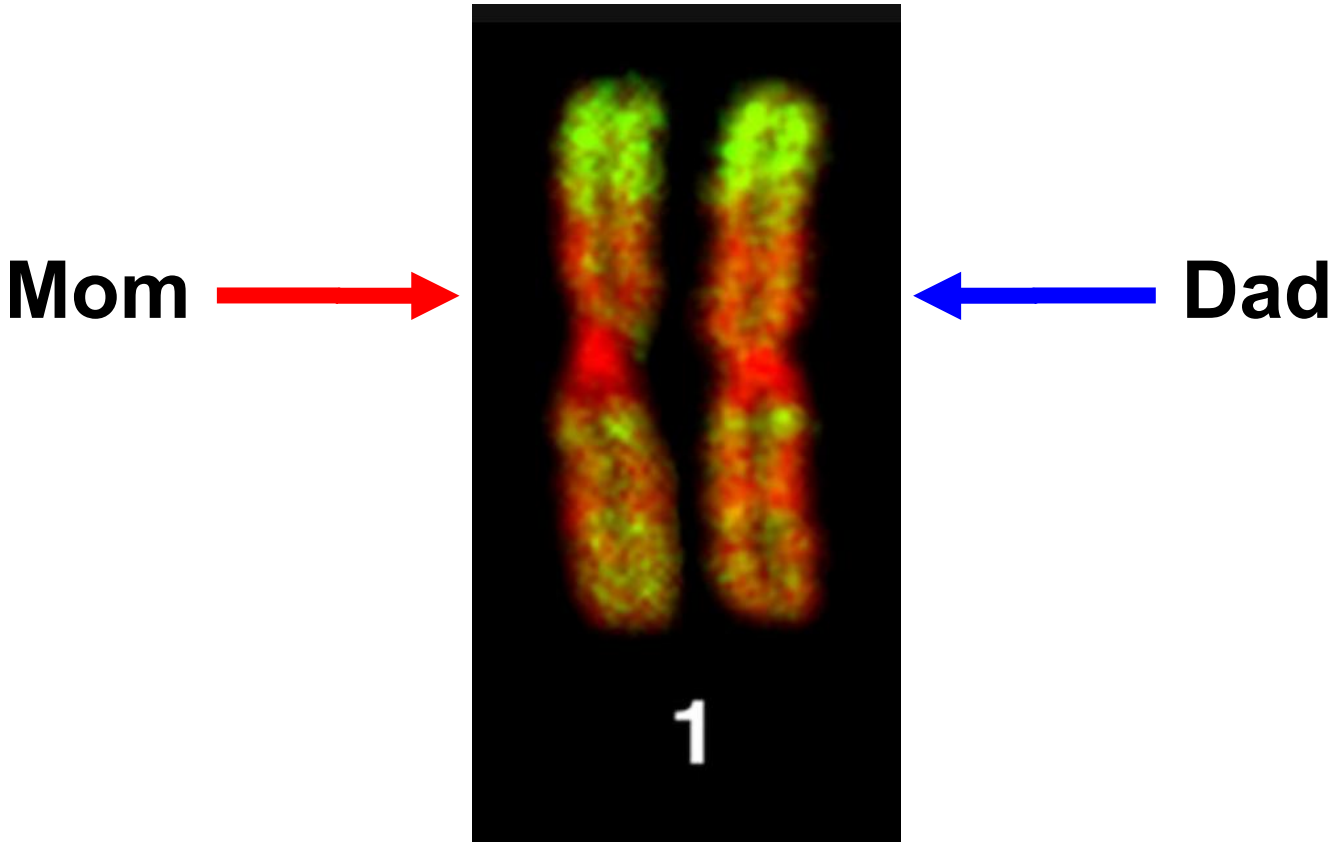


Image source:
https://en.wikipedia.org/wiki/Gene

Chromosome 1: Maternal and Paternal



Another Spivey segment?

FTDN
A

questions:

1. Sort matches
2. Compare matches
3. Confirm connections

Sorting matches...

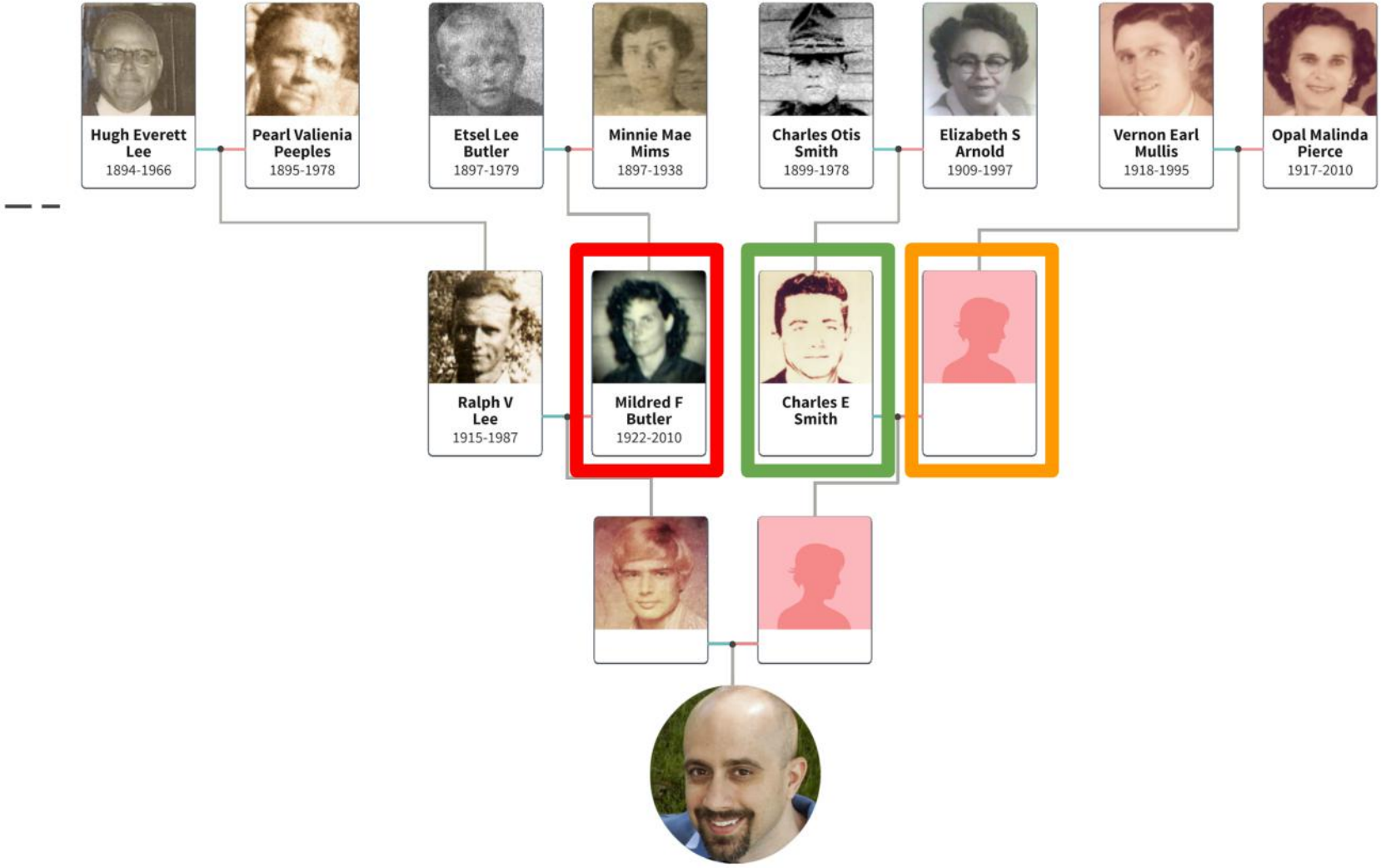
Test parents!

Test grandparents!

Test great grandparents!

Test other relatives!!!

Oldest generation always has a sorting problem!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1918-1995
Opal Malinda Pierce
1917-2010
Ralph V Lee
1915-1987
Mildred F Butler
1922-2010
Charles E Smith

Sorting & comparing matches

- **Chromosome browser** (**23andMe, GEDmatch**, MyHeritage, FTDNA, ~~AncestryDNA~~)
- **Triangulation tools and features** (**GEDmatch**, **23andMe, MyHeritage**, ~~FTDNA~~, ~~AncestryDNA~~)
- **Visual triangulation** (**23andMe, GEDmatch**, **MyHeritage**, **FTDNA**, ~~Ancest[illegible]NA~~)

Make direct comparisons!

Whenever possible use...

Chromosome browsers

Triangulation tools

Direct comparisons not always possible!

Our cousins test at different companies!

Direct comparison between Cousin A only at FTDNA and Cousin B only at 23andMe: **NOT POSSIBLE!**

Example...

New example: Cousin Graham Bennett

– – –

New match in May 2017 at FTDNA

No tree, no response but name + email address led to mom's obituary and other helpful info.

Cousin Graham Bennett

– – –

Shared ancestry:

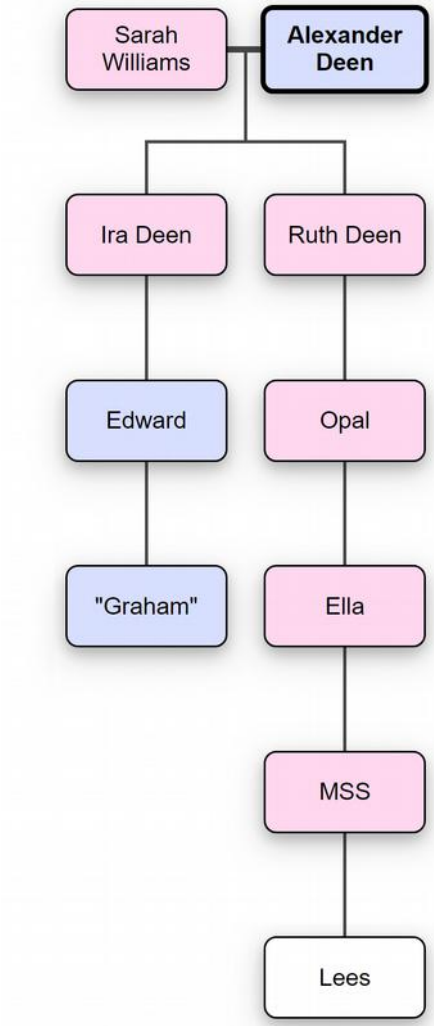
Alexander Hamilton Stephens Deen / Sarah Frances Williams

2nd cousins twice removed (maternal)

John Barber Waters / Martha Lanier

4th cousins once removed (**paternal**)

Graham


Sarah Williams
Alexander Deen
Ira Deen
Ruth Deen
Edward
Opal
"Graham"
Ella
MSS
Lees

Graham

– – –

Shared DNA:

104 cM (sibling summation)

Mother's 2nd cousin once removed

Cousin Graham: Questions

Can we confirm Graham's tree with DNA match results?

Can we confirm the source of the shared DNA?

Is our paternal relationship contributing?

Can triangulation help?

Cousin Graham

Graham tested at **FTDNA.**

Many of my Deen cousins, including Graham's niece & aunt have also tested...**but only at 23andMe!**

Cousin Graham

Great match

Share great connections

Direct comparisons not possible!

Solution: Visual Triangulation!

Indirect (but VERY reliable) comparisons

Goal in this case: Compare FTDNA match results with 23andMe match results.

Solution: Visual Triangulation!

- [x] Needed: Other family member(s)
- [x] Two generations often preferable
- [x] Matching segment details required (chromosomes, positions)

Cousin Graham: DNA resources

FTDNA: Chromosome browser

103.8 cM

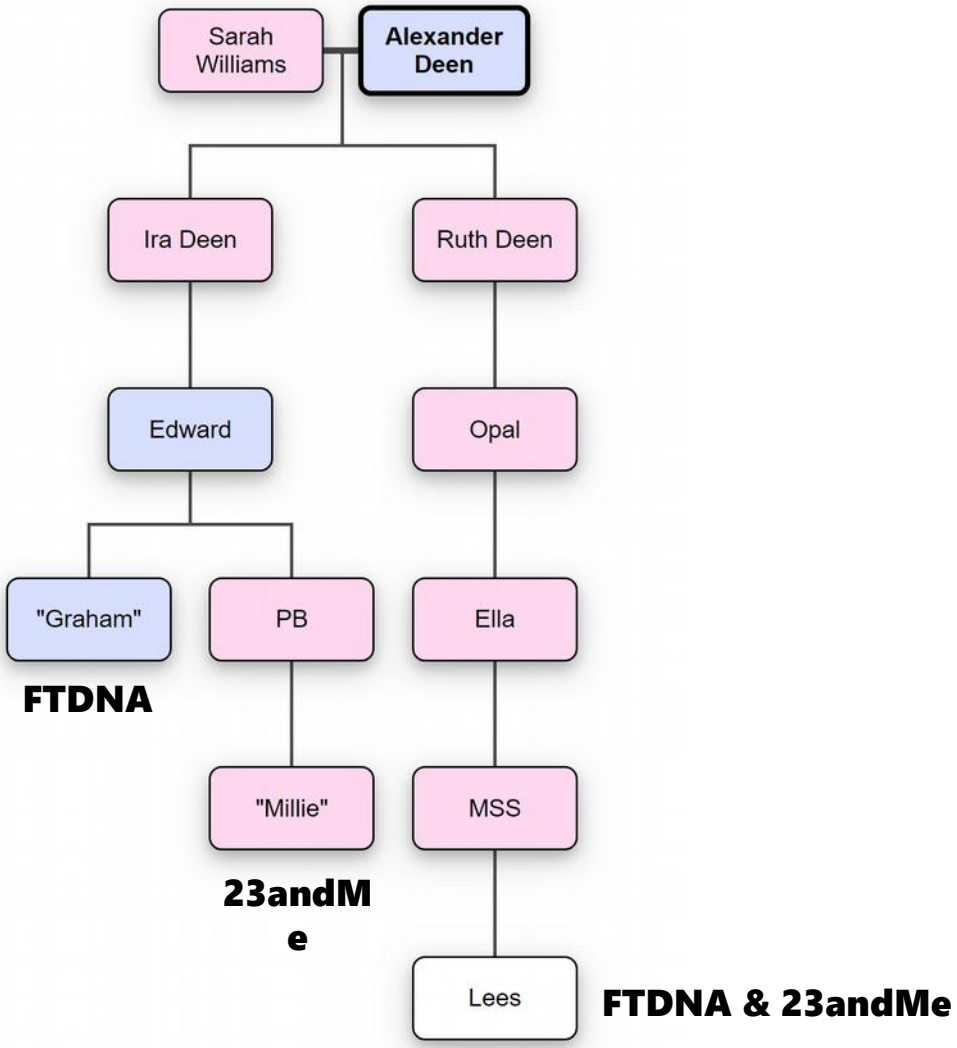
Chromosomes **3, 6, 10, 21**

Twelve of my close family members to be compared with Graham and his close relatives.

Family members compared

Me, siblings **2**, **4**, **5**, **6**, **7**, **8**, my three children, nephew **E** and niece **B**.

Millie


Sarah Williams
Alexander Deen
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Ruth Deen
Edward
Opal
"Graham"
PB
Ella
FTDNA
"Millie"
MSS
23andMe
Lees
FTDNA & 23andMe

Chromosome 3

Graham matches siblings **4, 6, 7, 8 and niece B** (FTDNA)

Graham's niece (Millie) matches sibs **4, 6, 7, 8 and niece B** (23andMe)!

Segment position **29,000,000 - 41,000,000**

Chromosome 3 , 2nd segment

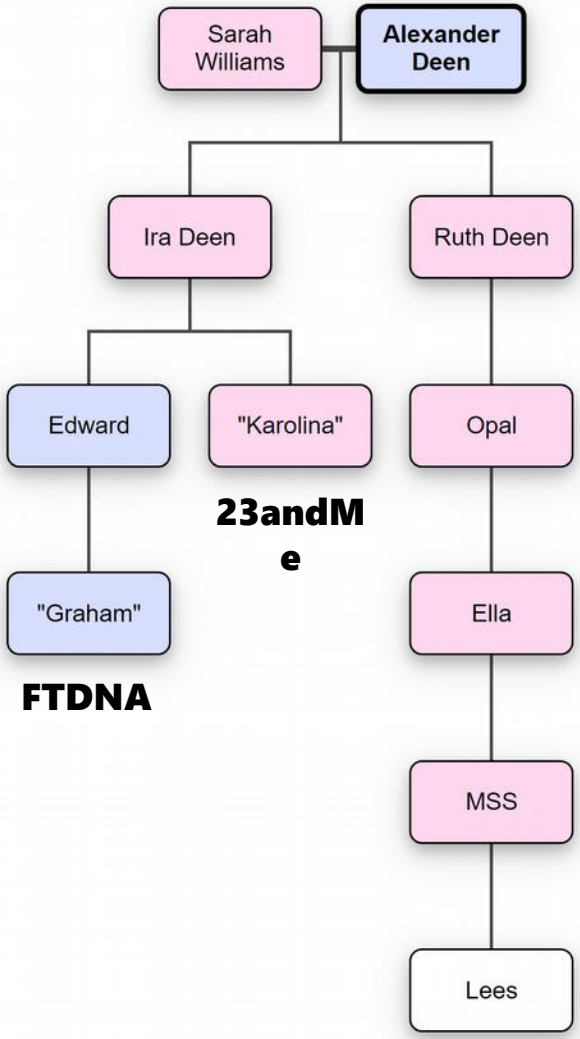
– – –

Graham matches **me**, siblings **4, 7, 8** & *all three of my kids* (FTDNA)

Millie matches **me**, siblings **4, 7, 8** & *all three of my kids* (23andMe)!

Segment position: **61,000,000 - 71,000,000**

Karolina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23andMe
"Graham"
Ella
FTDNA
MSS
Lees
FTDNA & 23andMe

Chromosome 3, 3rd segment

– – –

Graham matches siblings **2**, **4, 5, 7** & nephew **E** (FTDNA)

Graham's aunt (Karolina) matches sibs **2**, **4, 5, 7** & nephew **E** (23andMe)!

Segment position **175,000,000 - 183,000,000**

Chromosome 6

– – –

Graham matches me, sibs **4**, **5**, **6**, **8**, niece **B**, my **daughter** & my 2nd **son** (FTDNA)

Karolina matches me, sibs **4**, **5**, **6**, **8**, niece **B**, my **daughter** & my 2nd **son** (23andMe)!

Segment position **150,000,000 - 167,000,000**

Chromosome 10

– – –

Graham matches me, sibs **5**, **7**, & my younger **son** (FTDNA)

Karolina matches me, sibs **5**, **7**, & my younger **son** (23andMe)!

Segment position **123,000,000 - 135,000,000**

Chromosome 21

– – –

Graham matches siblings **5**, **6**, **8** (FTDNA)

Karolina matches siblings **5**, **6**, **8** (23andMe)!

Segment position **25,000,000 - 29,000,000**

Observations

Graham (at FTDNA) and Millie (at 23andMe) both match **identical subsets** of my close family members on two segments on Chromosome 3.

Hypotheses

Graham and Millie match each other on Chromosome 3.

Graham and Millie triangulate with my family on those segments.

Graham & Millie triangulate as noted because of our shared ancestry on the Deen line.

Observations

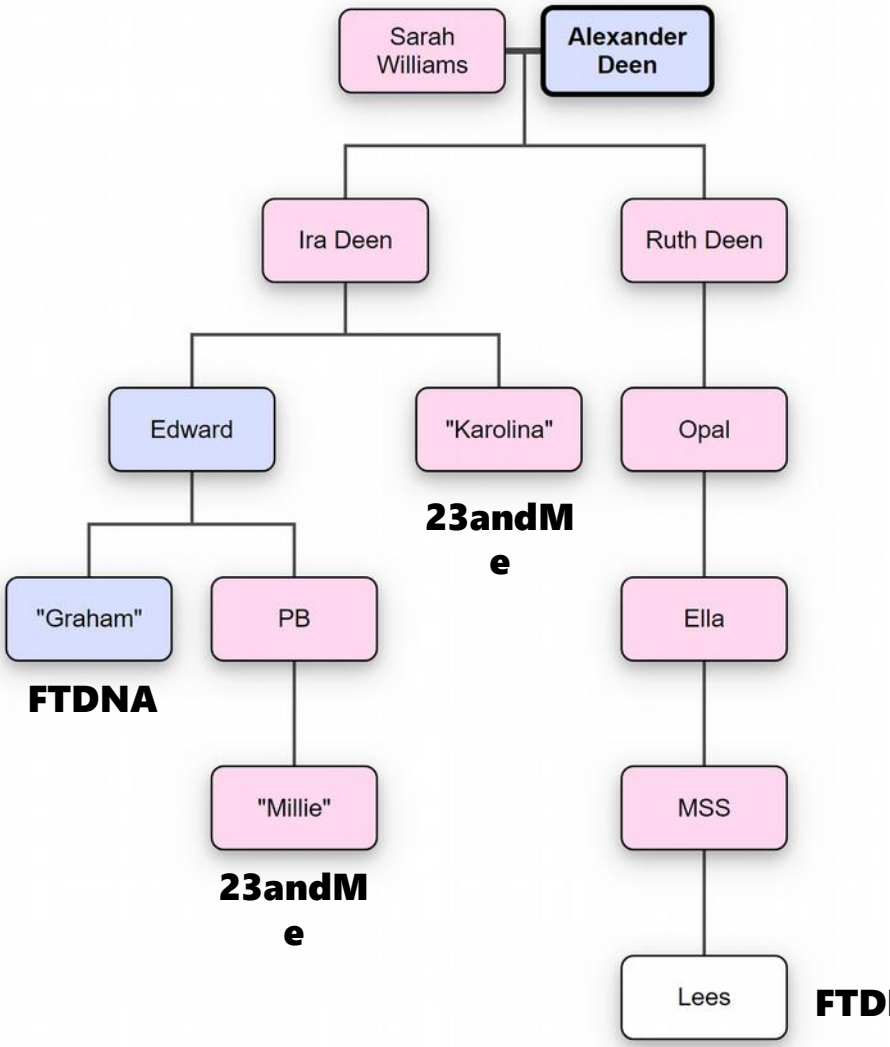
Graham (at FTDNA) and Karolina (at 23andMe) match **identical subsets** of my close family members on several DNA segments (on Chromosomes 3, 6, 10 and 21.)

Hypotheses

Graham and Karolina match each other on Chromosomes **3, 6, 10 and 21**.

Graham and Karolina triangulate with my family**.**

Graham & Karolina triangulate on those chromosomes because of our shared ancestry on the Deen line.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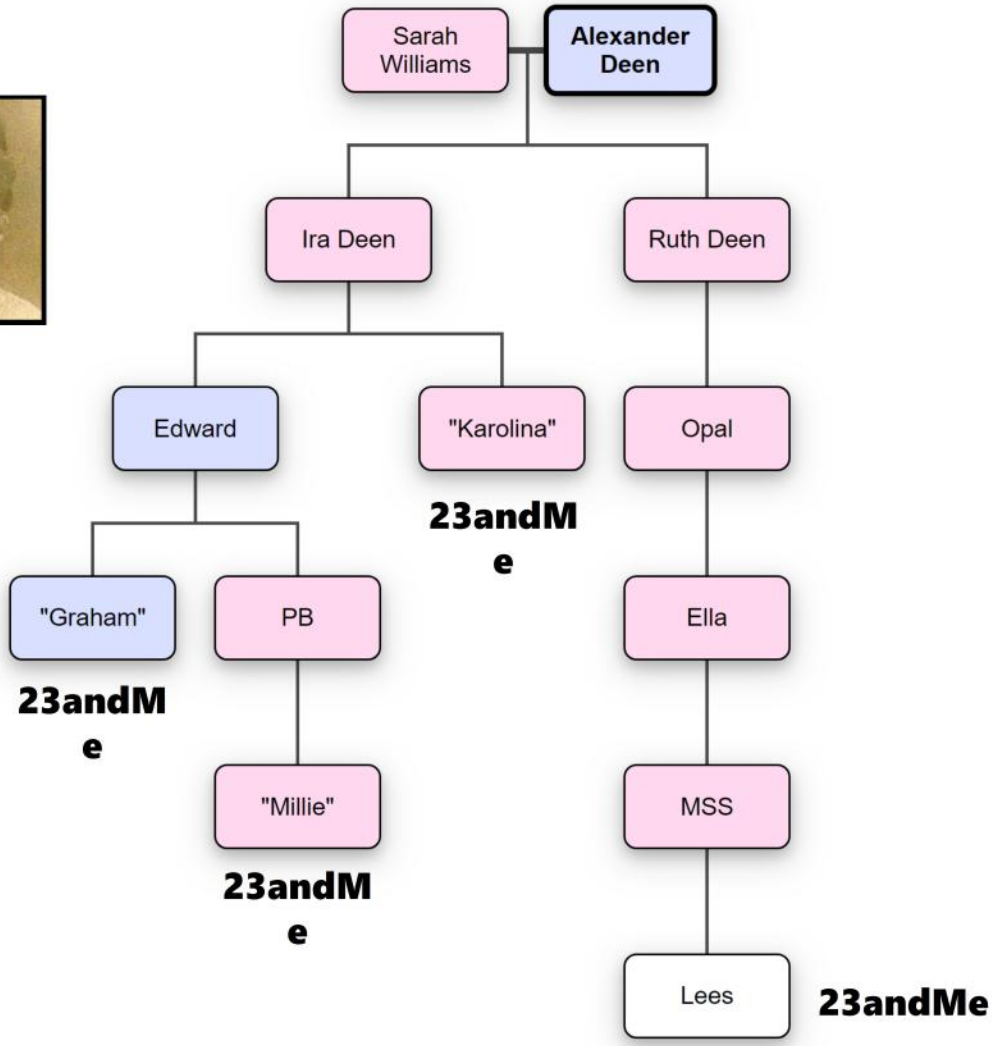
23andMe
Lees
FTDNA & 23andMe

UPDATE: March 2019

Graham appeared as a match at 23andMe!

We usually don’t get so lucky!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PB
Ella
23andMe
"Millie"
MSS
23andMe
Lees
23andMe

GB
KW
Half identical
2225 cM
44 segments
GB
MS
Half identical
1772 cM
59 segments
1
2
3
4
5
6
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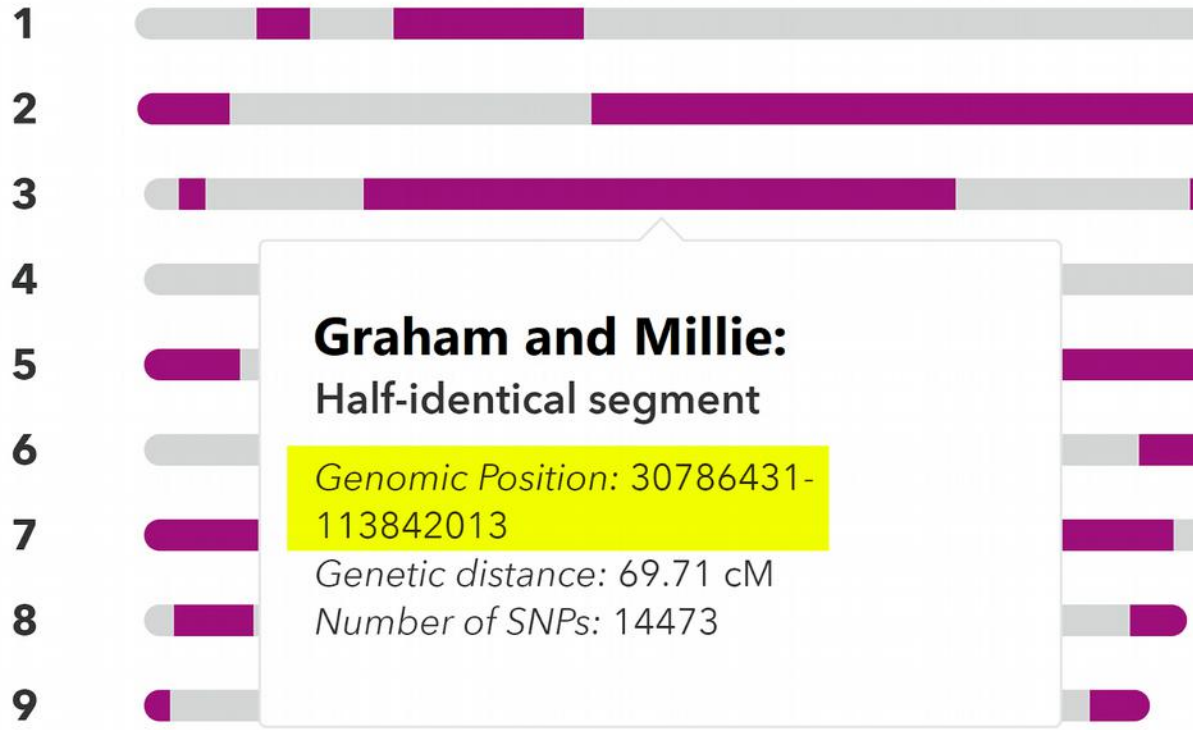
21
22
X

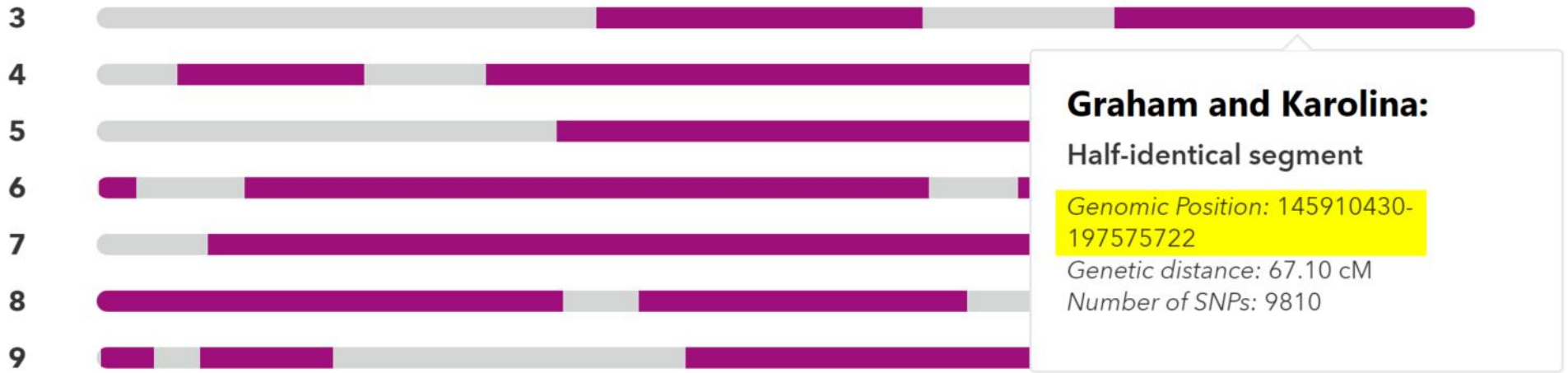
Chromosome 3 (Millie)



29,000,000 - 41,000,000

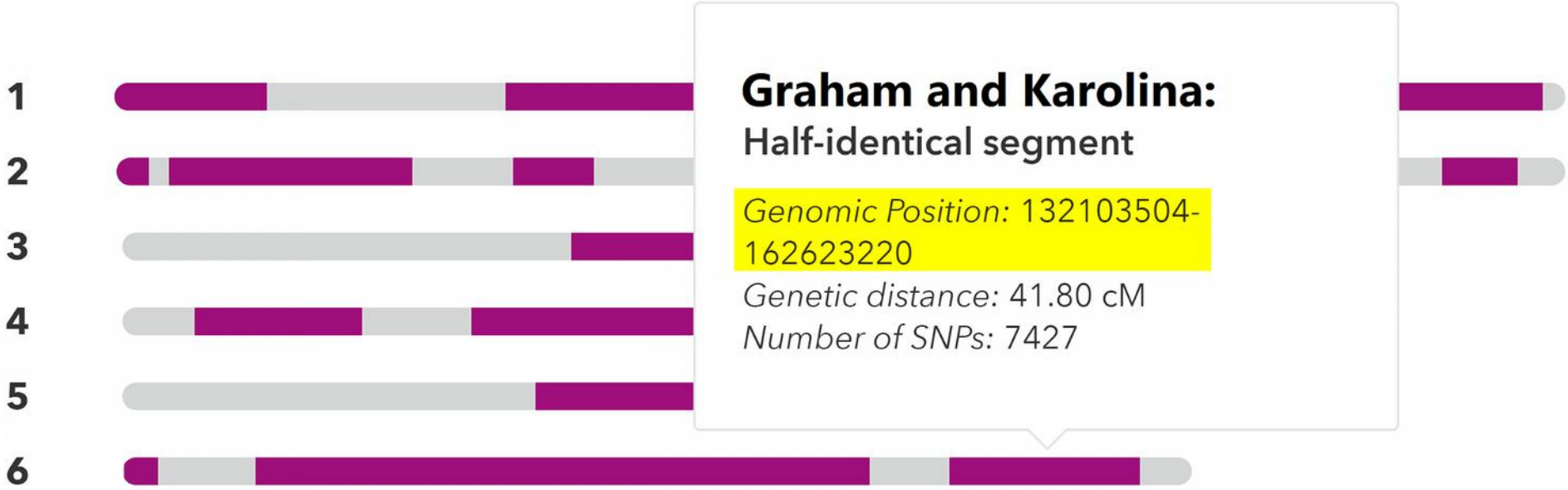
61,000,000 - 71,000,000

Chromosome 3 (Karolina)



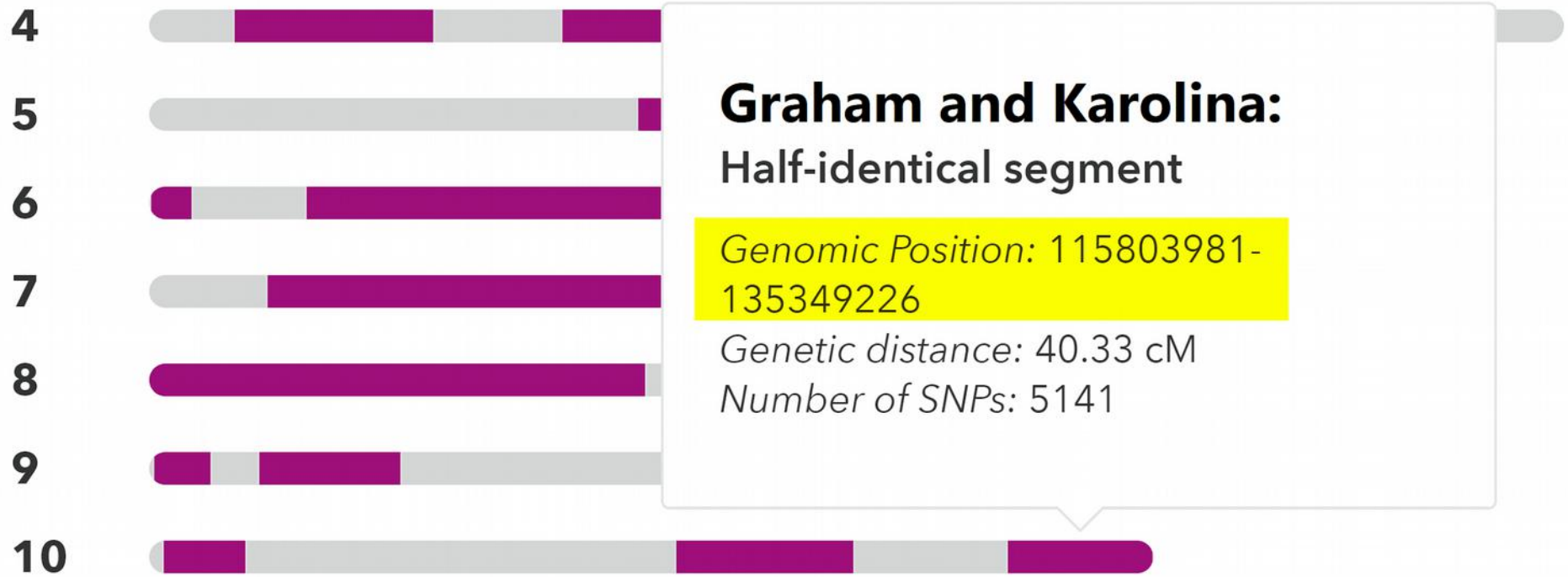
175,000,000 - 183,000,000

Chromosome 6 (Karolina)



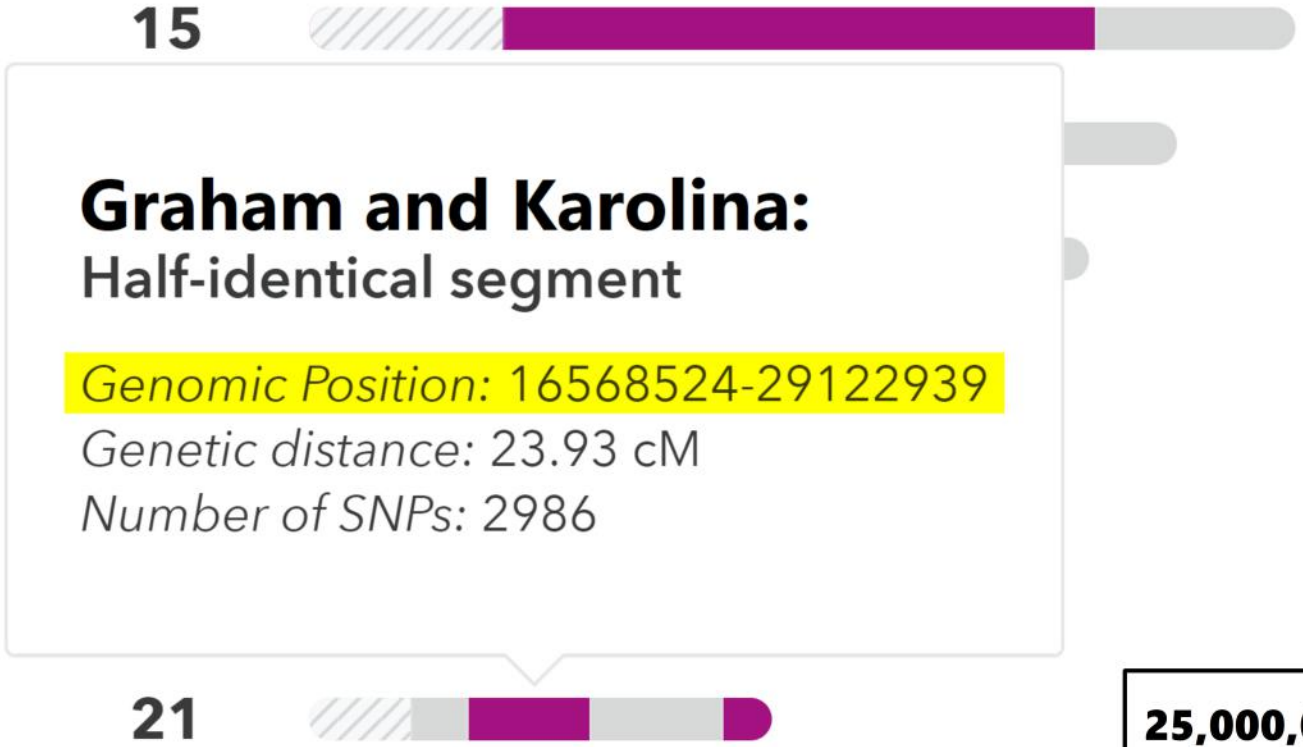
151,000,000 - 167,000,000

Chromosome 10 (Karolina)



123,000,000 - 135,000,000

Chromosome 21 (Karolina)



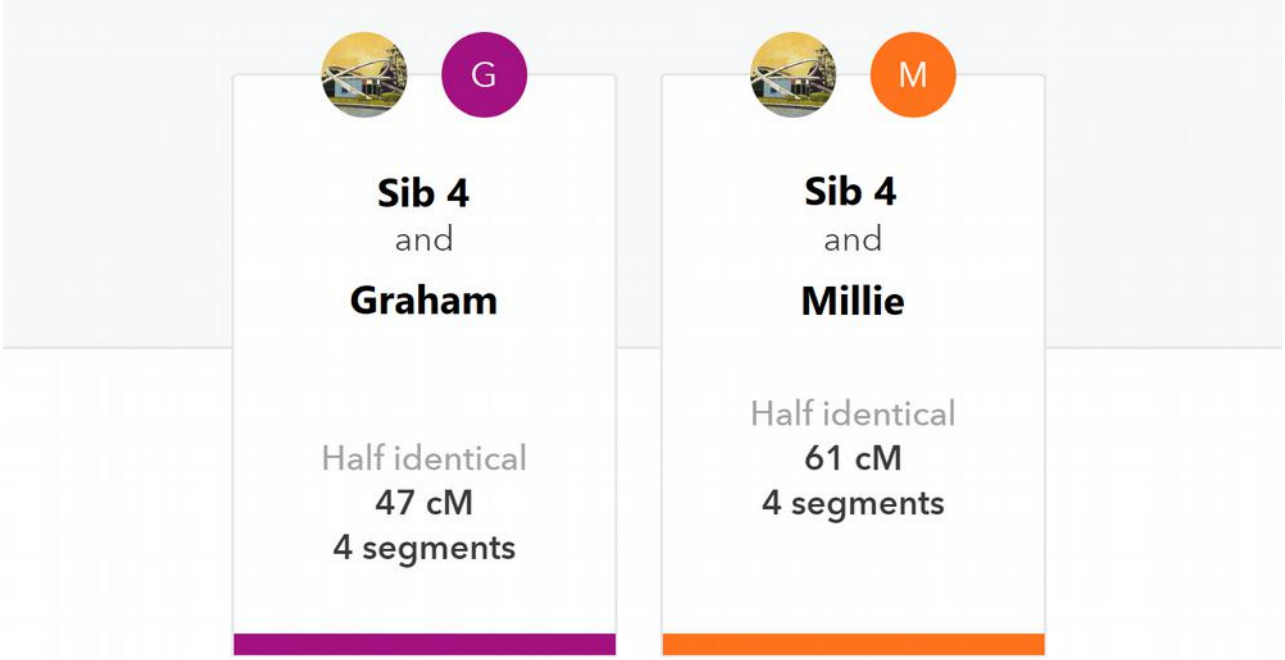
25,000,000 - 29,000,000

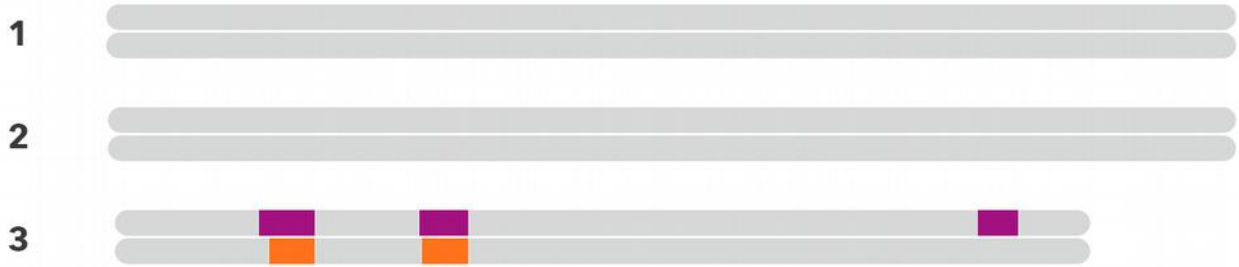
Sib 4 and Graham's shared matches: Millie

You have 234 Relatives in Common™

Finding common relatives can help you piece together your family story.

Relative in common	You	Graham	Shared DNA
MS Millie	3rd Cousin	Niece	Yes
Hanz [redacted]	3rd Cousin	Distant Cousin	Yes
TV Trudy [redacted]	3rd Cousin	5th Cousin	No
MS Marci [redacted]	3rd Cousin	4th Cousin	No





Triangulation confirmed

Sib 4 and Graham's shared matches: Karolina

You have 234 Relatives in Common™

Finding common relatives can help you piece together your family story.

Relative in common	You	Graham	Shared DNA
Dawn	3rd Cousin	4th Cousin	Yes
LB Laura	3rd Cousin	2nd Cousin	No
LP Laurie	3rd Cousin	5th Cousin	No
KW Karolina	3rd Cousin	Aunt	Yes

G

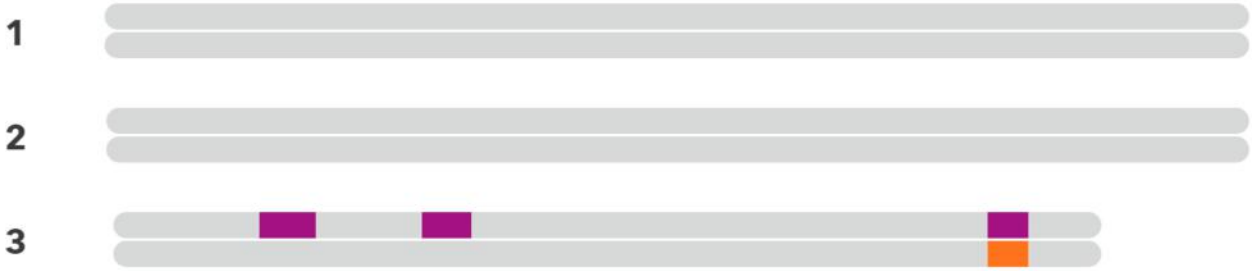
Sib 4
and
Graham

Half identical
47 cM
4 segments

K

Sib 4
and
Karolina

Half identical
77 cM
4 segments



Triangulation confirmed

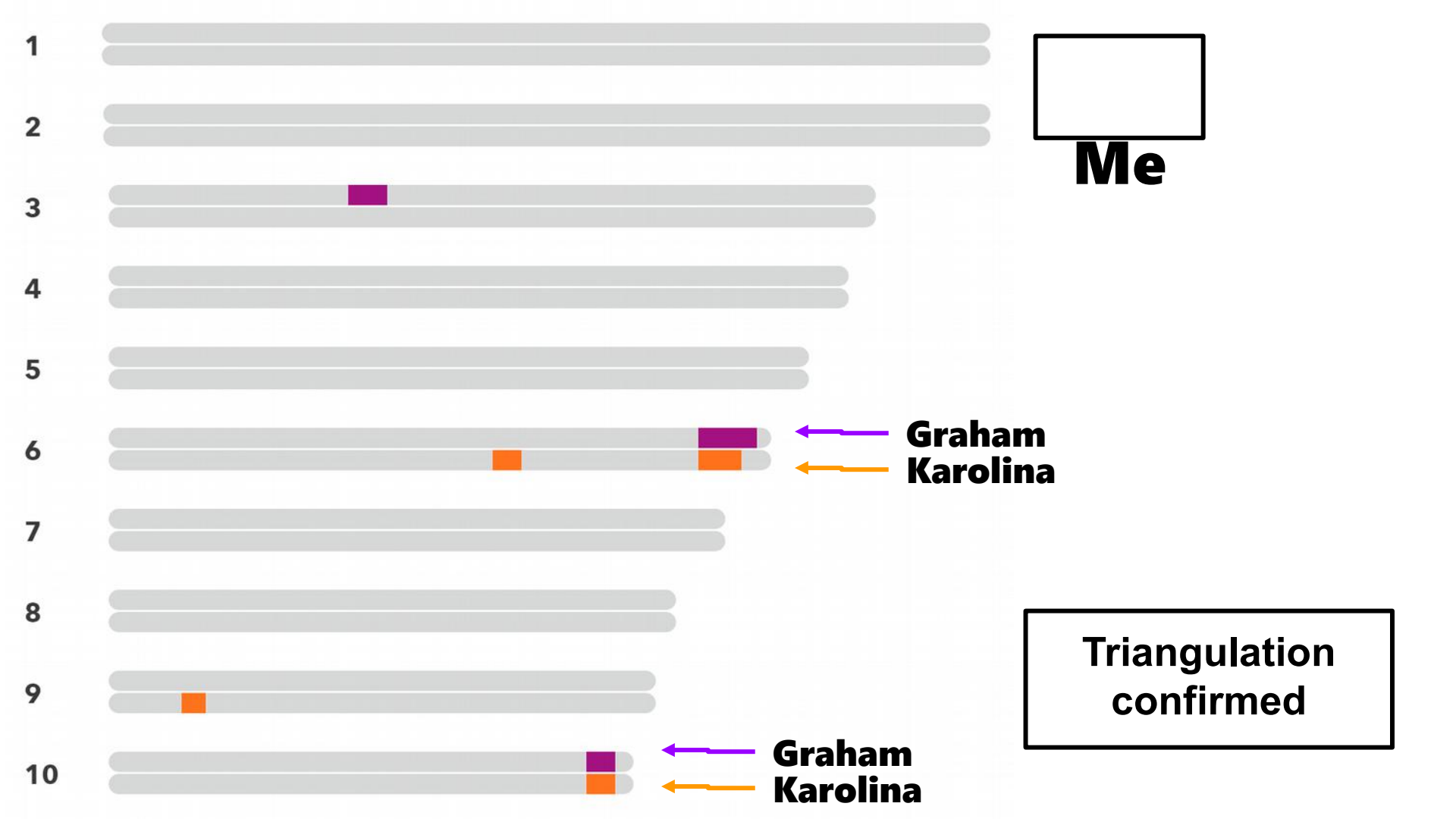
You have 266 Relatives in Common™

Finding common relatives can help you piece together your family story

[redacted]

Me

Relative in common	You	Graham	Shared DNA
JW Jessic[redacted]	3rd Cousin	5th Cousin	No
Dawn[redacted]	3rd Cousin	4th Cousin	Yes
MS Marci[redacted]	3rd Cousin	4th Cousin	No
Victor[redacted]	3rd Cousin	3rd Cousin	No
WE Willian[redacted]	3rd Cousin	4th Cousin	No
LB Laura[redacted]	3rd Cousin	2nd Cousin	Yes
MS M[redacted]	3rd Cousin	Niece	Yes
KW Karolina	3rd Cousin	Aunt	Yes


1
2
3
4
5
6
7
8
9
10
Me
Graham
Karolina
Graham
Karolina
Triangulation confirmed

Chromosome 21

Triangulation tool not accessible.

Segment only 6.5 cM

Conclusion

Visual triangulation (VT) correctly predicted segments that Graham shares with Millie and Karolina.

VT correctly predicted triangulated segments, confirmed by direct comparisons.

Discussion

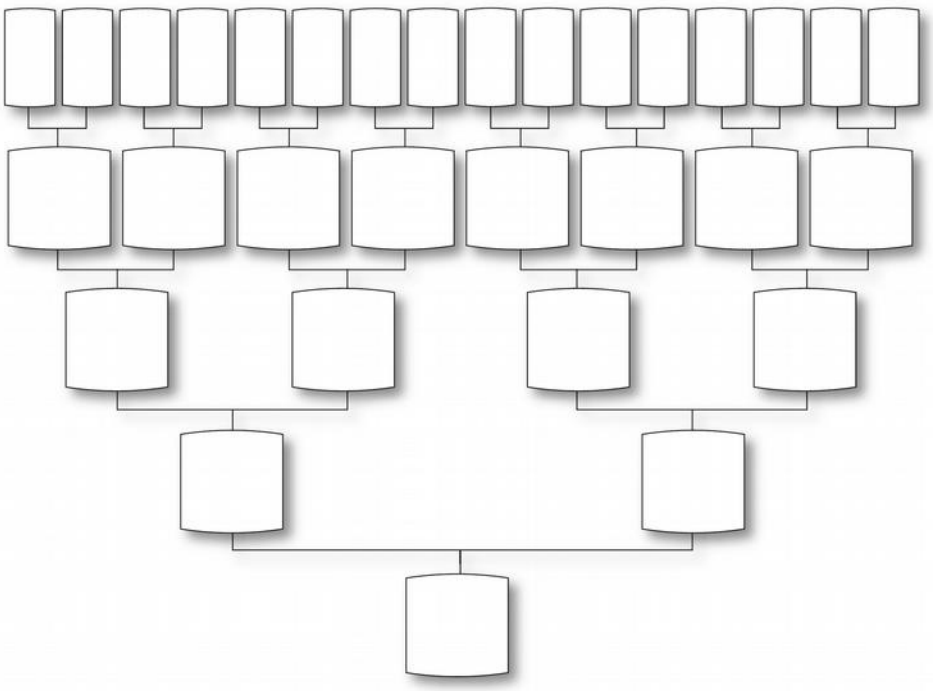
Don’t lose sight of total centiMorgans (cM)

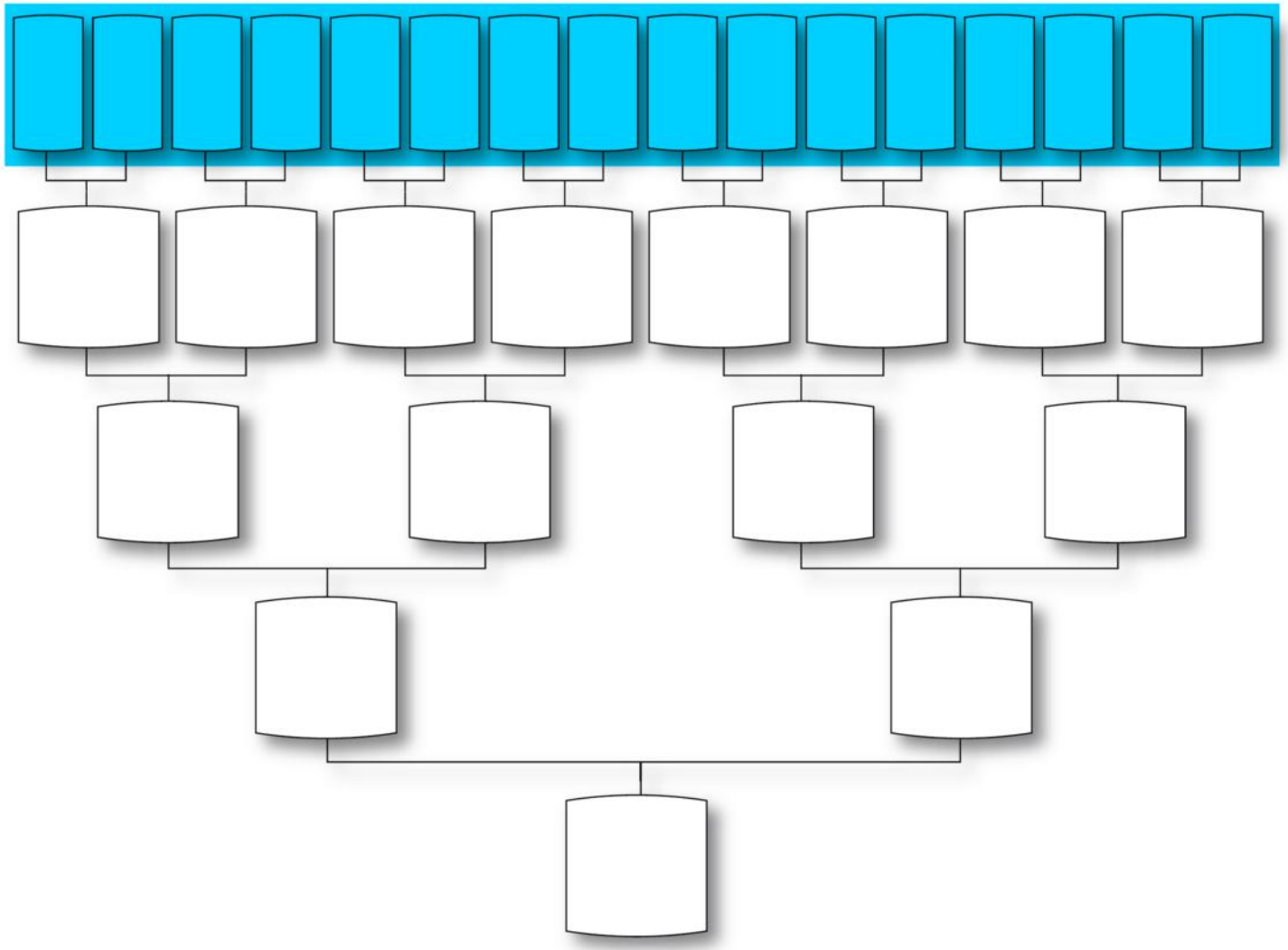
Total cM: predicts distance of relationship

Finding common ancestry

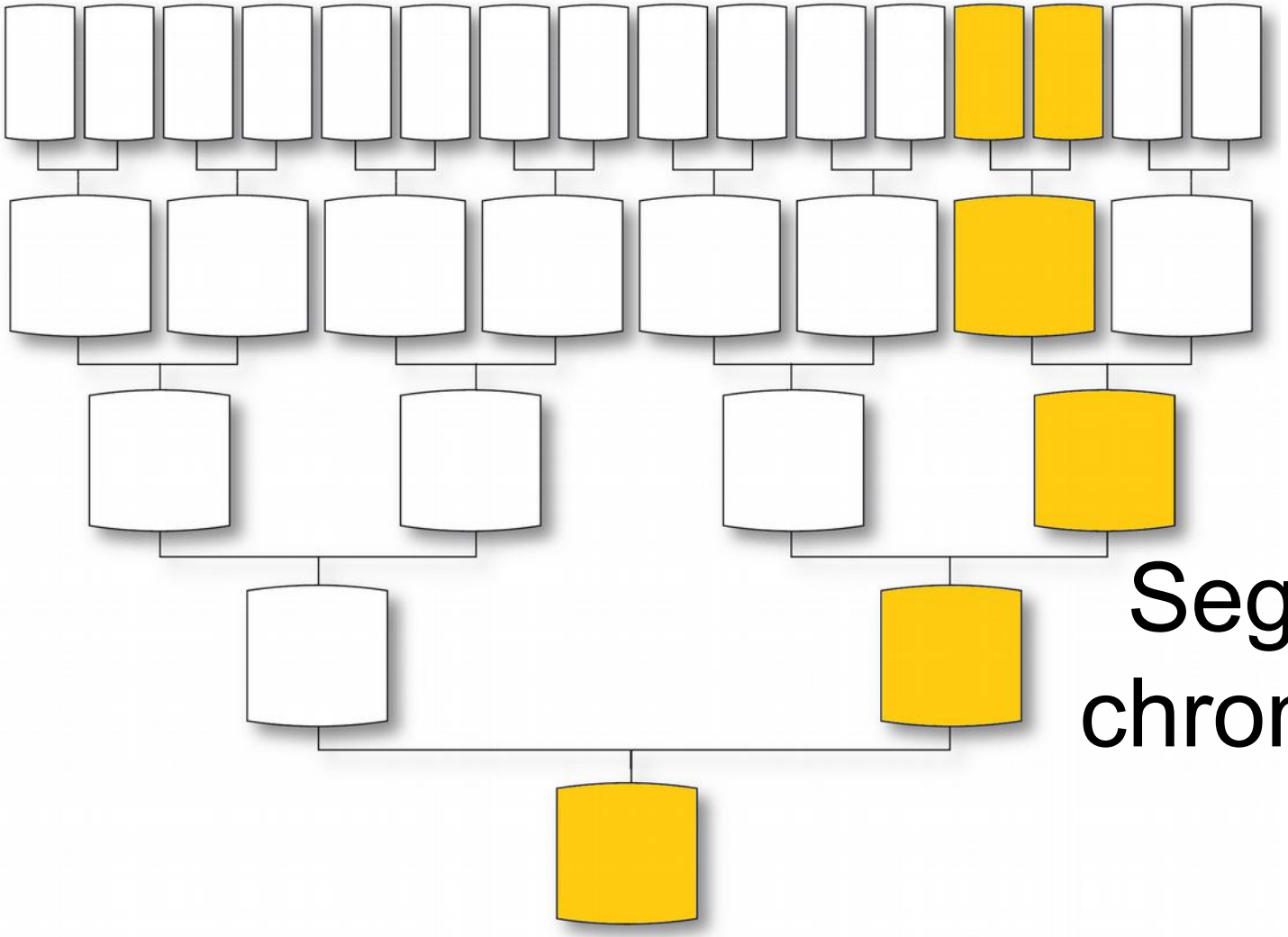
Amount of DNA shared (cM) tells you how high up the tree you need to climb.

Location of shared segments tells you <u>which branch</u> to climb.

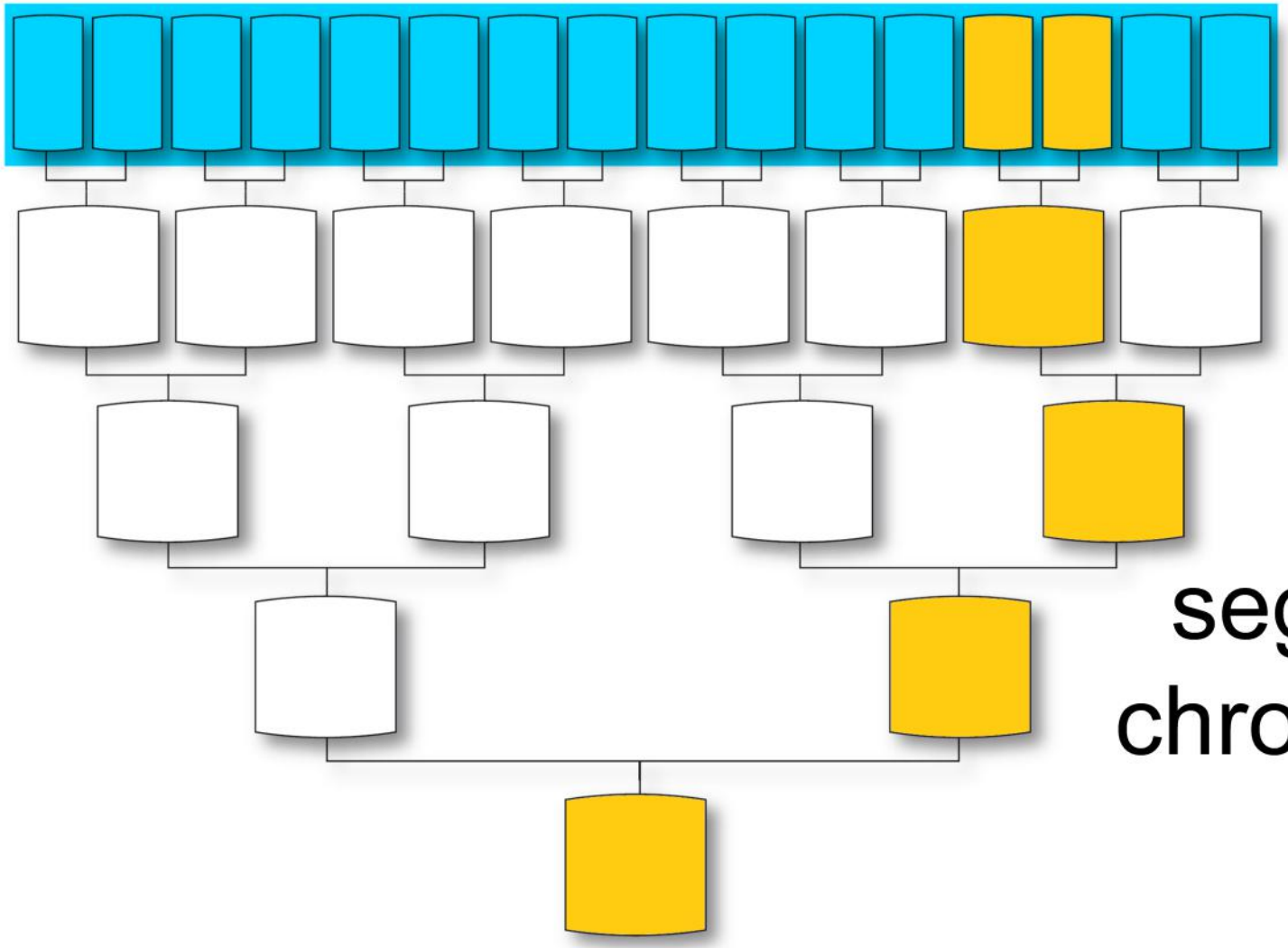




cM



Segments, chromosomes



cM,
segments,
chromosome
s

Discussion

VT can be done with **fewer** family members.

More family members → more complete picture

VT can be done with other groupings of family members.

Same data, different perspectives

My perspective: self, siblings, children, niece, nephew

Daughter's perspective: self, father, aunts/uncles, siblings, first cousins.

Graham's perspective: self, aunt, niece

Strategy

- If you don’t seem to have the what you need to do VT, flip the perspective.
- Strategy: **23andMe, GEDmatch**

Discussion

Direct comparisons are still preferable.

Urge use of all databases (GEDmatch, MyHeritage DNA, FTDNA).

Discussion

Most of our matches will only be available in ONE database.

If we're lucky, that one database will be one with a chromosome browser.

Comparing these matches with matches with matches from **other databases** will only be possible with VT.

Discussion

VT helps to deal with chromosome browsers that don’t allow you to compare your matches with each other (**FTDNA**, MyHeritage).

Comparisons allowed

Is visual triangulation reliable?

252 pairs of matches at 23andMe were chosen at random from chromosomes 1, 2, 3, 21, 22

All share 10 cM or more with me and 10 cM or more with my child.

Each member of each pair shares DNA with me & my child on a corresponding portion of the same chromosome.

All 252 pairs (100%) match each other.

Don’t take my word for it...

Try VT for yourself.

Does VT work for you?

Do you see any problems?

Tell me what you think!

Questions

Chromosome 3: Sib 6 vs Sib 8 (BONUS SLIDE)

— — —

Chr	B37 Start Pos'n	B37 End Pos'n	Centimorgans (cM)	SNPs
3	61,495	4,260,946	13.1	1,618
3	29,114,031	59,112,888	25.5	5,843
3	64,477,004	71,808,566	9.6	1,819
3	114,132,816	192,093,975	89.9	15,593

Chr 3

Image size reduction: 1/42