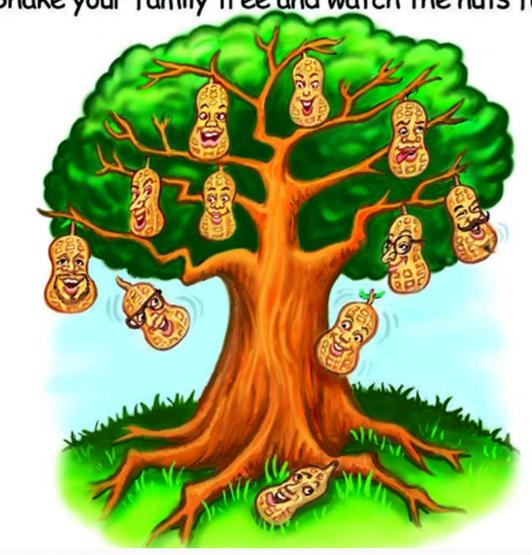


Caleb H. May, MLS, Director Henderson County Public Library

Kentucky Department for Libraries and Archives Webinar October 3, 2019 Shake your family tree and watch the nuts fall!

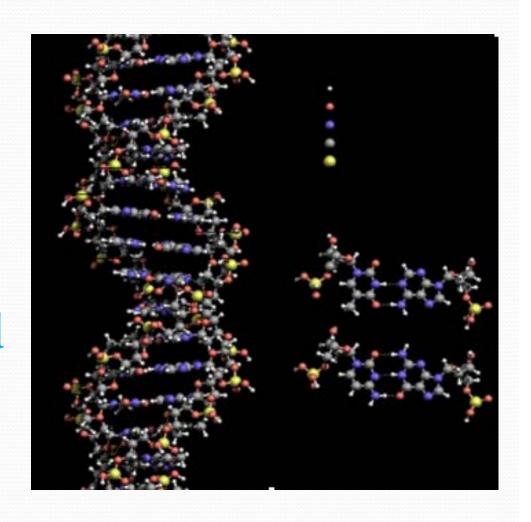






# What is DNA?

Deoxyribonucleic acid (DNA) is a molecule that encodes the genetic instructions used in the development and functioning of all known living organisms and many viruses.

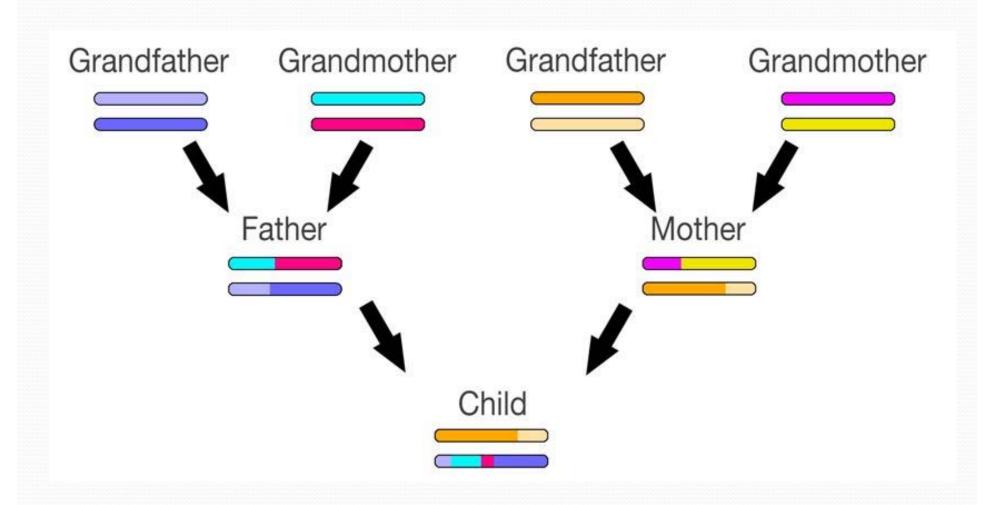


# Three types of DNA used for Genealogical Research

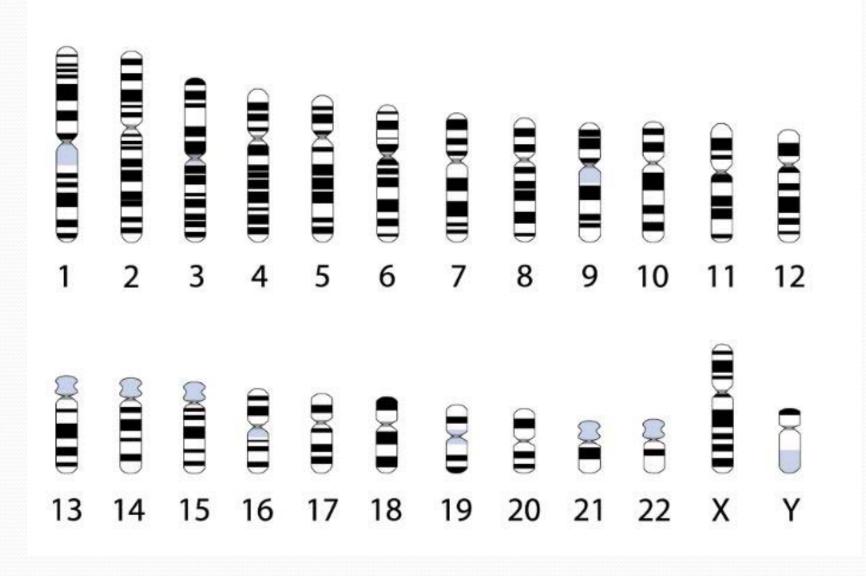


# **Autosomal DNA**

A term used in genetic genealogy to describe **DNA** which is inherited from the **autosomal** chromosomes. An autosome is any of the numbered chromosomes, as opposed to the sex chromosomes. Humans have 22 pairs of autosomes and one pair of sex chromosomes (the X chromosome and the Y chromosome).



## Idiograms of Human Chromosomes



## Autosomal DNA tests for Genealogy

23 and Me:

https://www.23andme.com/



23andMe

Explore your DNA with the largest DNA ancestry service in the world.

\$99

add a kit

With over 650,000 genotyped members, you'll experience more matches, more data, and more discoveries.

Ancestry DNA: http://dna.ancestry.com/



Family history is in our DNA. What's in yours?

Get personalized details about your ethnic origins. Discover more about your story with advanced DNA science from the experts in family history.

Now \$99

Get AncestryDNA



Family Tree DNA Best for https://www.familytreedna.com/



Genealogy History Ancestry Specifications

Autosomal

What you get

Price

Family Finder Matches

Ethnic Percentages

\$99 Learn More

## More Autosomal DNA tests for Genealogy



**○** MyHeritage **▷**N∧

# END OF SUMMER DNA SALE

Limited-time offer

Only \$59 \$79

Order now

Free shipping for orders of 2+ kits.



# Find out where you really come from

Living DNA is the world's most advanced DNA test, offering twice the detail of other ancestry tests.

\$99.00 + Delivery

Find out more

Order now

#### Why take a Living DNA test?



### Twice the detail of other ancestry tests

We give you your DNA mix across 80 world regions, including 21 in Britain and Ireland. You can also explore peer reviewed details of the areas of the world your ancestors are from.



#### 3-in-1 ancestry test

Our test not only covers your family line ancestry, but unlike other tests we also include your motherline, and your fatherline ancestry if you are male.



### View your ancestry through history

We put your ancestry into context showing your breakdown today (going back up to 10 generations), and also the spread of your ancestors at different points in history, showing how we are all connected.



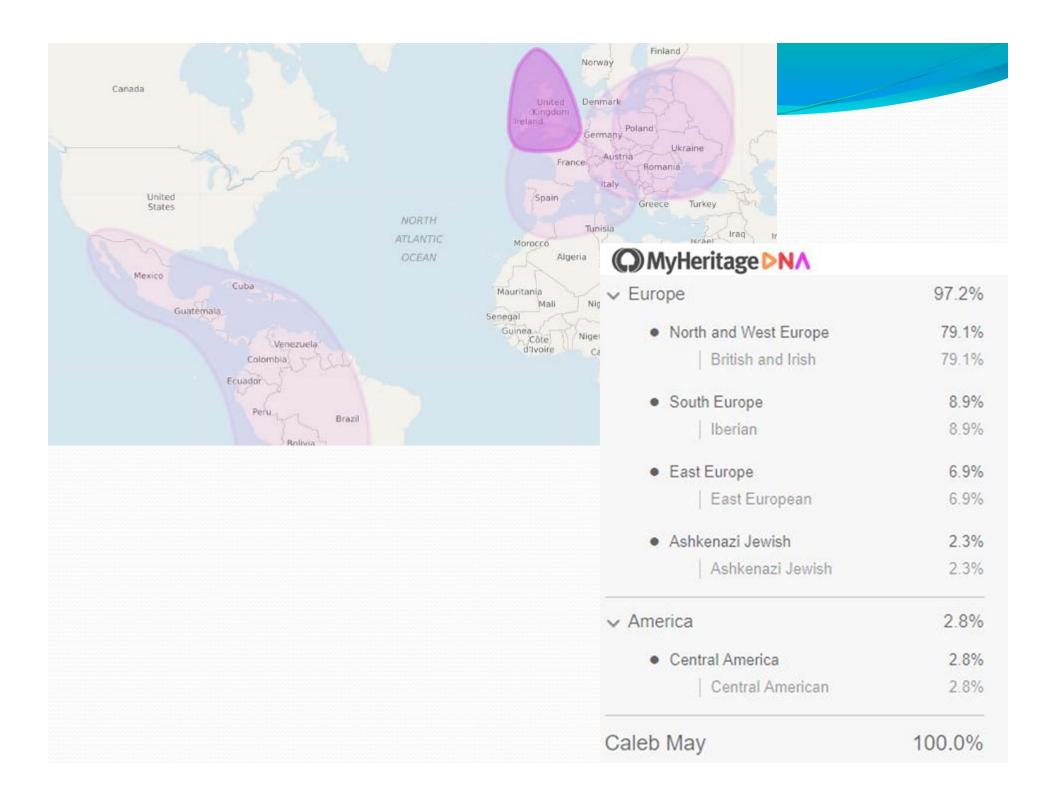
### Your ancestry results updated for free

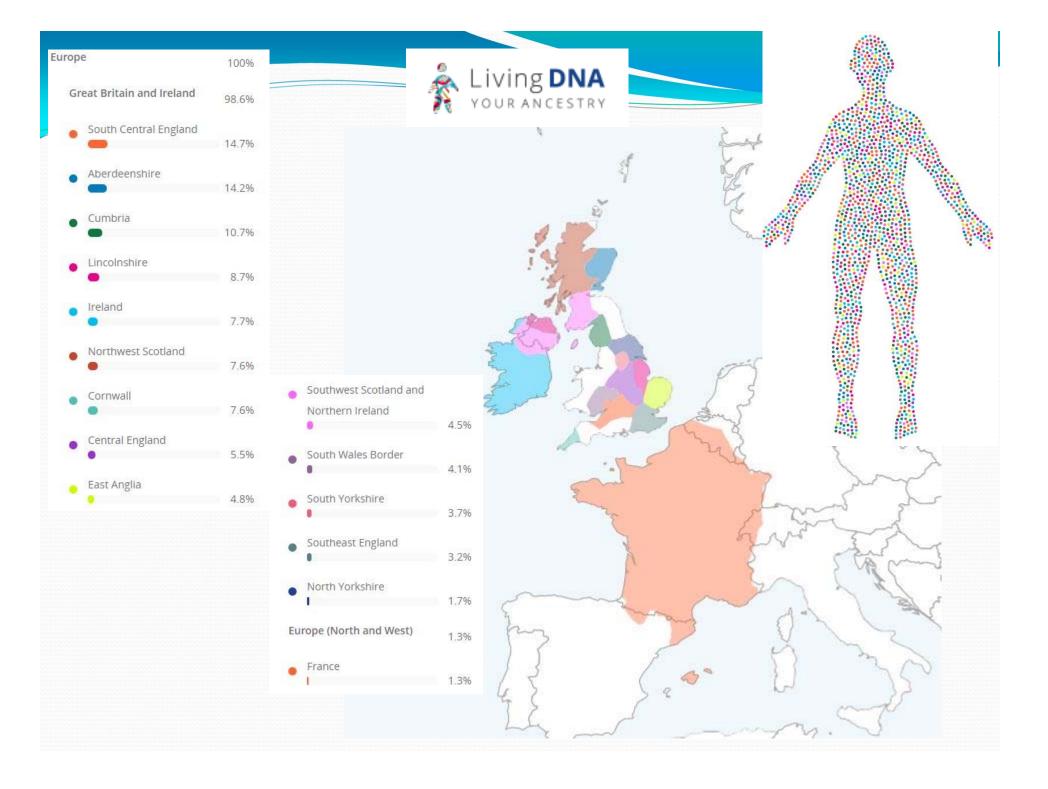
As science and our systems evolve, your results will be updated to provide on-going details about your ancestry.

### **Ethnic Estimates**

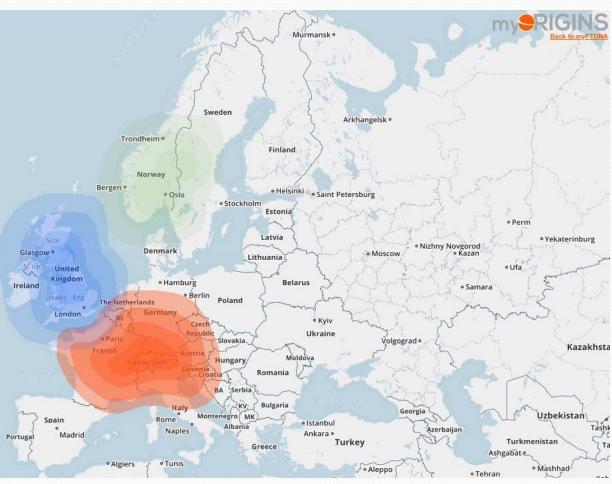
- Highly Inaccurate
- People are Constantly In Motion
- No such thing as "races"
- Genetic Recessive Traits
- Results vary widely from company to company based on Reference Panels
- Can Change over time as more data points are added











# **Ancestry DNA Ethnicity Estimate**



#### Discover your ethnicity

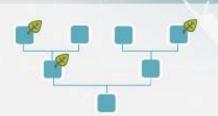
Find out if you're part Irish, Native American, or maybe Cameroonian.

**NEWLY UPDATED** 



#### Connect with new relatives

Imagine meeting a 3rd cousin for the 1st time.

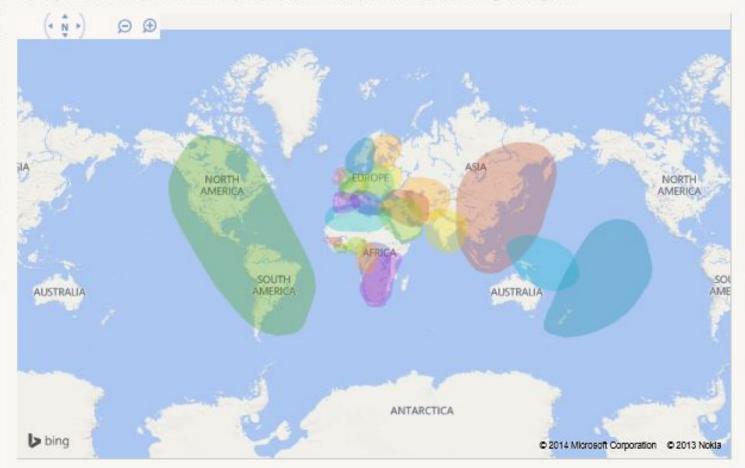


#### Family history is in our DNA

Even more powerful when combined with Ancestry.com.

#### How the ethnicity estimates are determined

We create estimates for your genetic ethnicity by comparing your DNA to the DNA of other people who are native to a region. The AncestryDNA reference panel (version 2.0) contains 3,000 DNA samples from people in 26 global regions.

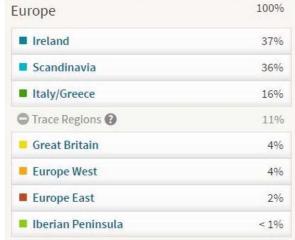


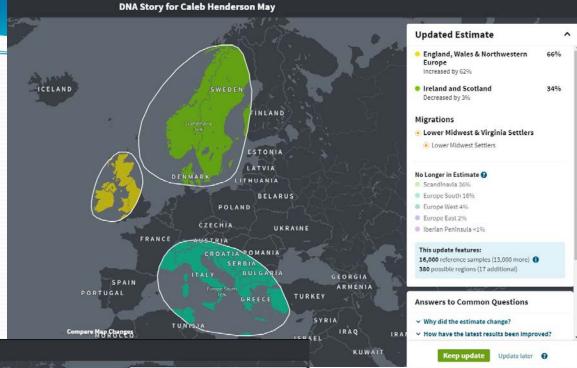
We build the reference panel from a larger reference collection of 4,245 DNA samples collected from people whose genealogy suggests they are native to one region. The images below show the process of gathering local samples from various parts of the world.

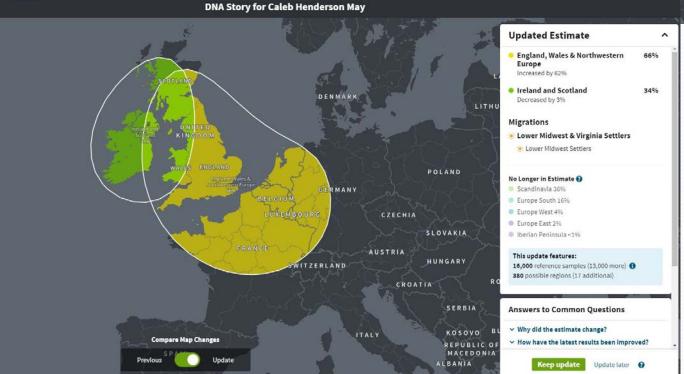
**Updated to:** 

16,000 DNA Samples 380 Global Regions











One family's genealogy is written on a stone in Mongolia



Interviewing volunteers in Mongolia



Our team meets volunteers in Mexico



Volunteers from Morocco



A man from Mali prepares to give a DNA sample

Each volunteer's DNA sample from a given region is then tested and compared to all others to construct the AncestryDNA reference panel. In the end, 3,000 of 4,245 individuals are chosen for the <u>AncestryDNA reference panel (version 2.0)</u>. These individuals make up 26 global regions.

#### We compare your DNA to the reference panel

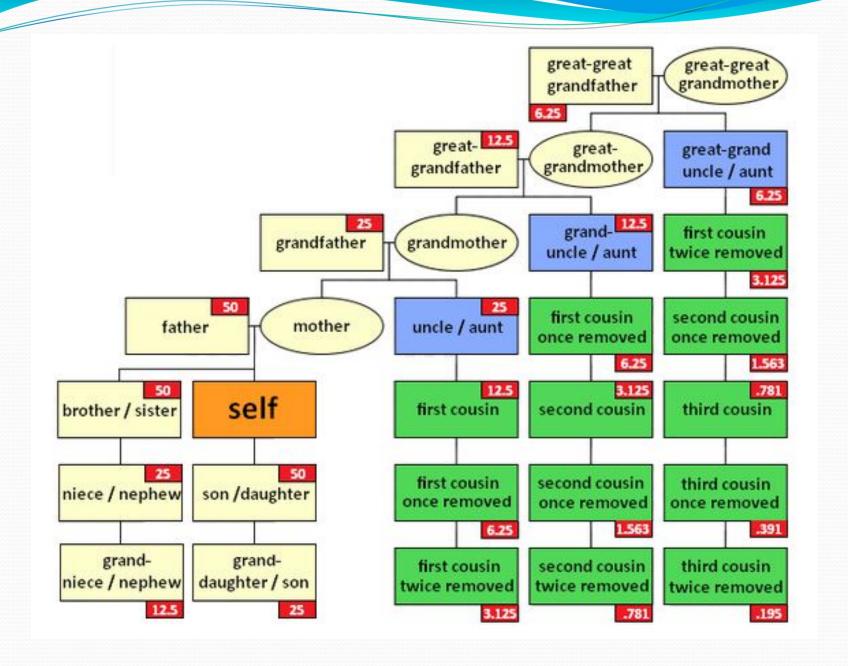
We then compare your DNA to the DNA in the reference panel to see which regions your DNA is most like. The ethnicity estimate you see on the web site is the result of this comparison. When we calculate your estimate for each ethnicity region, we run forty separate analyses. Each of the forty analyses gives an independent estimate of your ethnicity, and each one is done with randomly selected portions of your DNA. Your genetic ethnicity estimates and likely ranges for these estimates come from these forty analyses (

| Learn more about how we create the range for each estimate).

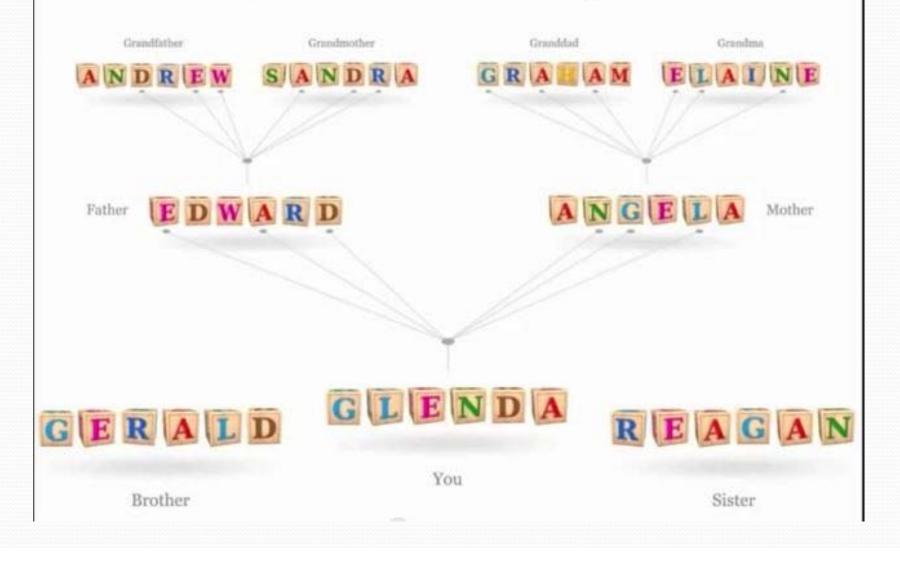
# How much of my unique DNA "code" is shared with my relatives?

The following percentages show how much DNA is shared with different family members.

- 50% mother, father and siblings
- 25% grandfathers, grandmothers, aunts, uncles, half-siblings, double first cousins
- 12.5% first cousins
- 6.25% first cousins once removed
- 3.125% second cousins, first cousins twice removed
- 0.781% third cousins



# AncestryDNA—Ethnicity Estimate



## Scrabble Letters Experiment



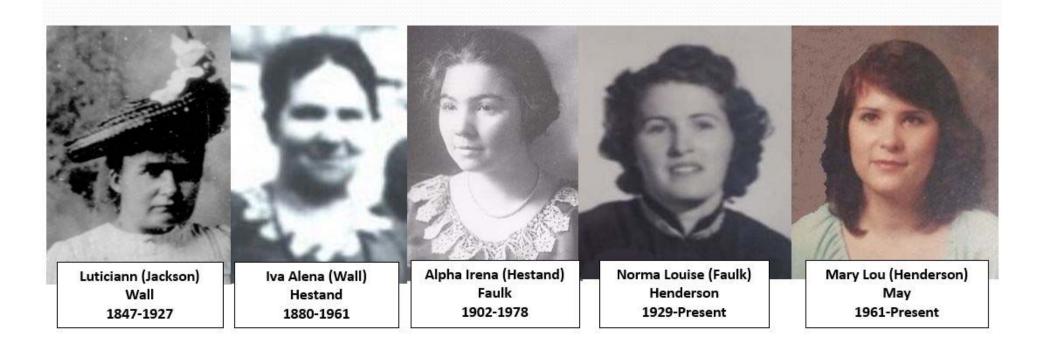
# Mitochondrial DNA

Mitochondrial DNA (mtDNA or mDNA) is the DNA located in mitochondria, cellular organelles within eukaryotic cells that convert chemical energy from food into a form that cells can use, adenosine triphosphate (ATP).



Nuclear DNA
(nuDNA) is found
in the cell nucleus
and contains genetic
material from
both parents.

Offspring Cell



# mtDNA Haplogroup H39a1



#### Haplogroup - H39a1

#### Your Origin



Mitochondrial haplogroup H is a predominantly European haplogroup that originated outside of Europe before the last glacial maximum (LGM). It first expanded in the northern Near East and southern Caucasus between 33,000 and 26,000 years ago, and later migrations from Iberia suggest it reached Europe before the LGM. It has also spread to Siberia and Inner Asia. Today, about 40% of all mitochondrial lineages in Europe are classified as haplogroup H.

USAGE POLICY: Use of the above Haplogroup description requires written permission from Gene by Gene.

#### Your Results

RSRS Values

rCRS Values

Extra Mutations C146T C152T 309.1C 309.2C 315.1C 522.1A 522.2C C13695g C16189T

Missing Mutations

	HVR1 DIFFERENCES FROM RSRS										
A16129G	C16169T	T16187C	C16189T	T16223C	G16230A	T16278C					
A16299G	C16311T										

		HVR2 DIF	FERENCES	FROM RSRS		
G73A	C146T	C152T	C195T	A247G	309.1C	309.2C
315.1C	522.1A	522.2C				

	cor	OING REGIO	N DIFFERE	NCES FROM	RSRS	
G709A	A769G	A825t	A1018G	G2706A	A2758G	C2885T
T3594C	G4104A	T4312C	T7028C	G7146A	T7256C	A7521G
T8468C	T8655C	G8701A	C9540T	G10398A	T10664C	A10688G
C10810T	C10873T	C10915T	A11719G	A11914G	T12705C	G13105A
G13276A	T13506C	T13650C	C13695g	C14553T	T14766C	





Name		Most Distant Ancestor	mtDNA Haplogroup	Match Date
Mary Lynn Sanders	♠ ₩ HVR2		Н	4/12/2016
Michael Ray Tutor		Anna Caroline Wegwerth	Н	12/10/2015
Karen Diane Portzer	<u>@</u> <b>EMS</b> FF	Margarget Keown, b. 1800	H39a1	12/10/2015
Ms. Karen Margaret Rohan	FMS FF		H39a1	12/10/2015
Cheri Marie Whitehouse (Abella)	<u> </u>	Brita Chrismansson (fodd Nilsdotter) b. 1746	H39a1	12/10/2015
Dr. Roger Dennis lennings	△ M HVR2	Nancy Ann Dickey	Н	12/10/2015

### **Y DNA**

The Y chromosome is transmitted from father to son. Testing the Y chromosome provides information about the direct male line. The locations tested on the Y chromosome are called markers.

Occasionally a mutation occurs at one of the markers in the Y chromosome. Mutations are simply small changes in the DNA sequence. They are natural occurrences and take place at random intervals. Overall, they are estimated to occur once every 500 generations per marker. Mutations can sometimes be valuable in identifying branches of a family tree.

# Family Tree DNA - YDNA-67 Test Results for Eli W. May

PANEL 1 (1-12)											
Marker	DY\$393	DY\$390	DYS19**	DY\$391	DY\$385	DY \$426	DY\$388	DY \$439	DY \$3891	DY\$392	DY \$38911***
Value	13	23	14	11	11-14	12	12	13	14	12	30

PANEL 2 (13-25)									
Marker	DY\$458	DY\$459	DY\$455	DY \$454	DY \$447	DY\$437	DY \$448	DY\$449	DY\$464
Value	20	9-9	11	11	24	15	19	30	15-16-17-18

PANEL 3 (26-37)										
Marker	DY\$460	Y-GATA-H4	YCAII	DY\$456	DY\$607	DY\$576	DYS570	CDY	DYS442	DY\$438
Value	11	10	19-23	17	15	18	17	38-37	13	12

PANEL 4 (38-47)									
Marker	DY\$531	DYS578	DYF395\$1	DY\$590	DY \$537	DYS641	DY\$472	DYF406S1	DYS511
Value	11	9	15-18	8	10	10	8	10	10

ANEL 4 (48-60)												
Marker	DY\$425	DY\$413	DY \$557	DY \$594	DY\$436	DY\$490	DY\$534	DY \$450	DY\$444	DY\$481	DY\$520	DY\$446
Value	12	23-23	16	10	12	12	16	8	11	22	20	13

PANEL 4 (61-67)							
Marker	DY\$617	DY\$568	DY\$487	DY\$572	DYS640	DY\$492	DY\$565
Value	12	11	13	11	11	13	12

#### Enter any combination of one or more Area Selection Reset markers, or use the string entry form below Northwest Europe ∨ 390 19 391 385a 385b 426 388 393 13 🗸 23 🗸 14 🗸 11 🗸 11 🗸 14 🗸 12 🗸 12 🗸 439 389|1 392 38912 458 459a 459b 455 14 🗸 20 🗸 9 🗸 13 🗸 12 🗸 30 🗸 9 11 🗸 V 454 447 437 448 449 464a 464b 464c 11 🗸 24 🗸 15 🗸 19 🗸 30 🗸 15 🗸 16 🗸 17 🗸 464d 460 H4 YCAIIa YCAIIb 456 607 576 18 🗸 11 🗸 10 🗸 19 🗸 23 🗸 17 🗸 15 🗸 18 🗸 570 CDYa CDYb 442 438 531 578 395a 36 🗸 37 🗸 12 🗸 9 15 🗸 17 V 13 🗸 11 🗸 V 590 537 641 472 406 511 425 395b 8 🗸 10 🗸 16 🗸 8 ~ 10 ~ 10 ~ 10 🗸 12 🗸 413a 413b 557 594 436 490 534 450 23 🗸 16 🗸 10 ~ 12 🗸 12 🗸 16 V 23 🗸 8 V 444 481 520 446 617 568 487 572 20 🗸 11 🗸 11 🗸 11 V 22 🗸 13 🗸 12 🗸 13 🗸 640 492 565 461 462 A10 635C4 1B07 12 💙 11 V 13 🗸 ~ 0 ~ 0 0 V 0 V 445 452 495 505 508 441 463 485 0 ~ 0 0 0 V 0 4 0 ~ V 0 V 0 V 522 532 533 540 556 643 0 4 0 V 0 ~ 0 4 0 ~ V

#### Results Table

Haplo- group	Fitness score	Proba- bility (%)
C3	7	0.0
E1a	4	0.0
E1b1a	15	0.0
E1b1b	18	0.0
G1	7	0.0
G2a	13	0.0
G2c	1	0.0
Н	3	0.0
I1	8	0.0
I2a (xI2a1)	15	0.0
I2a1	6	0.0
I2b (xI2b1)	4	0.0
I2b1	11	0.0
J1	16	0.0
J2a4b	9	0.0
J2a4h	4	0.0
J2a4 (x bh)	15	0.0
J2b	8	0.0
L	17	0.0
N	8	0.0
O2	6	0.0
O3	9	0.0
Q	41	0.0
R1a	15	0.0
R1b	68	100.0
R2	22	0.0
T	20	0.0

### Eli's Results imported to Ancestry DNA



Y-GATA-H4

Ancient ancestry:The Artisans Haplogroup:R1b1b2

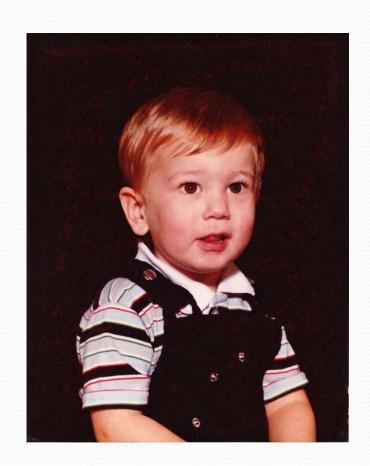
You belong to haplogroup R1b, The Artisans, who first arrived in Europe from west Asia about 35,000- 40,000 years ago at the dawning of the Aurignacian culture. This cultural was remarkable for its subtle yet significant technological progress, like the shift from random flint collection to the...

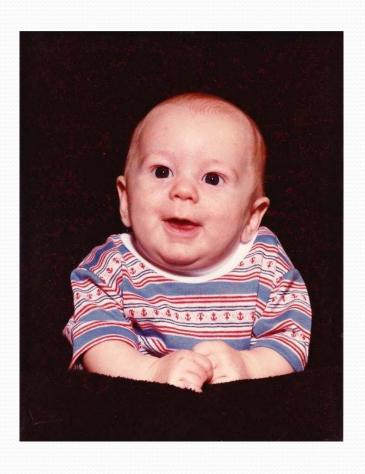
Learn more

DYS19a	DYS19b	DYS385a	DYS385b	DYS388	DYS3891	DYS38911	DYS390	DYS391
14	(4)	11	14	12	14	30	23	11
DYS392	DYS393	DYS426	DYS437	DYS438	DYS439	DYS441	DYS442	DYS444
12	13	12	15	12	13	-	13	11
DYS445	DYS446	DYS447	DYS448	DYS449	DYS452	DYS454	DYS455	DYS456
8	13	24	19	30	•	11	11	17
DYS458	DYS459a	DYS459b	DYS460	DYS461	DYS462	DYS463	DYS464a	DYS464
20	9	9	11	-	-		15	16
DYS464c	DYS464d	DYS464e	DYS464f	GGAAT1807	YCAIIa	YCAIIb	Y-GATA-A10	DYS635
17	18	-		-	19	23		-

## Y-Chromosome Haplogroup R1b1b2 or

R-M269





# Match Distribution on the Map for R-M269

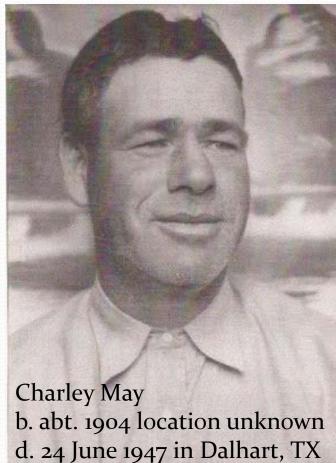


Notice the high density of "relatives" in The British Isles

# A Brick Wall in the Family Tree









### **Timeline**

- Charley May somehow separated from his parents circa. 1907
- Charley May always wondered who his parents were 1907-1947 (40 years)
- Charley May's son and daughters conduct extensive research to no avail – 1947-2009 (62 years)



Floyd E. May & Barbara L. (Wilson)

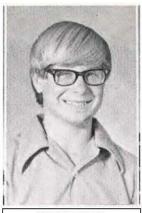
#### Their Kids



Barbara "Barbie" May 1<sup>st</sup> Grade



Arlyn L "Frog" May 6<sup>th</sup> Grade



Charlie W May HS Freshman

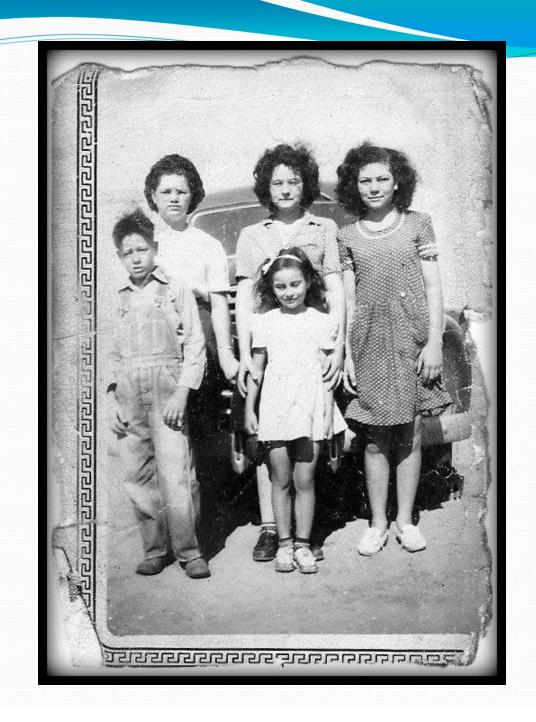
Floyd E & Barbara L May Children Boise City, Oklahoma Schools 1973



Blyn E May 8<sup>th</sup> Grade

#### Timeline cont.

- Eli May (a great-grandson of Charley) receives results from a Y-DNA test from Family Tree DNA 16 June 2010
- Three people match with Eli's results and one match with a Charles May, Jr. results in a collaboration with Charles's nephew, Don Gulledge, but all leads seem to grow cold—the common ancestor is too far in the past to solve the mystery.
- Caleb May (a great-grandson of Charley and brother of Eli) receives Autosomal DNA results from a test with Ancestry DNA - 13 Feb 2014
- Caleb begins examining scores of matches to see if they appear to be related to documented branches of the family tree February 2014-July 2014.
- A new strategy is developed to expedite progress in narrowing down useful matches whereby Caleb's three living grandparents as well as the sister of his deceased grandfather are tested with Ancestry DNA – July 2014
- After two unsuccessful attempts, the last of Caleb's three living grandparent's test results finally come in 21 Nov 2014
- Caleb works to sort through his matches by seeing which ones match which grandparent – December 2014



#### Timeline cont.

- DNA cousins of Caleb's Great-Aunt Rosetta (a.k.a. Chit-Chee) were discovered (jaymie Frederick through GEDmatch.com and deannak\_73 on Ancestry DNA) November/December 2014
- It is discovered that both jaymie Frederick and deannak\_73 are descended from Mays in the South West Missouri County of Barry December 2014/January 2015
- Eli makes contact with the admin. of a FB group dedicated to researching some inter-connected families in Barry Co., MO and is referred to another group that has a post from a Mary Homesley detailing the fact that her father, Daniel Morgan May, had a younger brother named Charles that went "missing" in the early years after the turn of the 20<sup>th</sup> century March 2015
- Caleb puts Daniel Morgan May's parents, James Harrison May and Mary Emaline (Keele) in his Ancestry.com family tree and all of the DNA matches connect perfectly on both sides of that family.



# Eli May

February 23, 2015

Hello! My name is Eli Wilson May and I'm pretty sure I'm descended from Riley May possibly through John Russel May b. September 20, 1885 in Barry Co. MO. I'm trying to get more info and Joy Guentert thought this group might be helpful. Let me know if you have more info that can clarify the holes in my family history.



2

23 Comments Seen by 96





Comment

# A 108 year family mystery solved through DNA



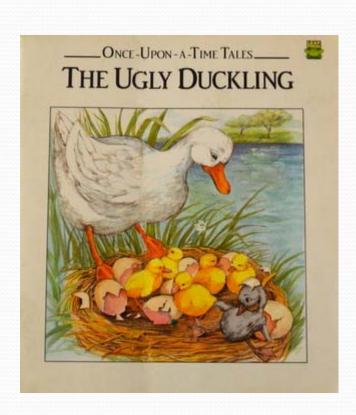


Brothers who never met
Charley May Daniel Morgan May



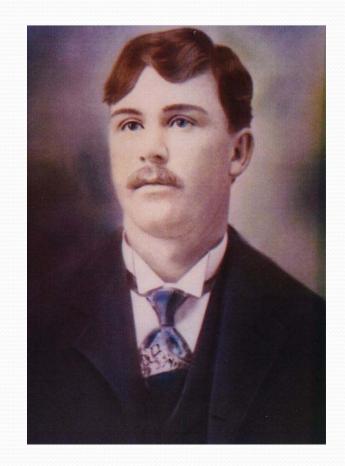
Ancestry DNA – A Case Study Subject: Caleb Henderson May

# A Surprise In the Tree...



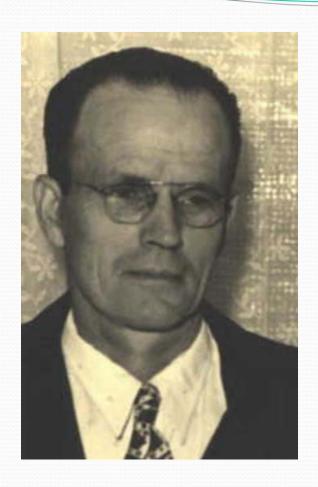


Married 28 Oct 1902 In Valley Falls, Jefferson County, Kansas



Jessie Jane Stuart 28 Apr 1886 – 14 Aug 1960

Milo E. Faulk 2 Apr 1878 – 22 May 1966



Charley Allen Faulk, Sr. 27 Feb 1903 – 26 May 1980 (b. 4 mo. After parents' wedding)



Grandma Norma (Faulk) Henderson's AncestryDNA Resutls Posted August 17, 2014

### Signs of a Problem



#### abbielou60

Aug 09, 2016

HI, My father Ira Dell Faulk was left in an italian orphanage in Kansas City, Mo. He was born in 1906 and is on the 1910 census in the orphanage in Kansas, he was adopted by James Harvey Graham and his wife Nancy Jane Kathaleen Elizabeth Byers Graham around 1911, I took the Ancestry DNA test They sent me the name of Anne Dickerdoff and william r. faulk and anne elizabeth faulk as relations, so far have not been able to make the connection, Belldora would have been 51 at his birth which is not impossible, can you help? I live in Independence, Mo. just across the highway from Kansas city, Mo.

missouri will not release adoption records and the orphanage does not any longer have any records from that period. All help truly appreciated. thanks Abbie also my dad names my brothers william and richard, my mom said they were from his side of them family, both of my parents passed long ago, I own a genealogy business named Branches Found.



#### calebhmay

Dec 10, 2016

My grandmother, Norma Louise (Faulk) Henderson, is a direct descendant of Anne Dickerhoof via William Faulk and Bella Dora (Myers) and I can't find you in her list of matches. Could you share your dna test with me so that I can further investigate?



Cousins Nadine (Faulk) Kelly and Norma (Faulk) Henderson

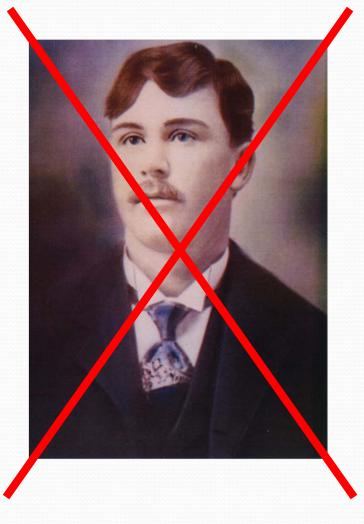


#### **Shared DNA with Norma Louise Henderson**

Predicted Relationship: 2nd Cousin

Amount of shared DNA is 482 centimorgans across 24 DNA segments

Half First Cousins – Sharing Grandmother, not Grandfather

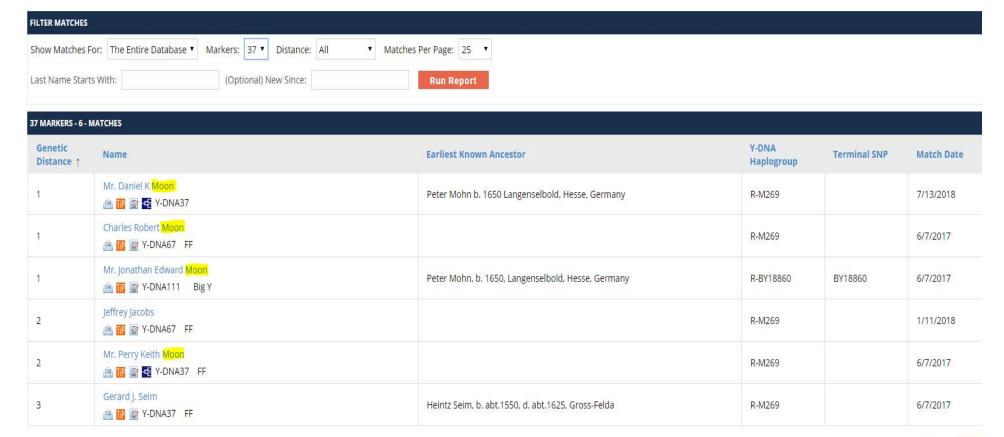


Milo Faulk was not Charley Faulk's Genetic Father



If We're Not Faulks, What Are We? Carl Faulk Submits a Y-DNA Sample to FTDNA April 27, 2017





Download: CSV

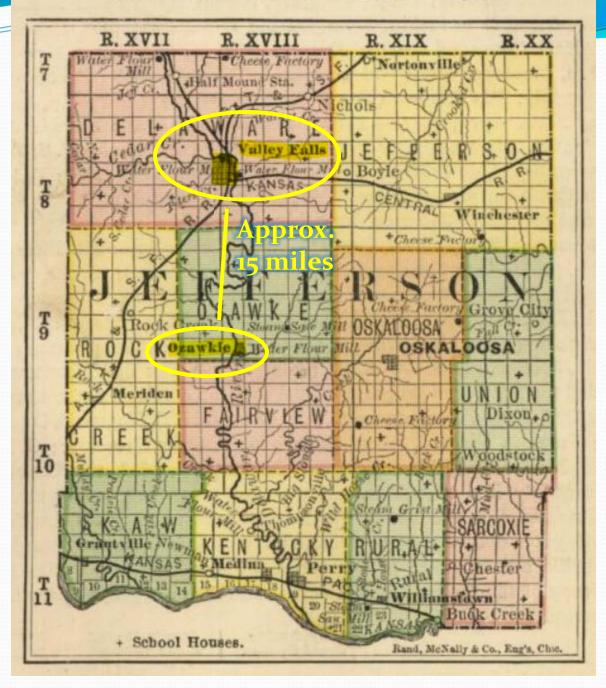


#### The 1895 Kansas Census Shows a Moon Family With Two Boys, Earnest B. (18) and Frederick (16) in Deleware Twp., Jefferson County

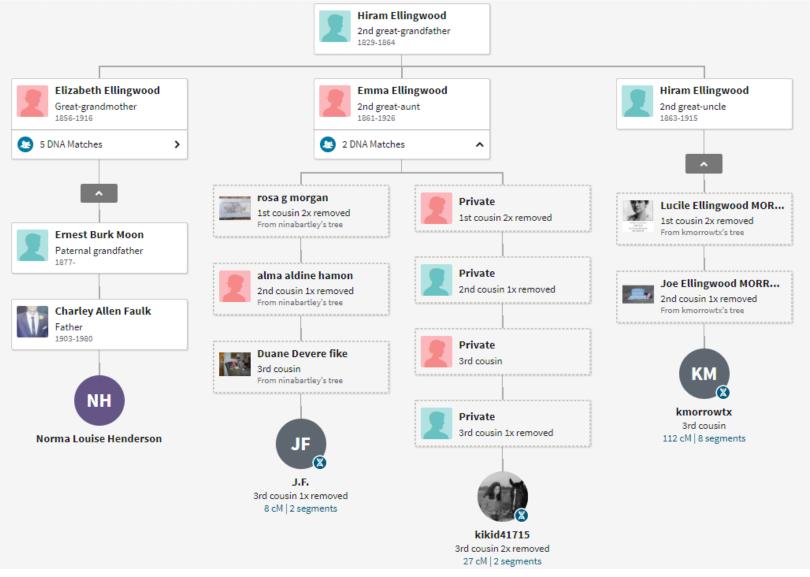
	Kansas State Census Collection, 18  1895 > Jefferson > Do		on		
8 3	o B. man	38	1114 1410	Indian	~ 5
1 2	Elyaleth	14 1	70		
3	Breds	11 3	7	alaman land	

# Jessie Jane Stuart (a.k.a. Jessee Stewart) (9) in the Household of Her Step-Father, Daniel A. Abbott in Ozawkie, Jefferson County, Kansas in the 1895 Census

60 -		Jefferson > Ozawkie	for Danie	el A Abbot	t variation	47.5
7	Daniel a abbo	on 8	TH.	."-	4001"	
79	Daniel a abbo	48	14.		Illinois	' 1
NO.	Mary C. "	40	d'		Lowa	-
3	Orta ".	- 13	M.	н	Rausa	9
43	Lucina "	1	0	11	-	Value 1
2	Frank "	3	m.	11		200 A
	Daniel a "	3	M.			
14.0	Lewis & Stew	vart 14	/K	Acres	11.	1
	Supple !!	7	0		3	100 miles



#### Additional Confirmation – Norma (Faulk) Henderson's DNA Shows a Connection to Fred and Earnest Moon's Mother



# Library Programs

# DNA Day

Attend multiple DNA workshops througout the day and learn how your genetics will help you in your genealogy research.

Saturday, September 30 10 am - 4 pm





GENERATIONS LANALYS S CHART S RECORDS

#### **Genealogy Workshops**

Gab with the Lunch Bunch, learn about Shakers in Kentucky, write your family history, and improve your DNA search results.

More Information »

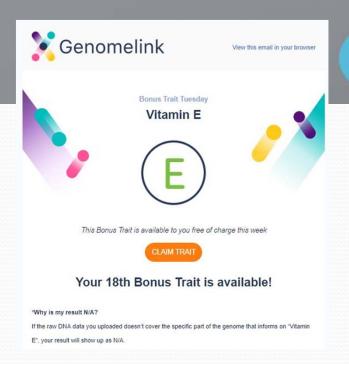


#### **GENOME LINK**

### Discover your genetic insights

Free additional analysis of your 23andMe, Ancestry.com or MyHeritage data

30 Trait Analysis - No Card Required



**GET STARTED** 

## **Useful Sites:**

www.promethease.com

www.gedmatch.com

www.dna.land

http://isogg.org/wiki/Genetics\_Glossary

https://genomelink.io/



# Questions?