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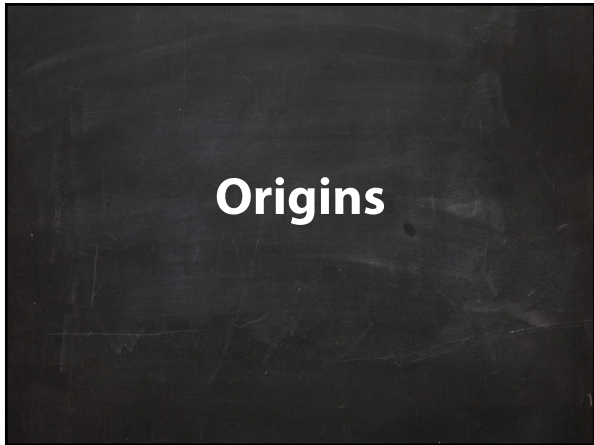
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**Examining the Census for Clues**

- FAN – Family, Associate, and Neighbors
- Are the birthplace of the parents in Scotland?
- Other immigrants in the same household from Scotland; relatives or associates

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### Church and Vital Records – Scotland, America, or Canada

- Research who the Witnesses are on baptism, and marriage records are in Church records



- Research who the "Informant" is on death records

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### Passenger Lists

- Notice who is immigrating together at the same time from the same village or country
- Are they people your ancestor knew in Scotland, or later became associates, neighbors, or family members in the United States?
- **Case Study:** Chain migration from Scotland

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### Case Study:

Oral Tradition disproven!  
Chain Migration from Scotland to America

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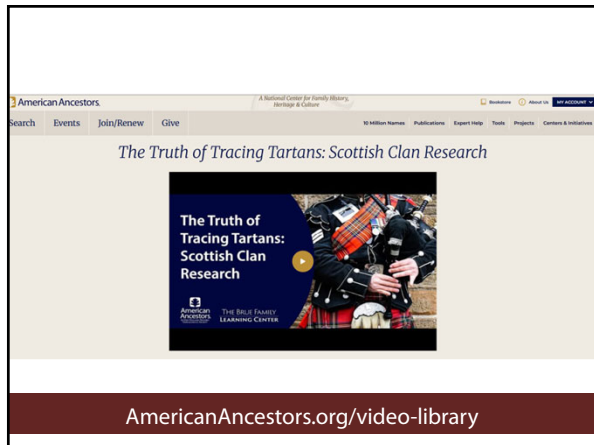
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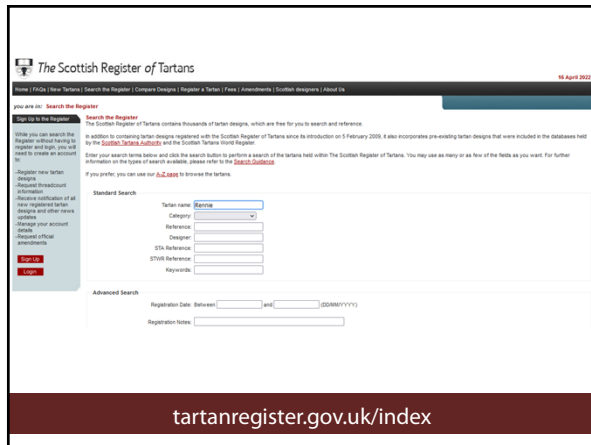
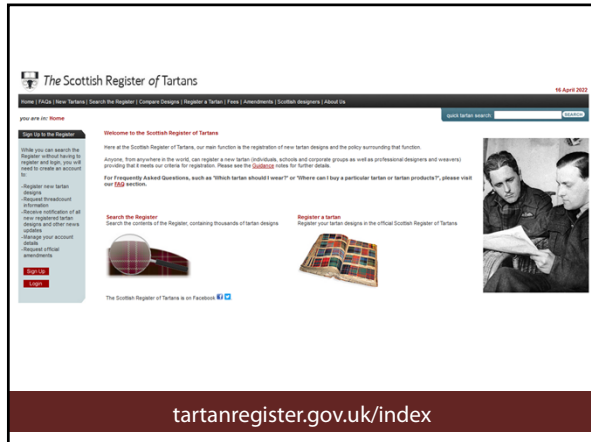
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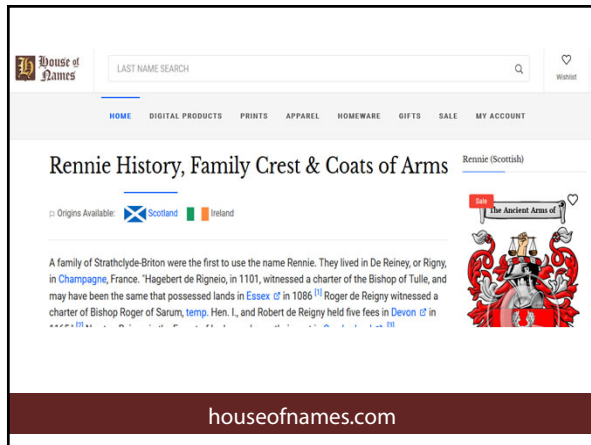
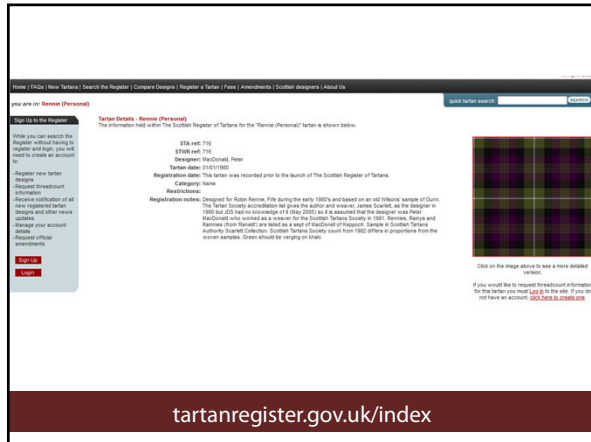
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**Court of the Lord Lyon  
King of Arms**

- In 1672 Scotland per the Act of the Scottish Parliament, the Lord Lyon King of Arms was authorized to keep a Public Register of all Arms and Bearings
- All coats of arms lawfully borne in Scotland were recorded with the Lord Lyon King of Arms
- <https://www.courtthelordlyon.scot/>

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*The Court of the Lord Lyon*  
Scotland's Heraldic Authority

**Coats of Arms**

**Petitioning for a Coat of Arms**

Any person who wishes to use Arms must petition for a Grant of Arms or - if they can trace their ancestry back to an ancestor with the same name who had a grant of Arms in Scotland - for a "matriculation" showing their place within the family. When a grant or matriculation is obtained, an illuminated parchment, narrating the pedigree as proved, is supplied to the Petitioner, and a recording is placed in the Public Register of All Arms and Bearings in Scotland.

**Letters Patent & Extracts of Matriculation**

Apart from the requirement that the petitioner should be, in terms of the Lyon King of Arms Act 1672, a "virtuous and well-deserving person", in general the governing factor in the case of an original Grant of Arms is the domicile of the petitioner or the ownership of property in Scotland. Does the petitioner have a Scottish domicile of origin? If not, has he acquired a Scottish domicile of choice? In cases where the petitioner's claim to fall within the jurisdiction of the Lord Lyon rests on the ownership of property the key question is whether the petitioner is able to reside on the land. A dwelling house of whatever size presents no problem, but the ownership of forestry land or



courtthelordlyon.scot

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**QUESTIONS?**




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# DNA and Scottish Origins

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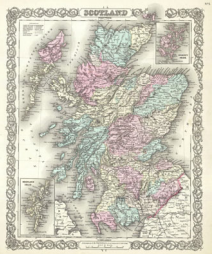
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### Using DNA to Determine Scottish Origins

- DNA testing companies
- Various types of DNA
- Ethnicity Estimates
- DNA matches



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### DNA Testing Companies



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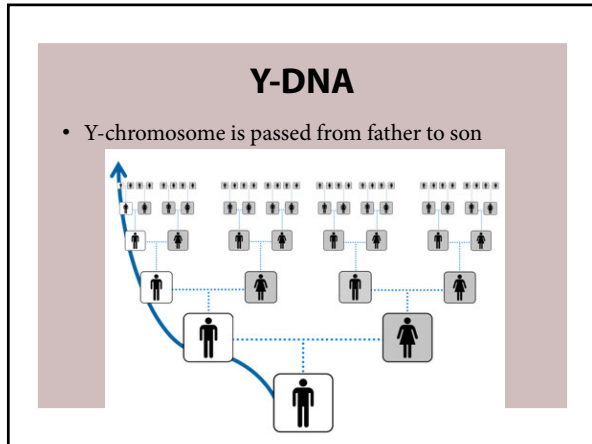
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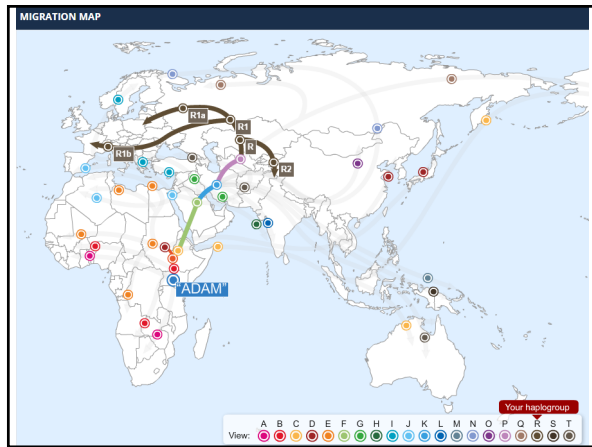
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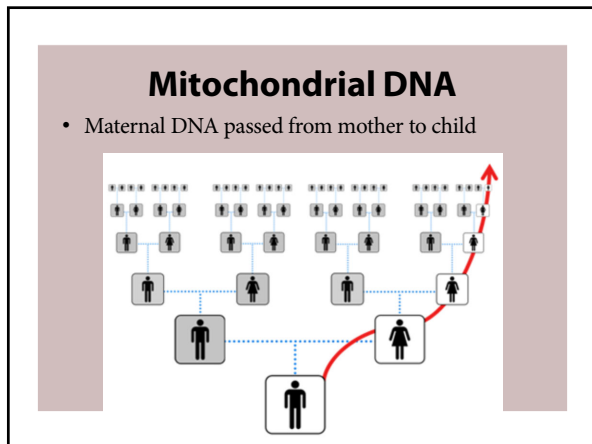
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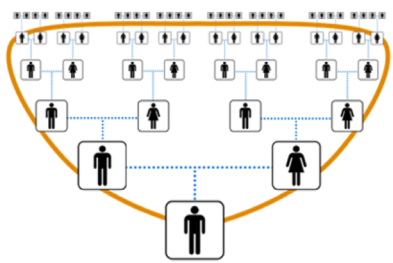
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### Autosomal DNA

- Inherited from all your ancestors within 5 or 6 generations



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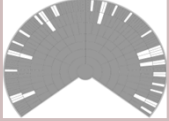
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### Genealogical vs. Genetic Tree

- Genealogical Tree includes all your ancestors
- Genetic Tree only includes the ancestors you inherited DNA from
- 100% probability of inheriting DNA from great-grandparent or 2G-grandparent
- 95% for 5G-grandparent
- <50% for 8G-grandparent
- 15% for 10G-grandparent



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## Ethnicity Estimates

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### Reference Panels

- DNA samples from populations in a specific area
- People with documented ancestry from the area
- Each company has different sets of samples



AncestryDNA's 77 overlapping regions

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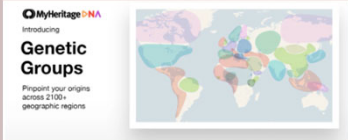
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### Which group are you in?

- Algorithms determine your assigned region
- May be put in a broader region
- Labels may be confusing



MyHeritage's 2,100+ overlapping regions

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### MyHeritage DNA Genetic Groups



**List of Genetic Groups**  
December 2020

North and West European	295	Chinese and Vietnamese	50	Ethiopian Jewish	4
English	254	Middle Eastern	36	Central Asian	3
Scandinavian	187	North African	25	Somali	3
Irish, Scottish, and Welsh	155	Ashkenazi Jewish	24	Thai and Cambodian	2
Berber	154	Filipino, Indonesian and Malay	20	Mongolian	1
Nigerian	147	Japanese and Korean	13	Inuit	1
Mesoamerican and Andean	146	Sephardic Jewish	11		
Italian	103	Polynesian	10		
Greek and South Italian	101	Yemenite Jewish	8		
West Asian	92	Mizrachi Jewish - Iranian/Iraqi	8		
East European	67	Baltic	7		
South Asian	64	West African	6		
Finnish	54	Kenyan	5		
Balkan	53	Sardinian	5		

Total of 2114

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### Ethnicity timeframes

- Usually about 500-1000 years ago
- Ancestry and 23andMe may be within 500 years

Your Ancestry Timeline

How many generations ago was your most recent ancestor for each population?

1	2	3	4	5	6	7	8	8+
1150	1120	1050	1000	1000	1000	1770	1740	1710

23andMe's Timeline by Generation

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### AncestryDNA

We compare your DNA against a worldwide reference panel to see which populations your DNA looks most like.

[How do we calculate this?](#)

England & Northwestern Europe	44%
Scotland	31%
Ireland	16%
Norway	6%
Sweden & Denmark	3%

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### AncestryDNA

Scotland

Primarily located in: Scotland

Surprised by your Scotland result? Learn more about this map and ethnicity

31%

Your ethnicity estimate is 31%, but it can range from 12-33%

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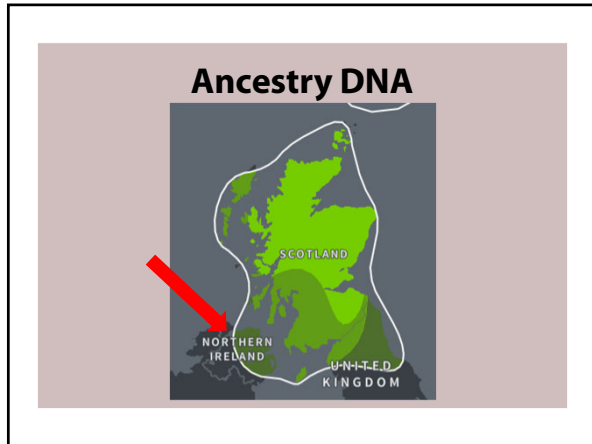
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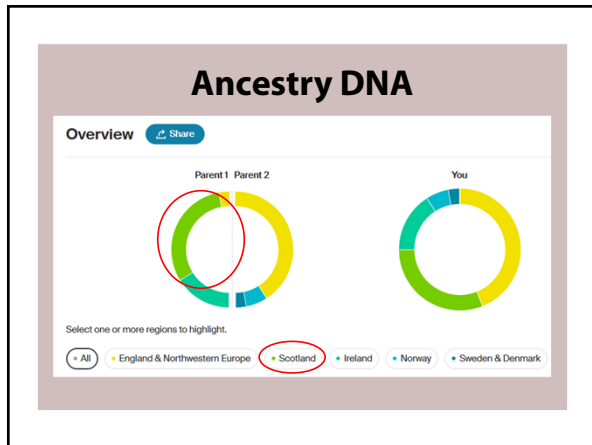
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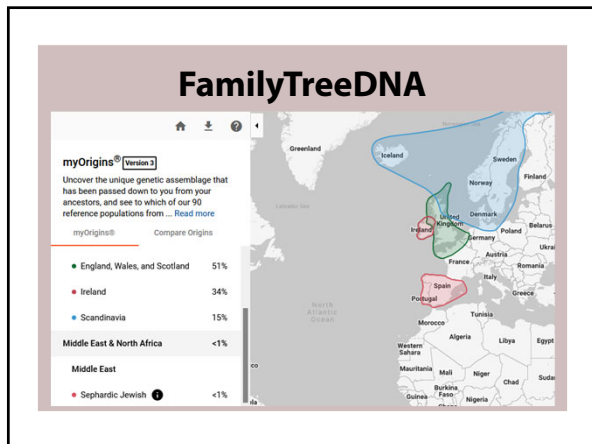
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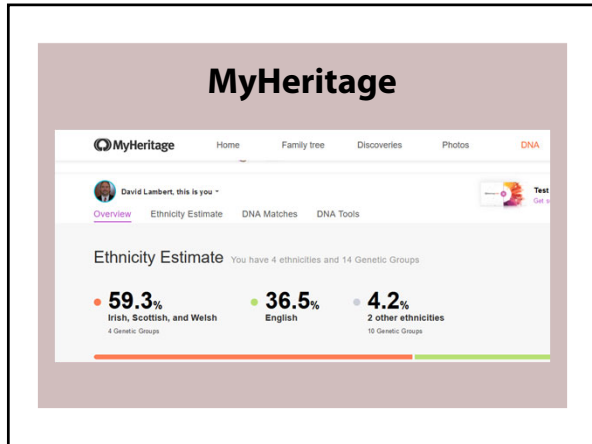
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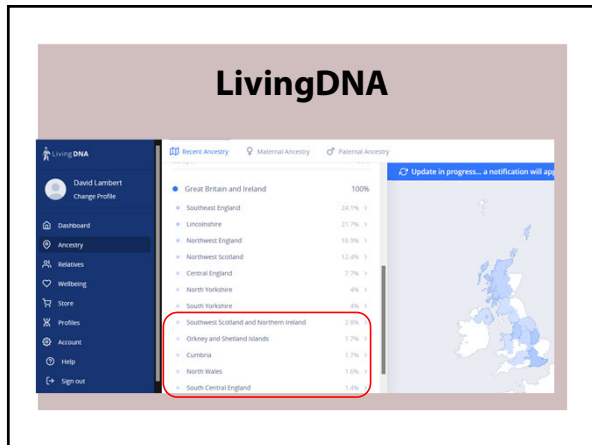
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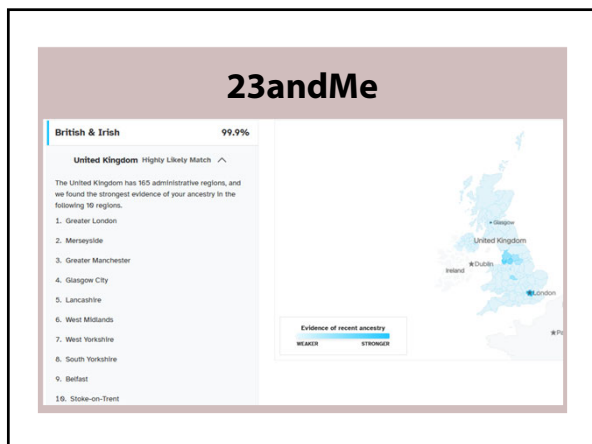
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### Ethnicity Estimate takeaways

- Results differ across companies due to
  - Reference Panels
  - Algorithms and reporting timeframes
- Can point to areas of recent ancestry
- Misleading if broad or more distant regions
- May change over time

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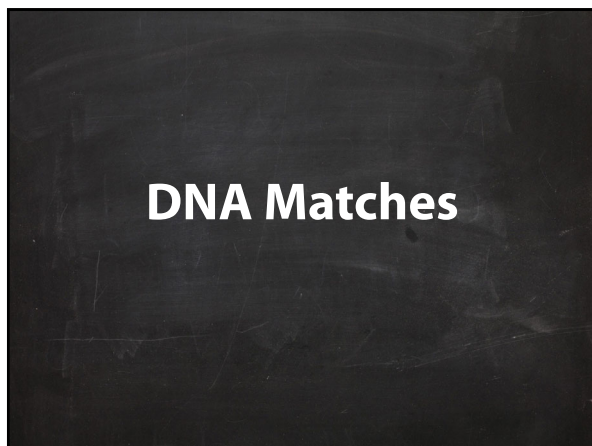
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**How can DNA help?**

- Underutilized in Scottish research
- Find distant relatives to broaden family tree
- Can help determine:
  - Parents names and origins
  - New perspectives
  - Test/prove hypotheses not found in records
- Can't be used alone

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**Your Family Tree**

- Must include all your earliest known ancestors
- Include dates and locations for all births, marriages and deaths
- Provide locations where family lived or moved to
- Include all children or siblings in each generation
- May want to include hypothetical relations
- Scottish naming conventions might be useful

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**Scottish Naming Convention**

- 1st son named after father's father
- 2nd son named after mother's father
- 3rd son named after father
- 1st daughter named after mother's mother
- 2nd daughter named after father's mother
- 3rd daughter named after mother

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**Tip**

Your well researched tree will help you find clues and commonalities in your match's tree

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**Working with your Matches**

- Look for people or surnames in common
- Look for locations in common
- Ask questions and be patient for answers
- Work together and share information
- Always confirm with genealogical records
- May need to build out your match's tree and find more information

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**Finding clues in ThruLines**

The screenshot shows a ThruLines interface. At the top, it identifies 'Gibson Rennie' as the '3rd great-grandfather'. Below this, a tree structure is shown. On the left, a node for 'David Gibson Rennie' (1875-1920) is highlighted with a green box and labeled 'MATCH'. This node is connected to a 'DB' node (1891-1924) with a note 'Half Bro. cousin 2x removed | 10 cM | 1 segment'. On the right, a node for 'John Duncan Rennie' (1854-1902) is shown, connected to a '2 DNA Matches' section. This section lists 'David Rennie' (1850-1918) and 'Nancy Ann Rennie' (1850-2004). At the bottom of this branch is an 'AL' node (1850-2004).

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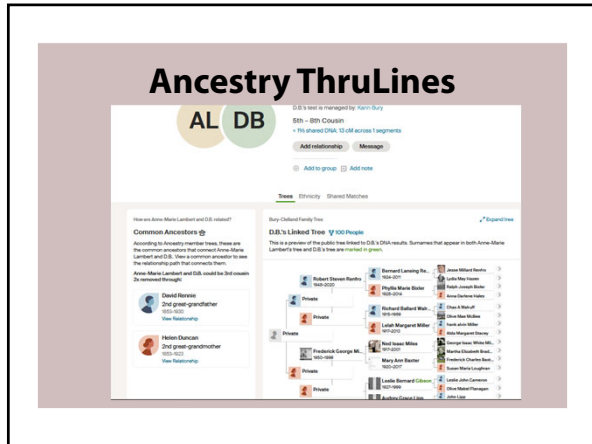
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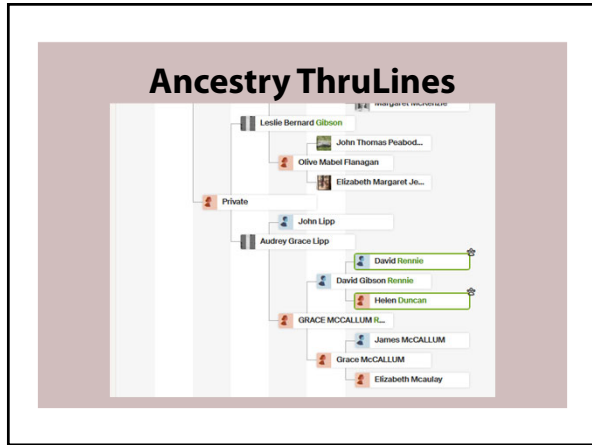
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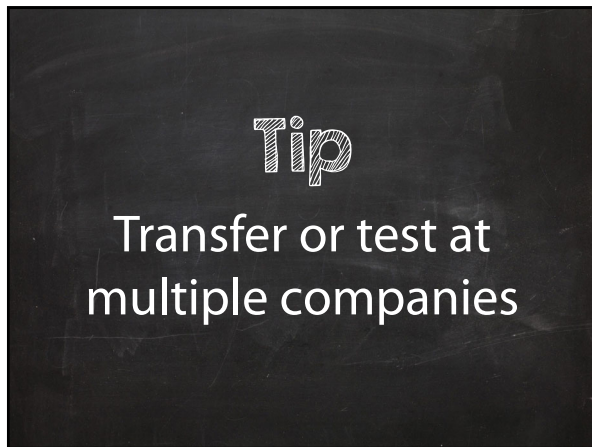
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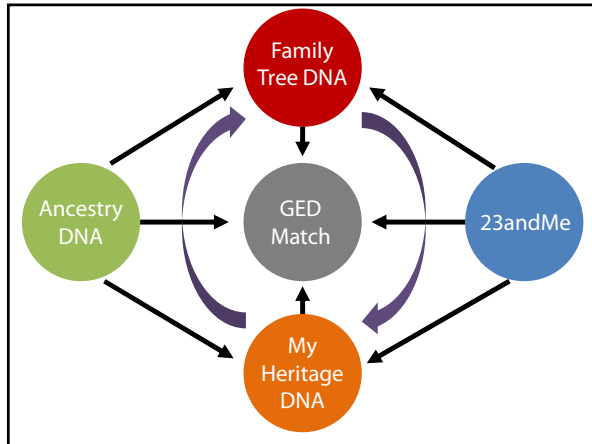
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## GEDmatch

- Free Research Tools
- Create an Account
- Download Your Raw DNA
- Upload to GEDmatch




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**DNA PAINTER** Tools Help Subscribe

### The Shared cM Project 4.0 tool v4

Read more about the tool and this update

**March 2020**  
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 26th March 2020

**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**  
Data with updated probabilities  
With editable boxes  
Shared cM 3.0 (2017) version

**Filter**  
Enter the total number of cM for your match here:  
13  
or enter %  
reset

**How to read this chart**  
Relationship Average Range (low to high; 50th percentile)

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

**Most distant common ancestors**  
A match of 13cM has a wide range of possible relationships. The connection may be with the 5th-Grand-Grandparent level, but the common ancestors could also be 20 or more generations back.

**Relationship probabilities (based on stats from The DNA Geeks)**  
View these relationships in a tree

<b>61%</b>	6C 6C1R 6C 6C2R 4C1R 5C1R 7C Half 3C2R 4C2R 5C2R 7C1R 3C3R 4C3R 5C3R 6C or more distant
<b>15%</b>	Half 3C 3C1R Half 2C2R 2C3R
<b>15%</b>	4C Half 3C1R 3C2R
<b>7%</b>	3C Half 2C1R 2C2R Half 1C3R
<b>0.90%</b>	1C3R † 2C1R † Half 1C2R † Half 2C

dnainter.com/tools/sharedcmv4

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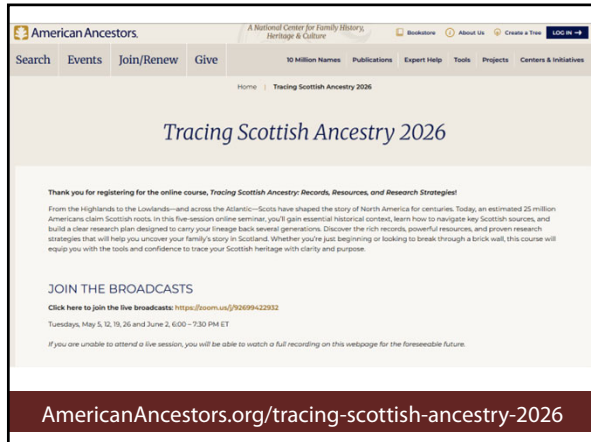
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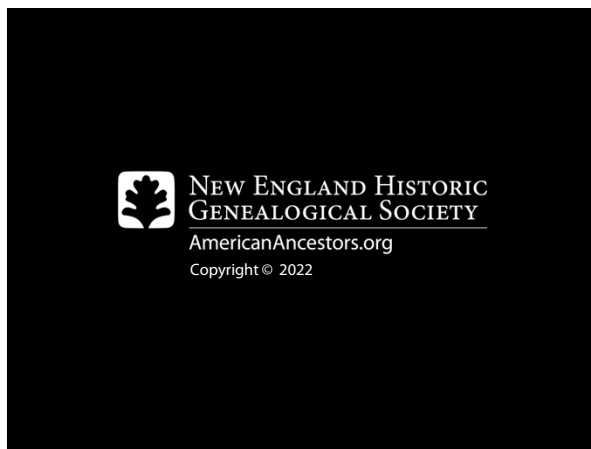
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