DNA Relational Diagrams

Ken Waters

Nov 12, 2022

Mesa Red Mountain Library

Queen Elizabeth
Barcelona, Spain
August 17, 2022

A Special Caveat

- I will attempt to give this presentation both live and via Zoom with a recorded session

- This is the first time I've tried this --- hopefully all will go well

- Because of this dual presentation mode I won't be able to monitor for any questions in the chat or live

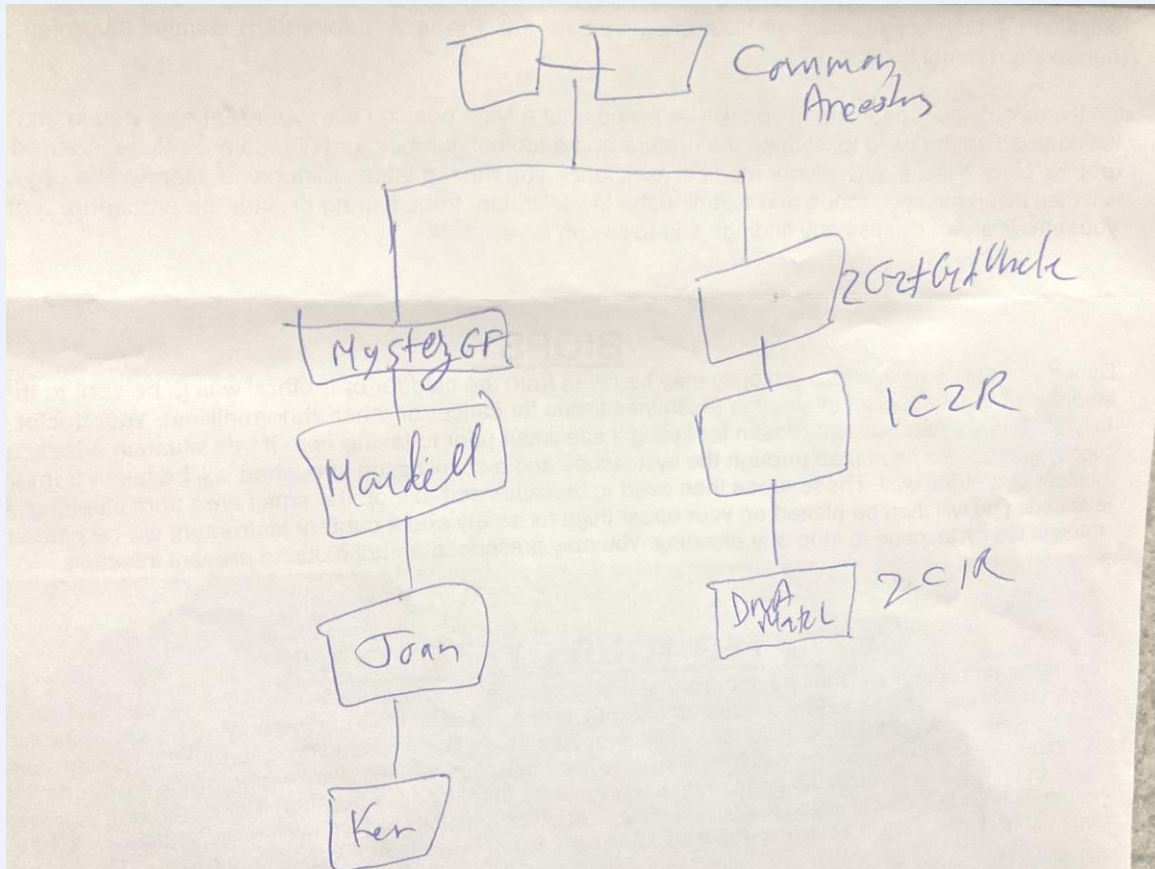- I'll be happy to answer questions at the end!

All slides and handouts can be found at:
http://www.familytreeaz.com/Presentations/

Motivation

- We've all done the drawing out of a family tree on paper, right?

This can quickly get out of control such as you discover you need to add another branch or you now want to add centimorgan strength values.

And....it looks like a mess!

What is a DNA Relational Diagram?

- A diagram showing a single family line where the lowest entry in each sub-line is a DNA test taker

- Lowest element in each line is a DNA match

- Creates a nice presentable visual depiction of all (known) DNA matches on a line
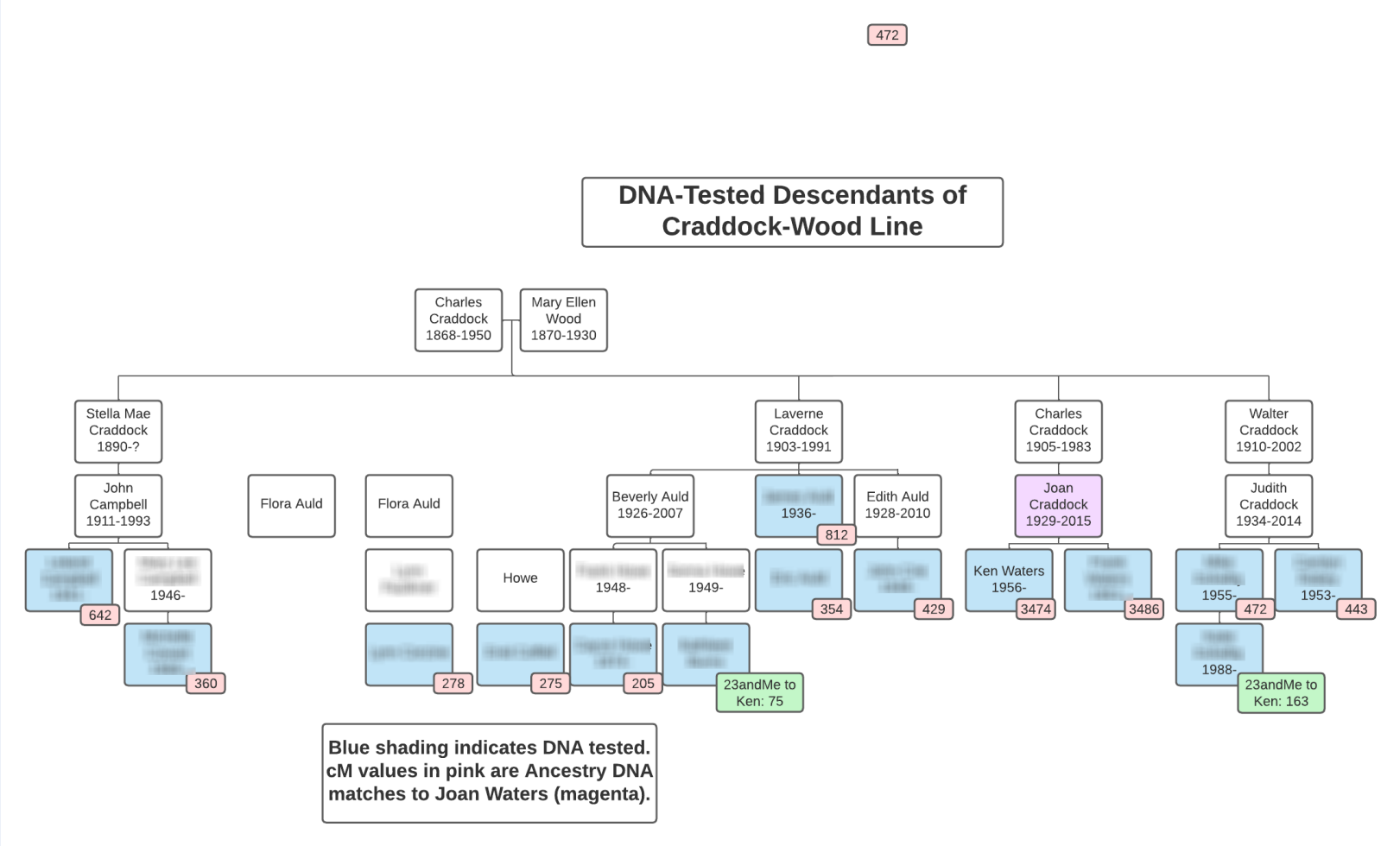
What are the advantages?

- Ability to thoroughly vet data using your own research
- Easily document all DNA matches known to belong to a single line
- Combine matches from other testing companies
- Showing centimorgan data can help to verify the proper relationship (e.g., full 1st cousin versus ½ 1st cousin)
- Allows a quick look at a family line (e.g., maybe a pair of great-great-grandparents
  - This is really valuable for me especially when I'm prone to jump around a lot and forget what I've already documented

ThruLines

- Using trees it attempts to match up DNA matches and place into a relational tree of DNA matches
- Clicking on one ancestor can reveal the DNA matches that might descend from that ancestor

ThruLines

- Some of these matches are not identified by name
- To see all the presumed DNA descendants of Nathan Spencer we have to keep scrolling (with the arrows) left and right
  - No way to see entire set of his descendants on one screen
- Sometimes errors pop up
- Uses trees that are *NOT VERIFIED* and often in error

ThruLines® for Nathan G Spencer

ThruLines® uses Ancestry® trees to suggest that Joan Anita Craddock may be related to 9 DNA matches through Nathan G Spencer.

Am I just creating another ThruLines (Ancestry)?

- No, it's quite different for these reasons:
  - Data can be properly verified, unlike errors that often show in ThruLines
  - Extent of lines can be controlled, unlike ThruLines which often requires scrolling horizontally to show all lines
  - DNA match data from other companies can be included, not just Ancestry
  - Hypothetical ("what if") persons can be added to test hypotheses
  - No need for a public tree!
    - Build your own private, unsearchable tree for the match

To start we need a charting tool

- I use and like LucidCharts
  - Free to create as long as not too many elements on the chart
  - More complicated charts may require a subscription (~$100/yr) but try it first for free which is what I did
- Powerpoint
  - Not as quick and intuitive to edit diagrams but it does work
- Other options:
  - Miro
  - Visio
  - MindManager
  - Draw.io (now diagrams.net)
  - Scrapple

Lucidchart
System software
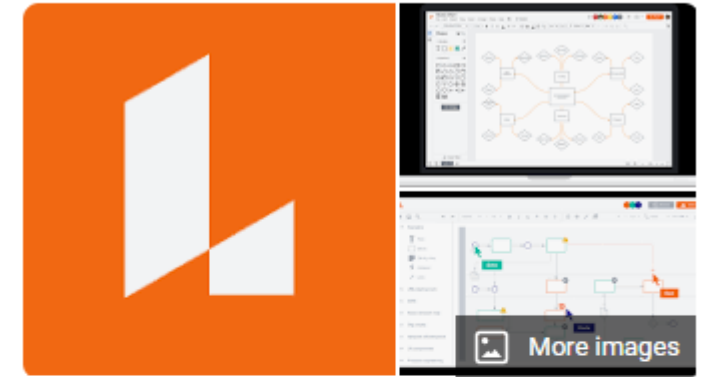
Lucidchart is a web-based diagramming application that allows users to visually collaborate on drawing, revising and sharing charts and diagrams, and improve processes, systems, and organizational structures. It is produced by Lucid Software Inc., based in Utah, United States and co-founded by Ben Dilts and Karl Sun. Wikipedia

Initial release date: December 2008

License: Free and paid subscriptions

Developer(s): Lucid Software Inc.

Platform: Web-based

LucidChart is my choice

- I started with Powerpoint and found it workable

- However, once I tried LucidChart I quickly gained an appreciation for its ability to easily adjust diagrams

- After using the free version for several months I eventually reached the maximum number of elements on a chart and so upgraded (~$100/yr)

- I consider that cost to be well worth it

My Goal

- To document all my DNA matches on each of 8 great-grandparent lines
  - In some cases for lines with many matches I might document one of the 16 2nd - great grandparent lines
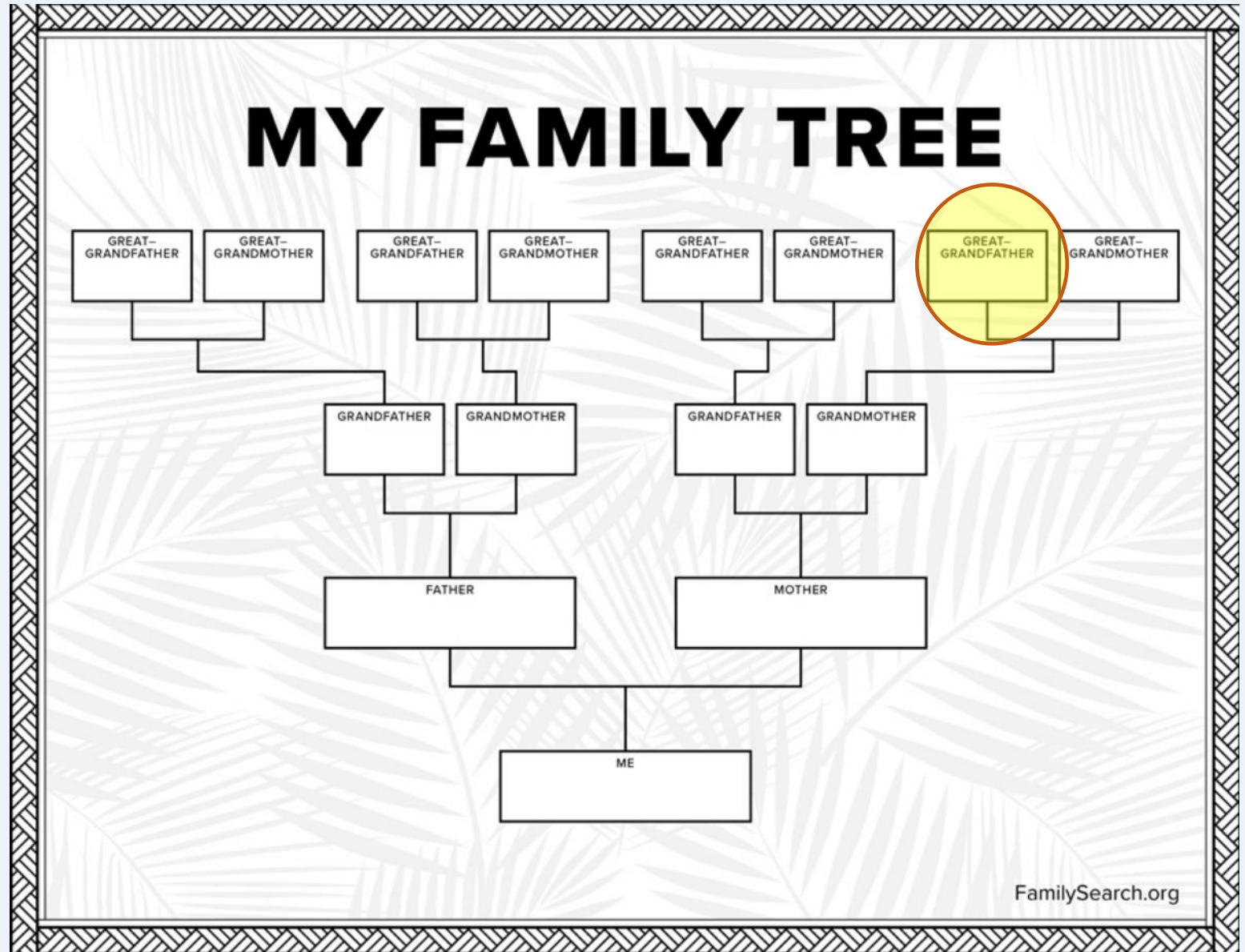
The Steps

1) Identify the target ancestor or ancestral couple

2) Find the DNA matches who descend from them

3) Start a new chart showing the direct relationship from the test taker to the target couple

4) One by one, build trees for each of the matches (if necessary) and then place them on the chart showing their line of descent
   1) Annotate the match box with cMs to show strength of relationship to test taker
   2) Put the birth/death dates for each person (to share it externally be sure to anonymize)
   3) If you have a "DNA Island" (network under the common ancestor but unknown where to link them) then add that in the diagram but not attached to the main diagram

To Start

- Identify a target person or couple

- For my purposes I will start with a 3rd great-grandparent couple of mine:
    - Nathan Spencer (1829 VT – 1877 MI)
    - Elizabeth Butler (1835 NY – 1914 MI)

- I will be using my mom's DNA kit so these are her 2nd great-grandparents
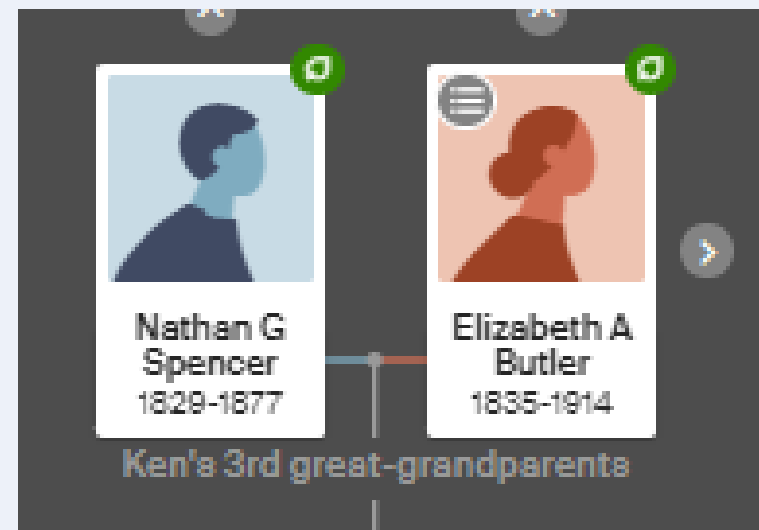
Start a new chart

- I use a blank document most of the time
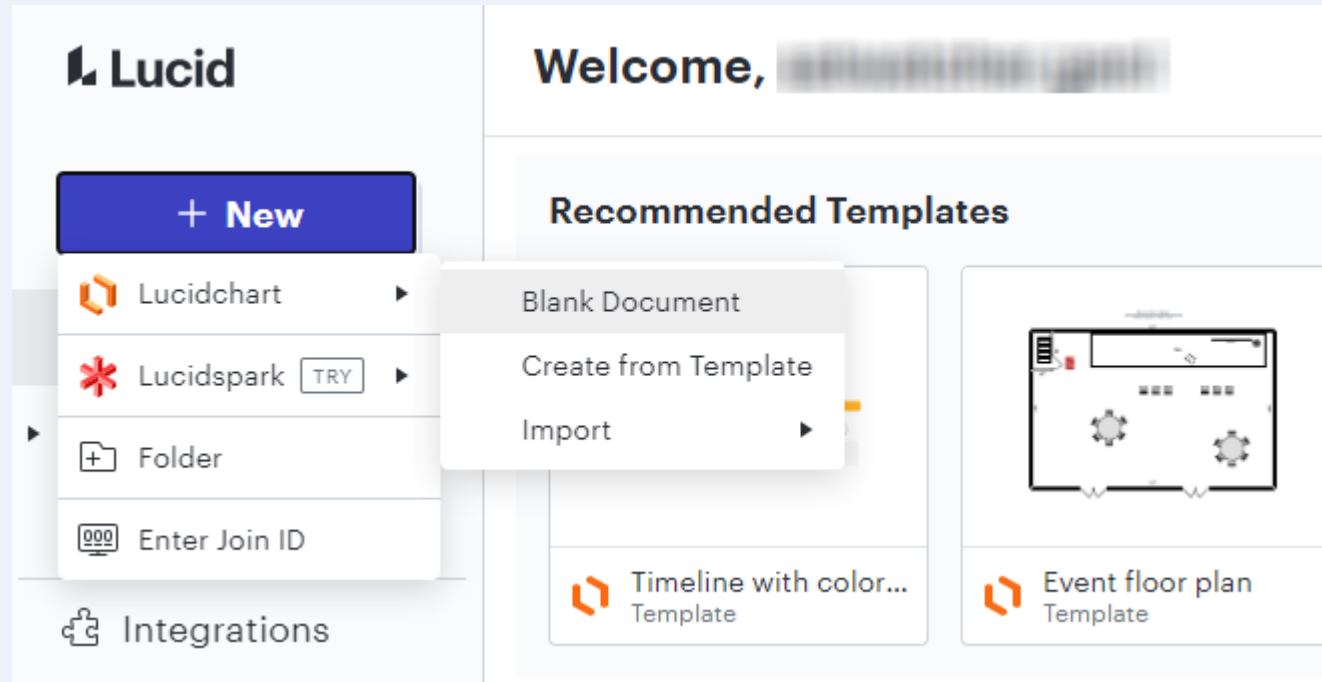
Blank Diagram

- Many tools here but I primarily only use:
  - Rectangle shape
  - Lines/Arrows
  - Text Boxes
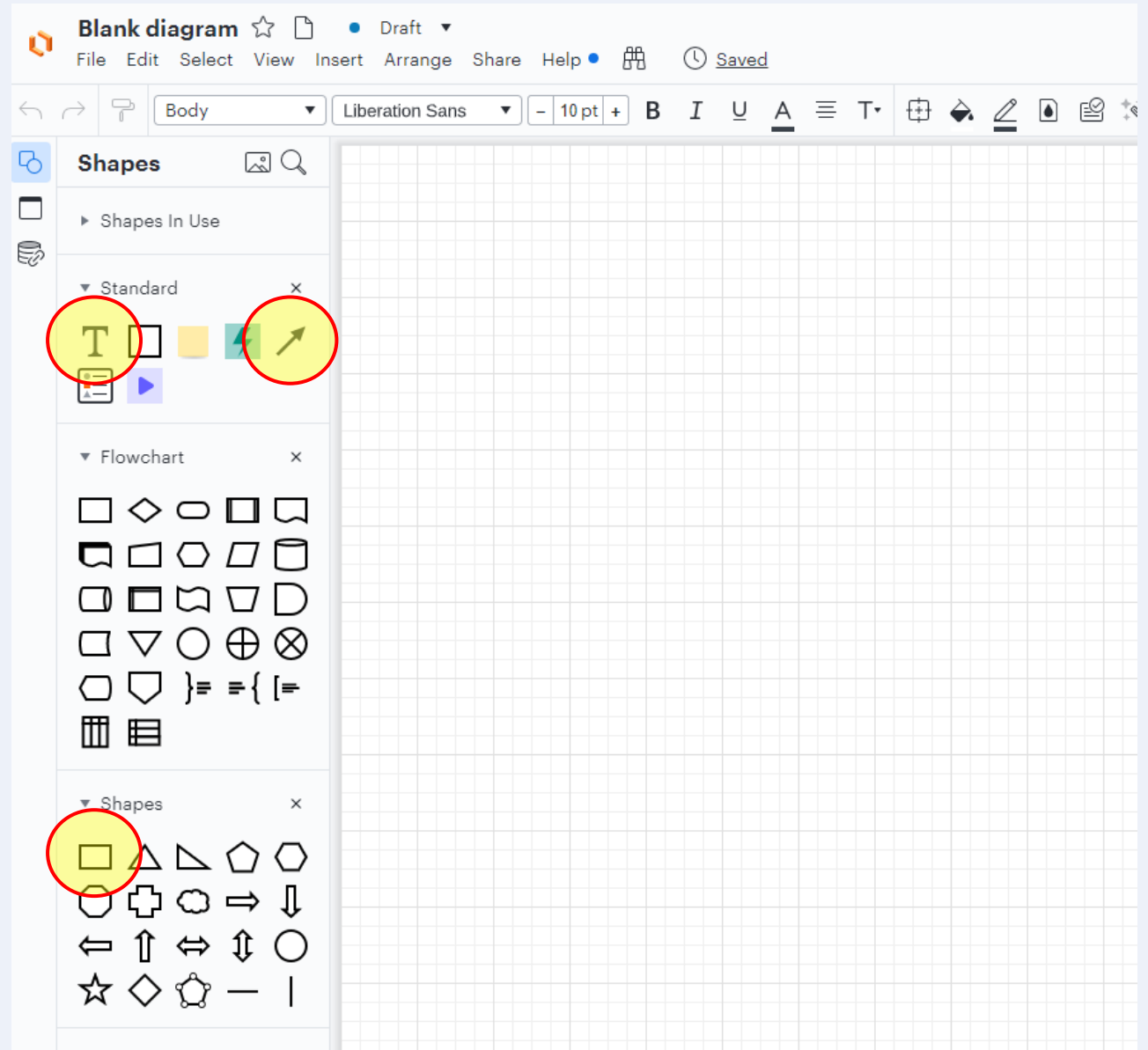
Add test taker

- Type name and dates inside the rectangle
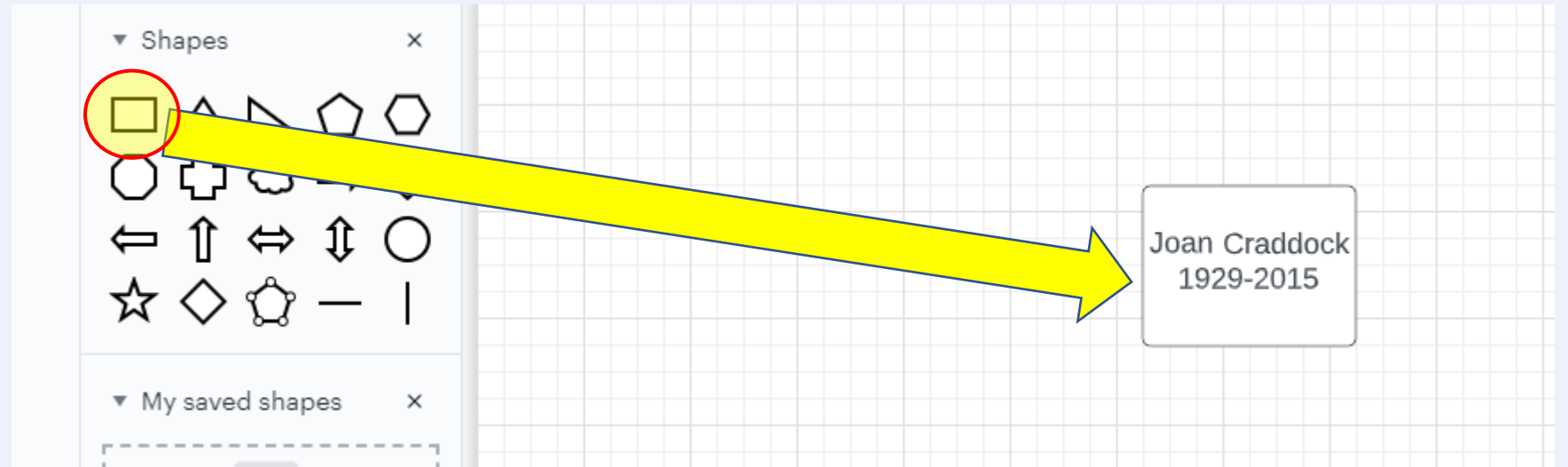
Continue back to our target ancestor(s)

- Note the very helpful alignment hints showing an object is properly lined up
- I like to color code the boxes:
  - Blue for the "home" subject tester
  - Green for a DNA tester
  - Pink/red for uncertain
  - Of course you can choose your own colors
- Easy to color-fill the boxes
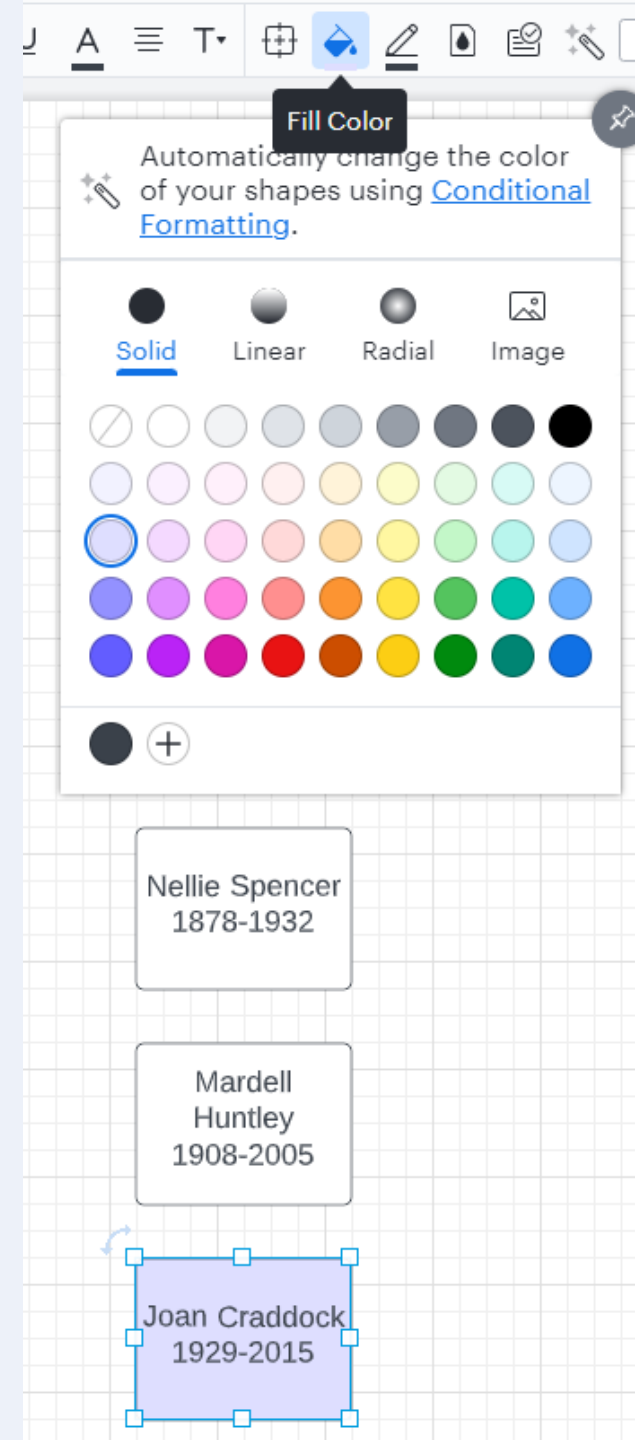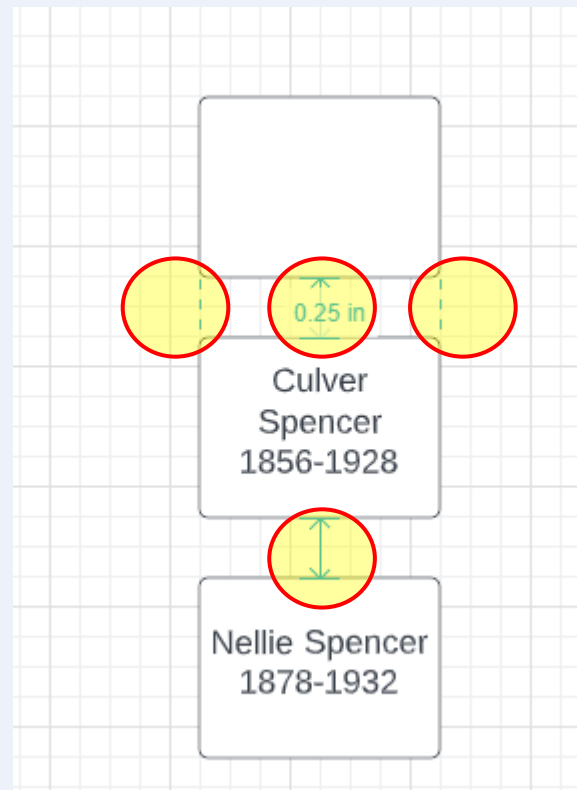
Add connecting lines

- Select the line tool then one of the boxes and when you see a red dot draw in the connecting line
  - It will automatically center the line unless you override it
  - You can draw straight horizontal or vertical connecting lines or angled lines
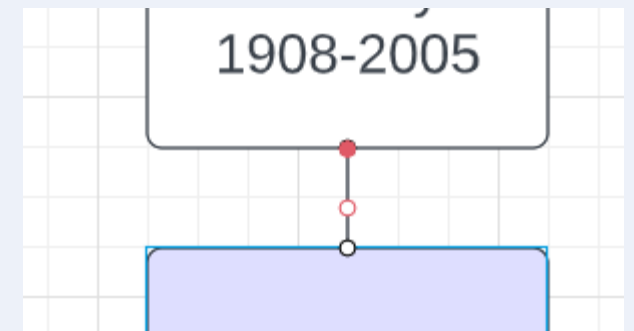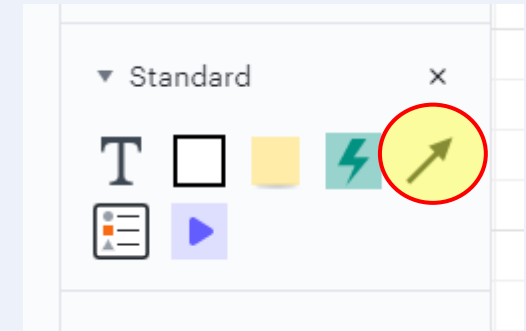
Completed path from test taker to common ancestral couple
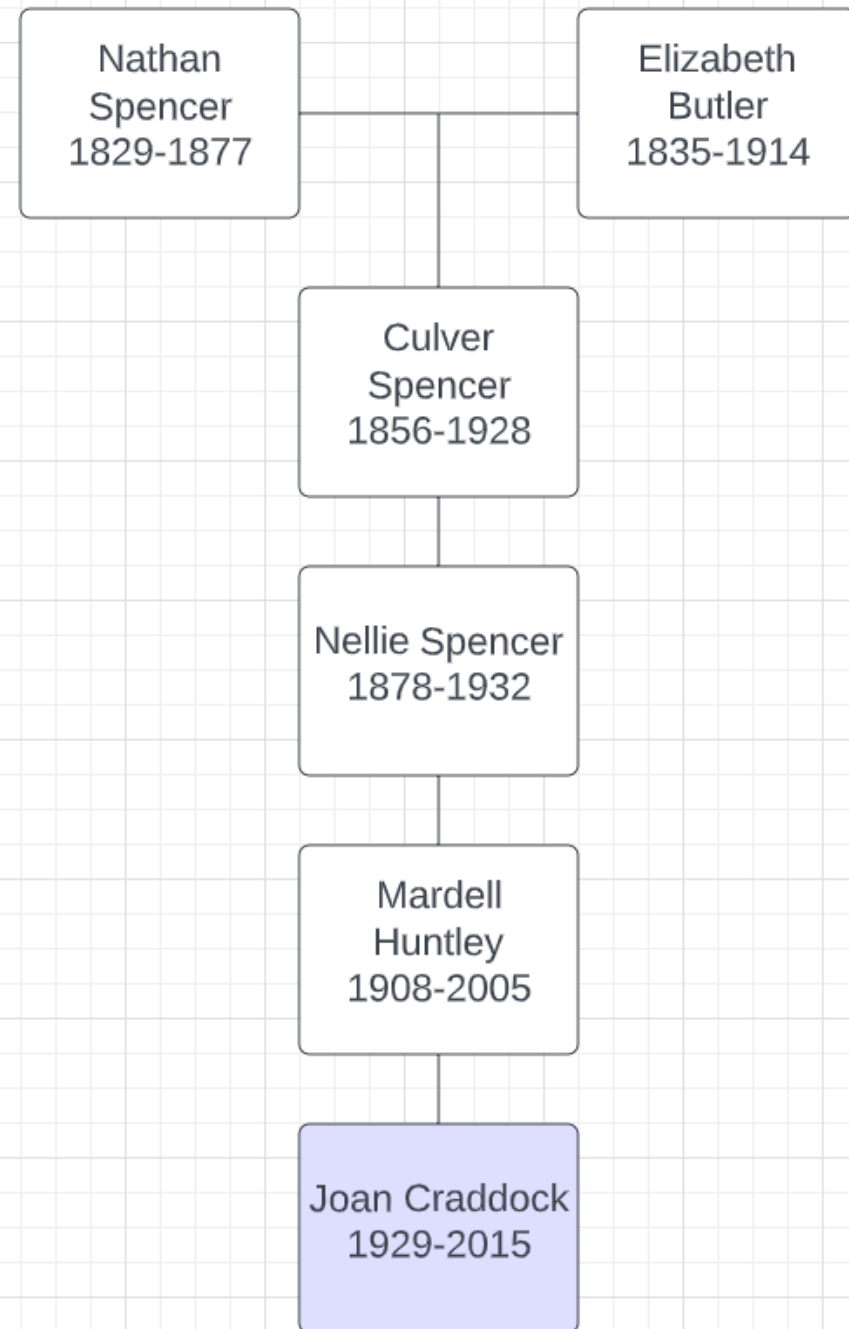
Identify all DNA matches related to you through this line

- On Ancestry I use Tag Groups (the colored dots) to identify the different family lines

- One process I use is to number each grandparent (1-4)

- Group #4 is descendants of Mom's maternal grandmother whose parents were Culver Spencer and Arzelia Cummings

#4 Spencer/Cummings

Back to the selected matches

- 5 of these 6 were properly indicated by ThruLines

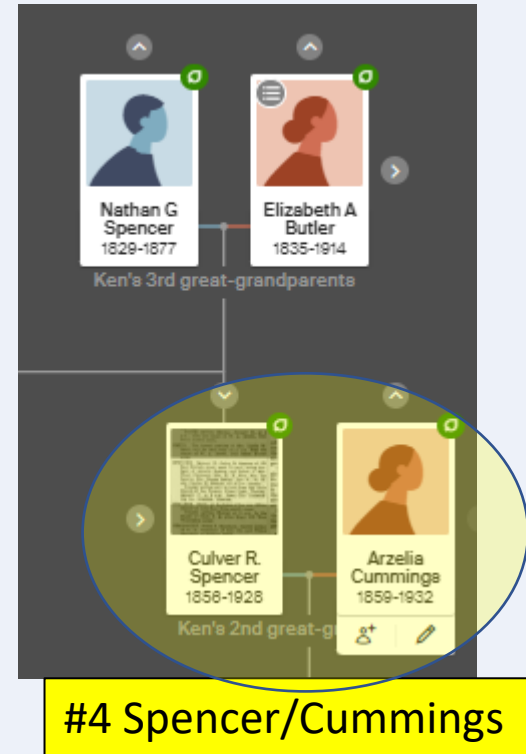- 1 of them was not indicated in ThruLines even though she was shown with a common ancestor hint

- For each of these matches I researched the individual, including birth dates, locations, and relatives

- I reserved a unique tag group (light blue color) for them

Add the first DNA match

- Because "WT" is one generation above the test taker I lined her up with the test takers mother (note the alignment helping lines)
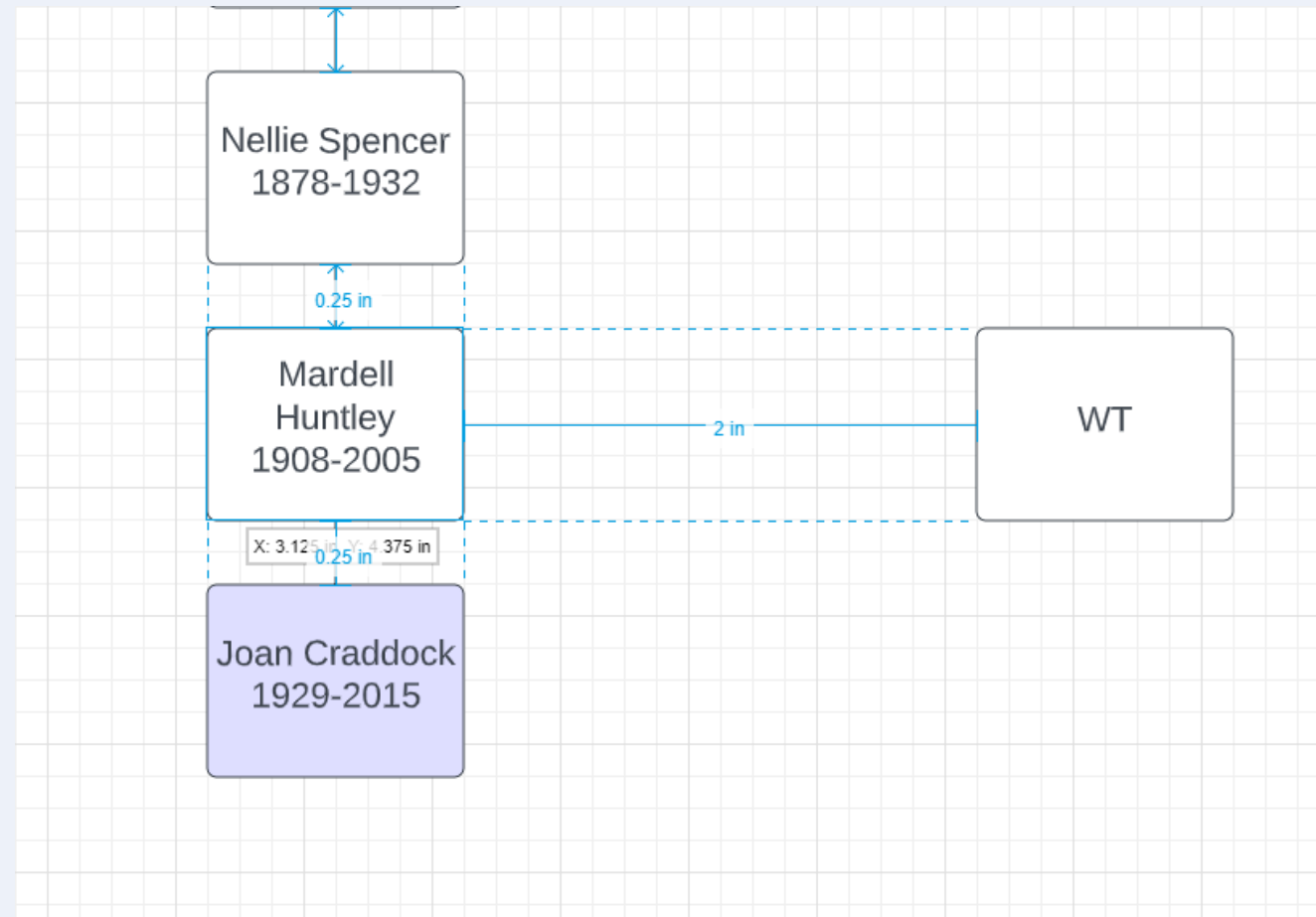
Build back that first match to the common ancestor

- Once again, ensure the boxes are lined up nicely
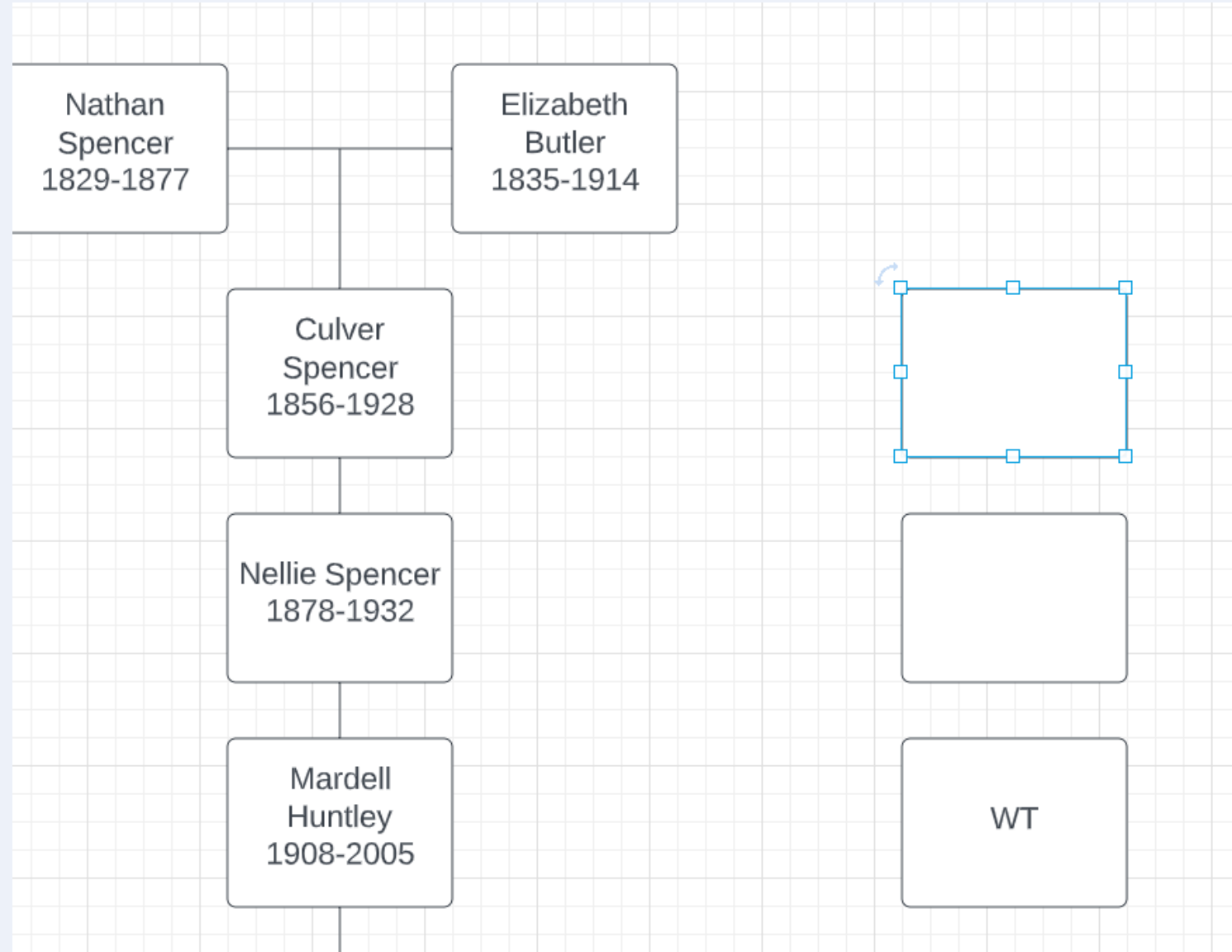
Finish the line with names and dates

- Color the DNA match green and connect her ancestors

- But, now, how do we connect "WT" into the target ancestral couple?
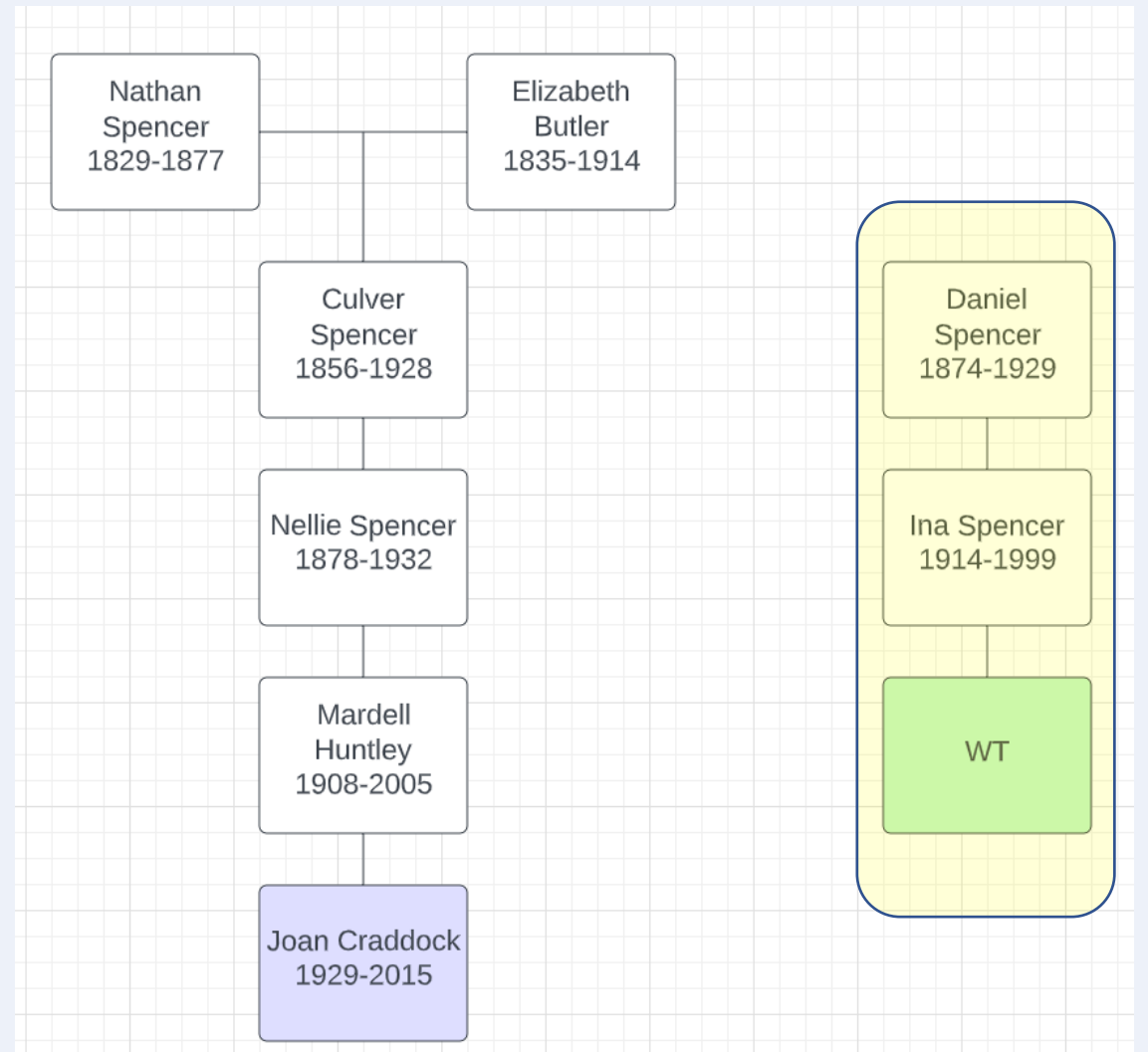
Connect WT's line to the Spencer/Butler couple

- First, move Spencer/Butler over to be centered over the two lines

- Add one horizontal freeform line
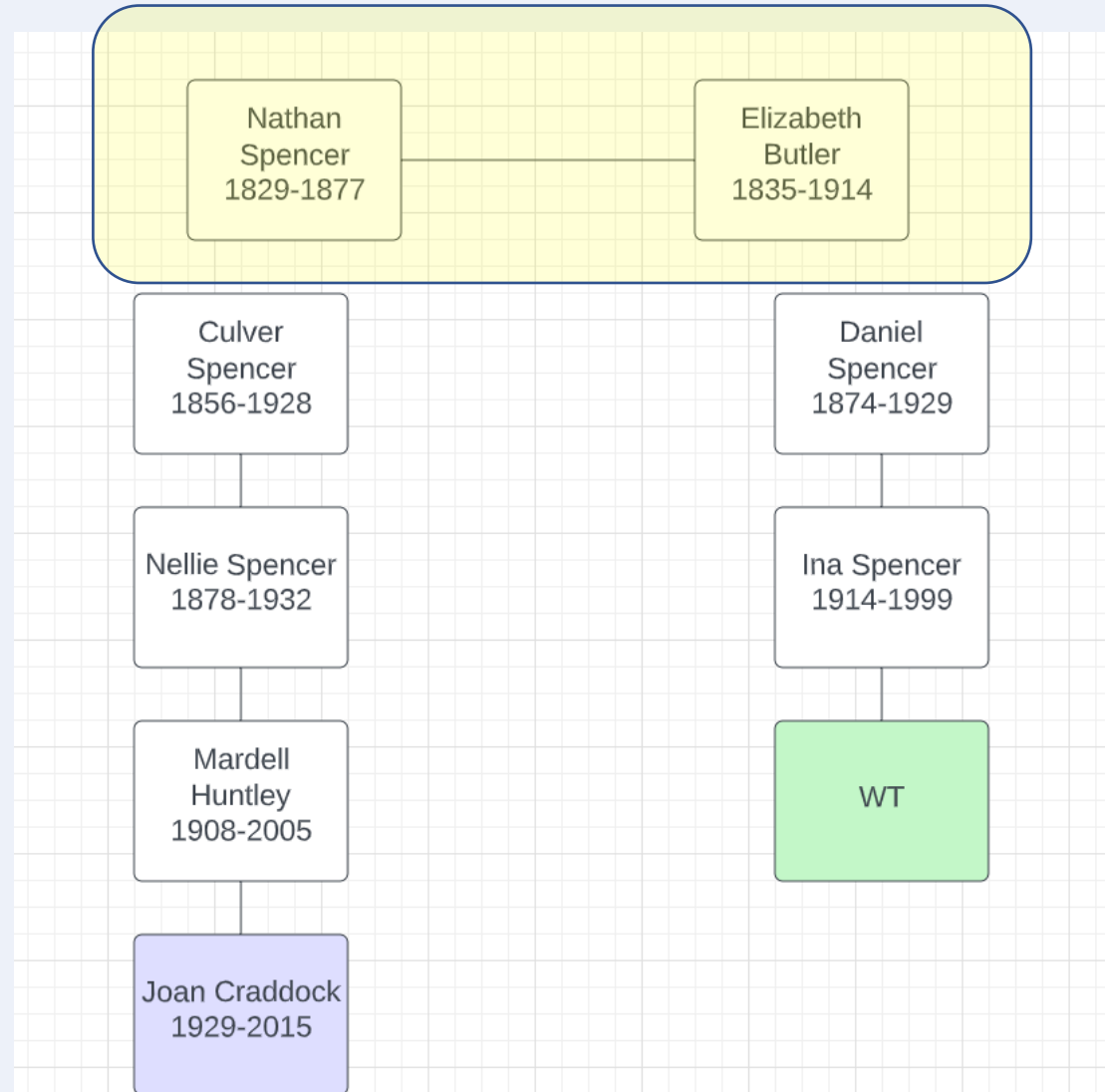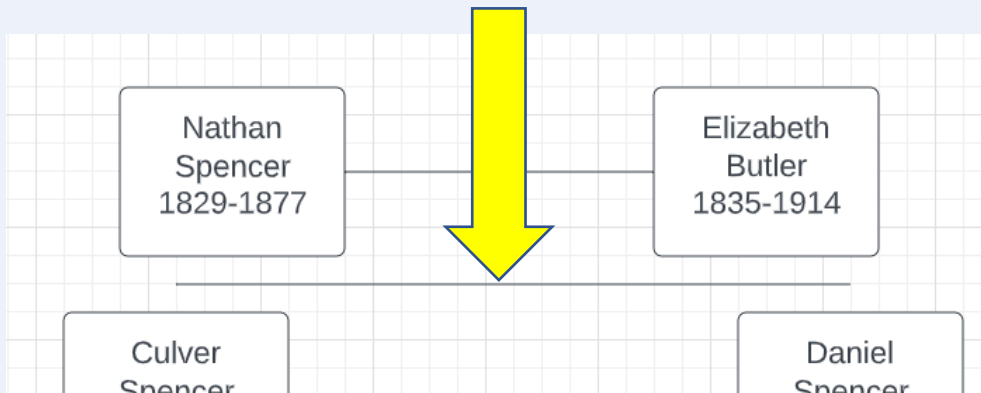
Add vertical lines to complete

- The process of connecting the two groups takes less than a minute and LucidChart takes care of all the alignment for you
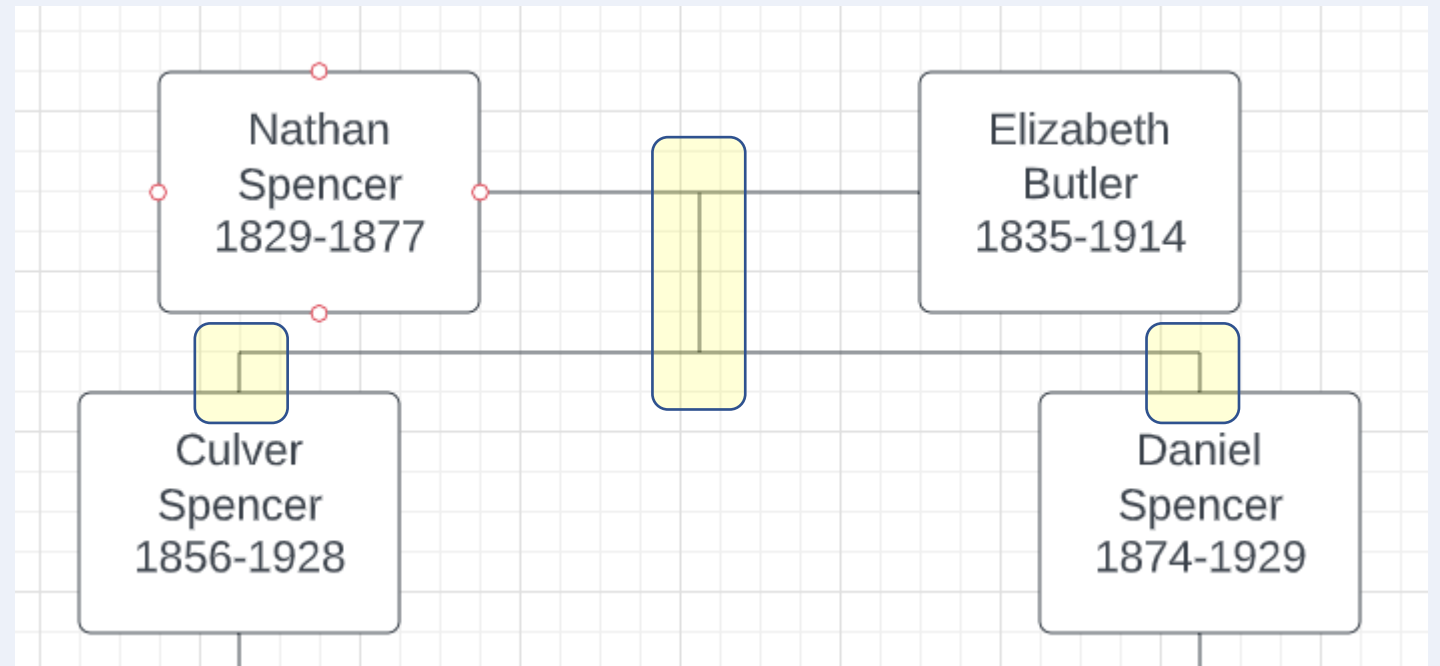
Add more matches

- Here I added "AC"
- Her line goes up through another child of Daniel Spencer
- Note that I only show the single connecting parent that is relative to the line rather than both parents
  - This is to minimize elements on the chart
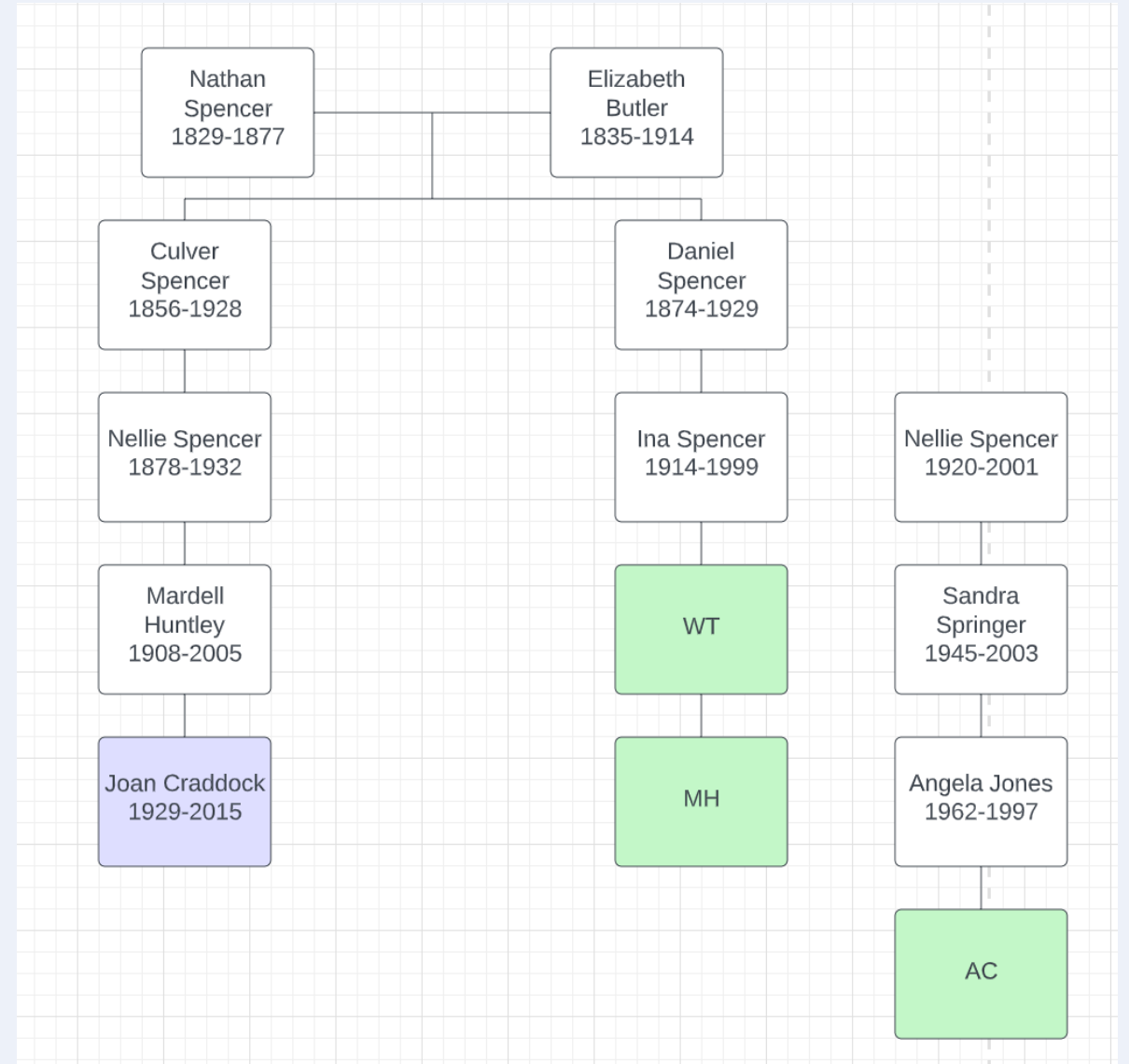
Realign Nellie Spencer under Daniel Spencer

- Using the same process let's put Nellie centered nicely under Daniel
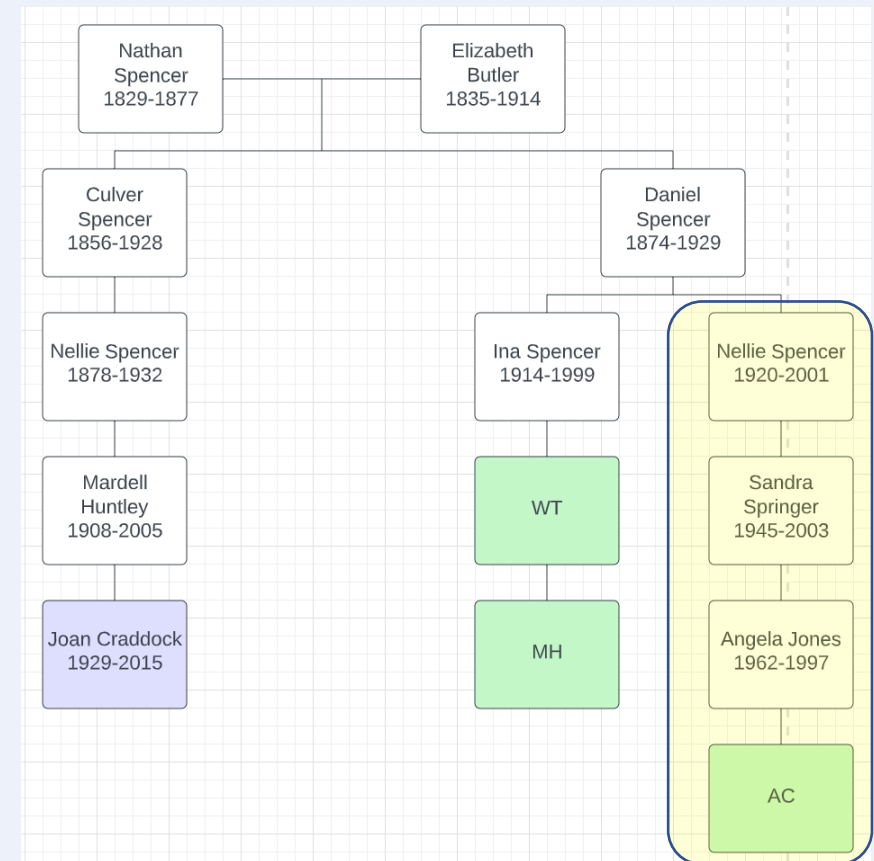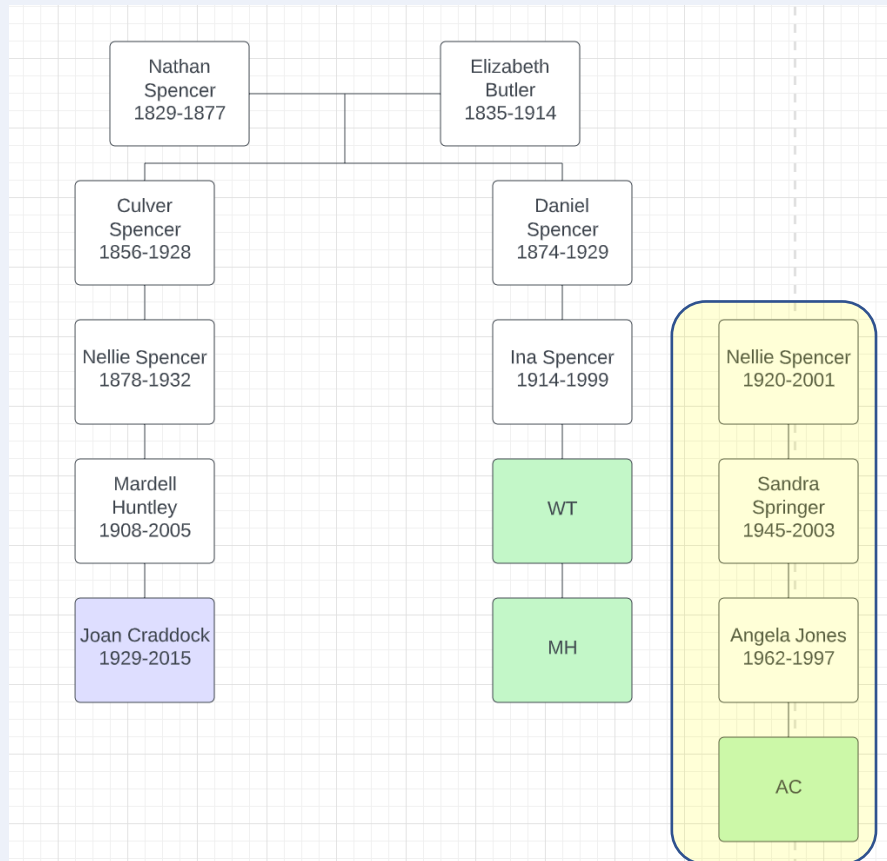
Add another line under Nellie – 2 new DNA matches
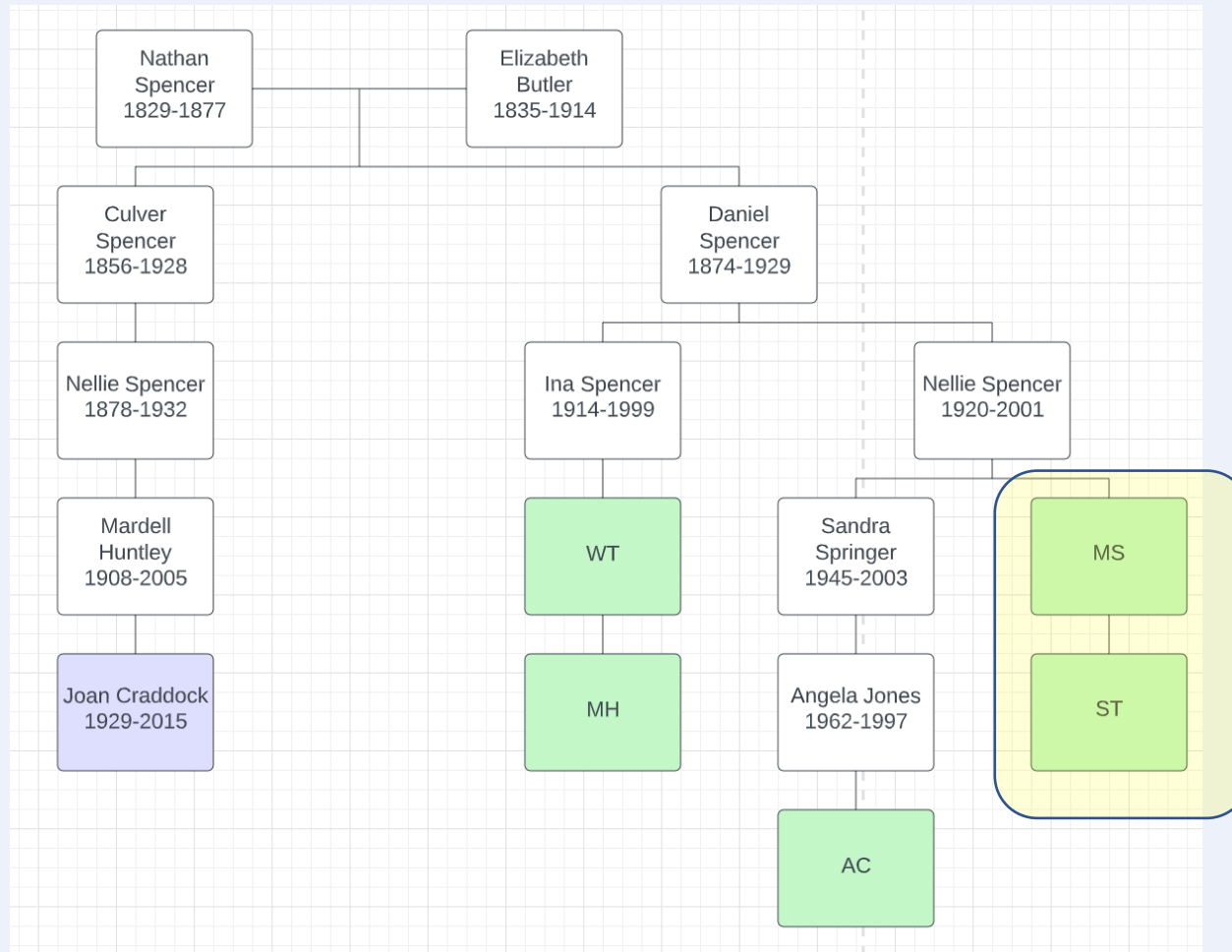
Test taker from another service (GEDMatch)

- Another advantage of this process is being able to add DNA matches that come from other testing companies or GEDMatch

- I found one there and identified her and so can easily add her to the chart
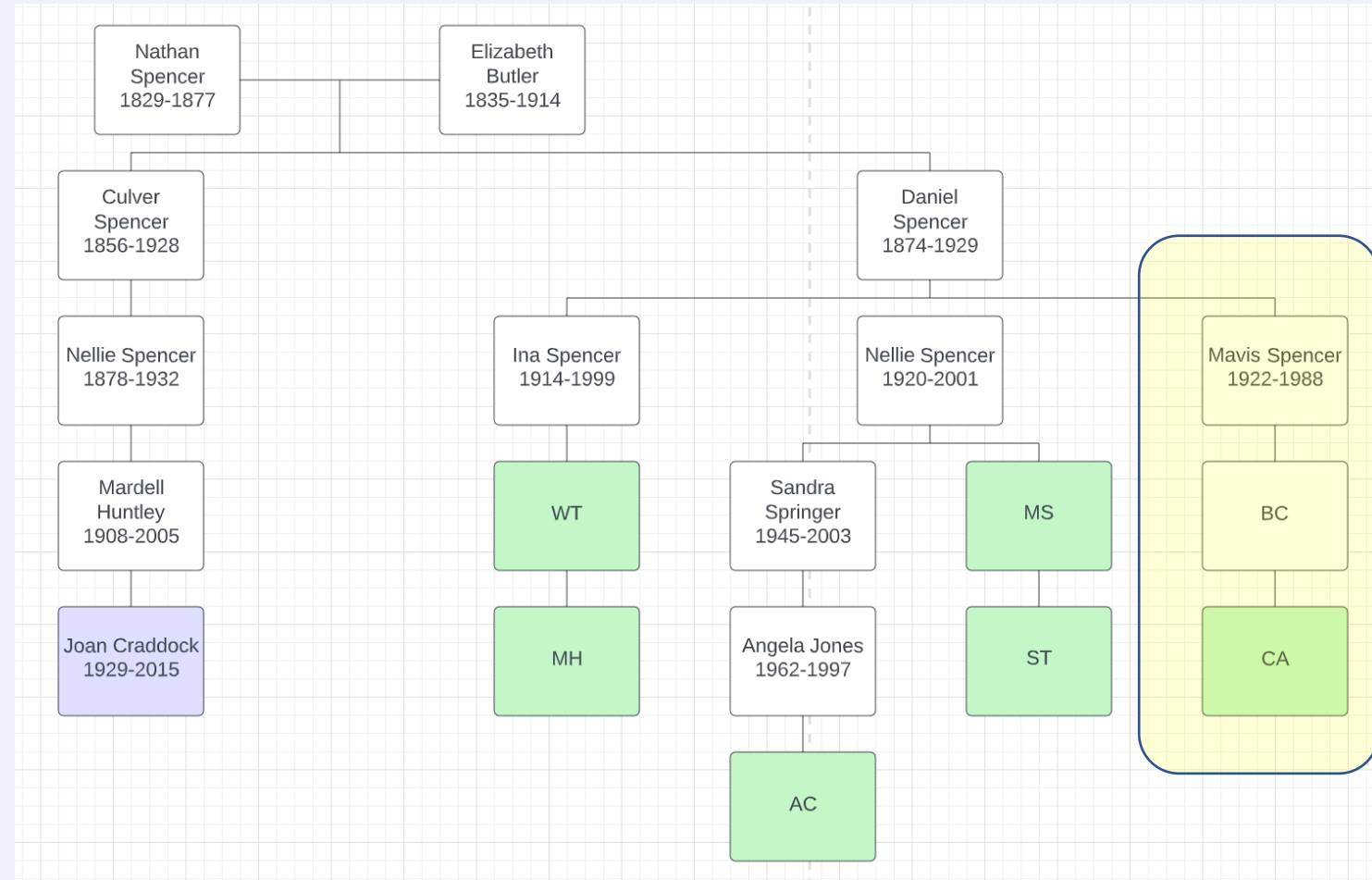
Now, add a DNA match with uncertain lineage

- We know AW is in the family group but there is a little bit of uncertainty with Frank Spencer
  - Was he the right one or possibly a different brother
  - This needs to be investigated further so I am shading his box red
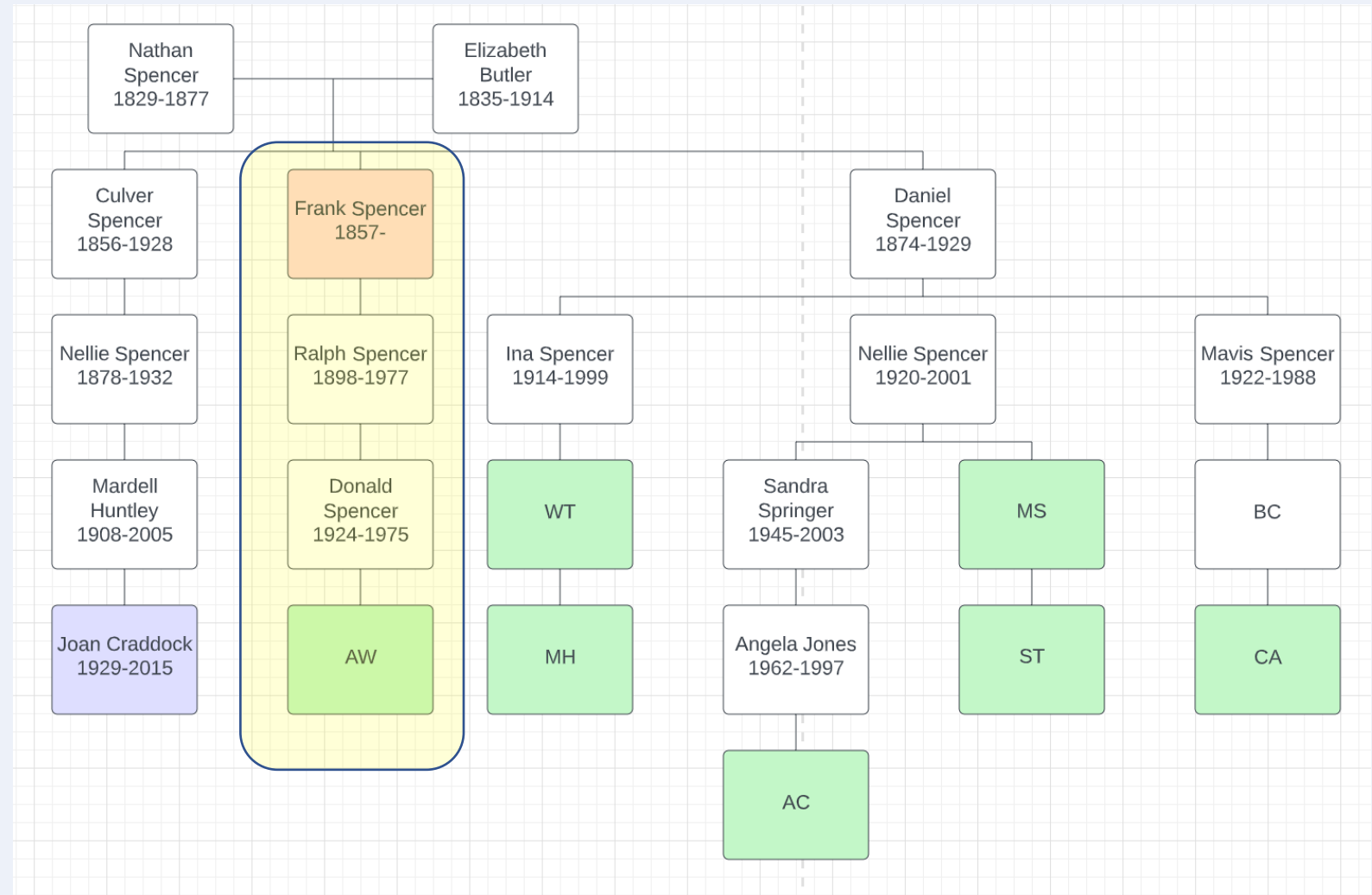
Last step – add the centimorgan values to each match

- Use a different color (yellow) in a text box to label each match
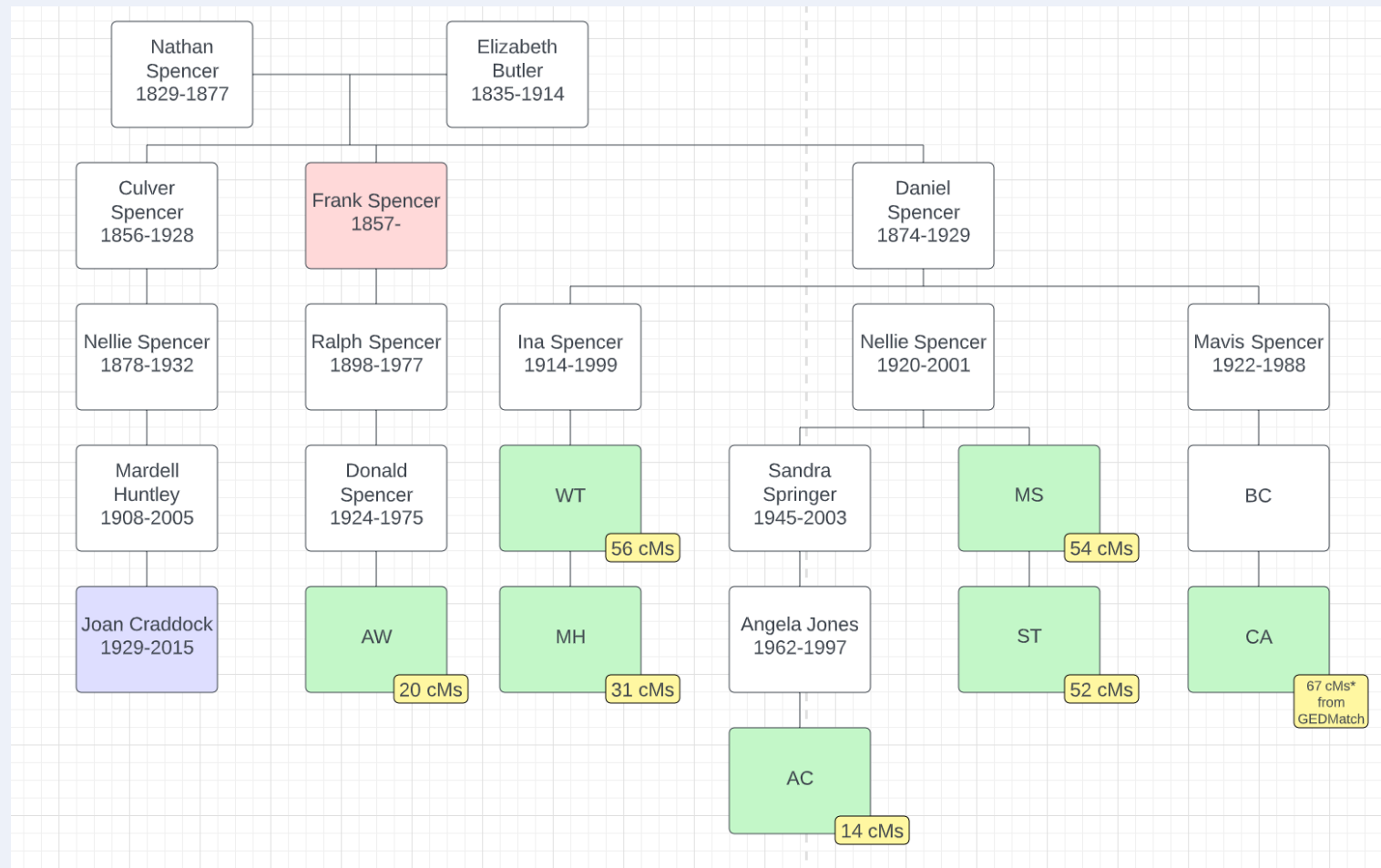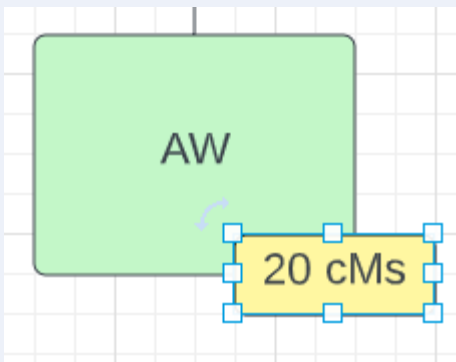
Final Touches

- Add a legend and title and any info boxes

- Review the cMs amounts to confirm that the noted relationships are feasible (use DNA Painter Shared cM tool)

- Download as a PNG format (or one of many other options)
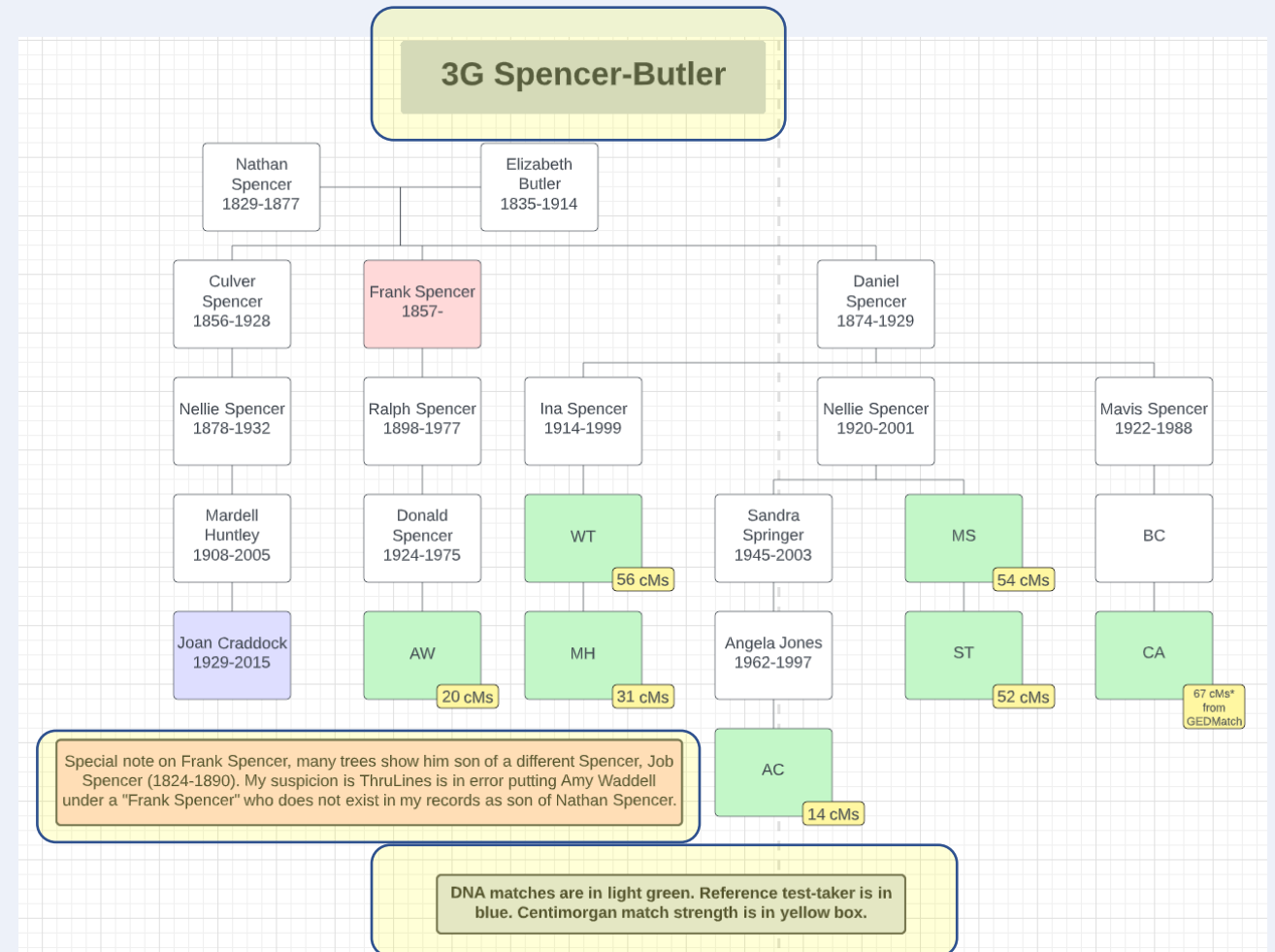
Last note on Scalability

- LucidChart excels at scaling when adding and deleting portions of a chart

- Sometimes if I have a chart that is too wide such as 14 children from the ancestral couple then I can easily make a copy of the chart to break it into two charts, each with 7 children
  - This is the case for one of my 2nd-great grandparent pairs that has over 100 documented DNA offspring!

Final Product is:

- A chart that can be referred to often for a common line of descent
- A chart that can be easily modified to add new or newly discovered DNA matches in the line
- A chart that has been carefully verified and can be trusted
- A chart that is attractive and can be used for presenting case studies
- A chart that I have full control over

Which do you prefer?!
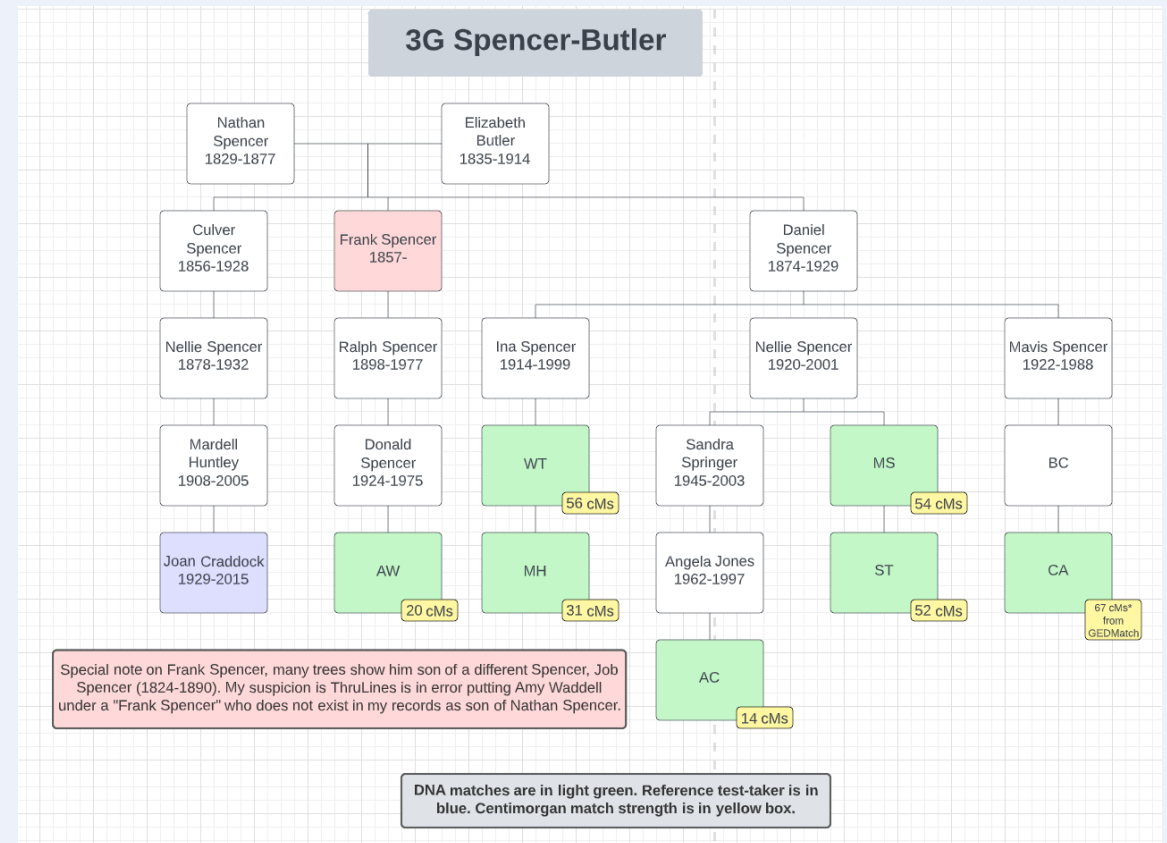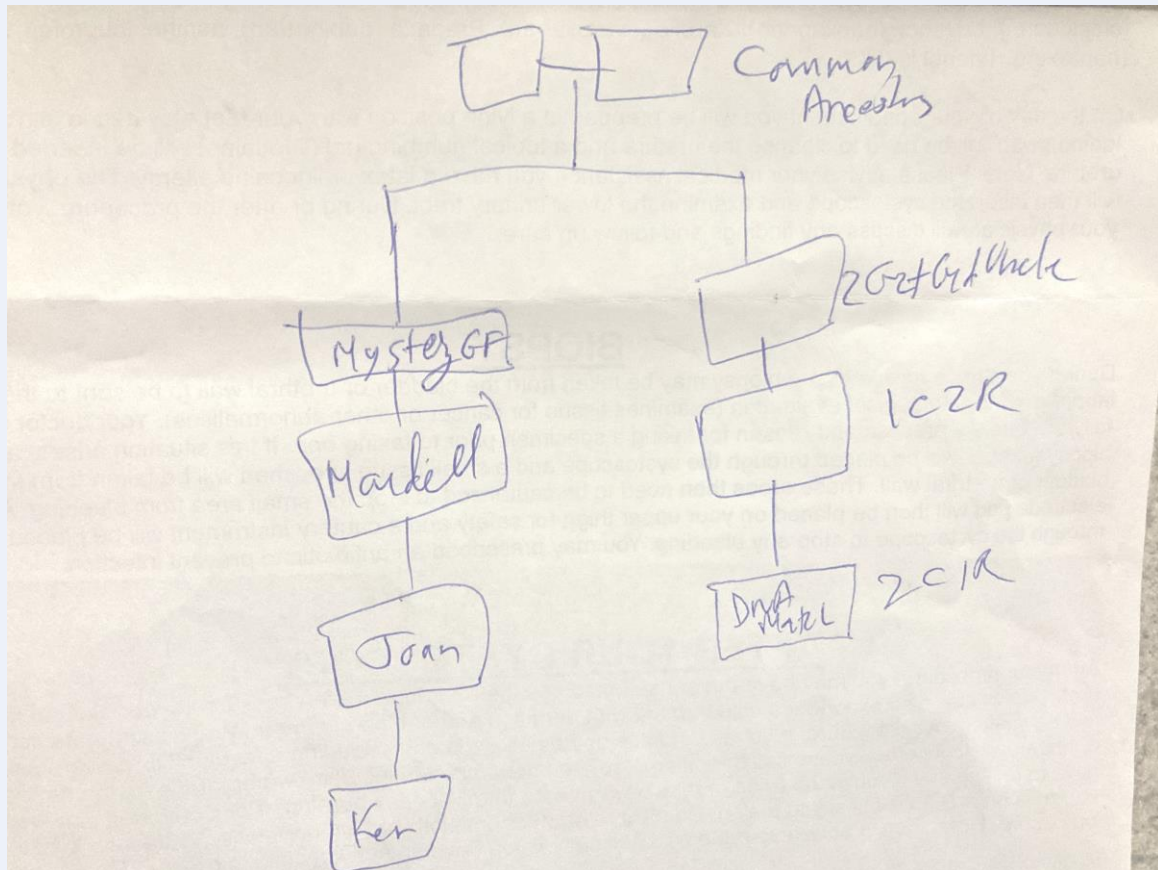
Upcoming Classes/Presentations

Thurs, Nov 17, 9 am (Private Group—contact Ken for information)
Topic: Intro to DNA plus look at Ancestry's new SideView feature.

Mon, Dec 5, 7 pm (Private Group—contact Ken for information)
Topic: DNAPainter

Sat, Dec 10, 1 pm – 2 pm
Title: A Unified Process for Working with Ancestry DNA Matches
Description: We will discuss a useful methodology for working your DNA matches starting with the basics and then digging deeper into ways to improve your Ancestry DNA efforts. This will include using Tag Groups, shared matches, and identifying those matches in order to add to your family tree.

Sat, Jan 14, 2 pm
Topic: Identifying Your DNA Matches
Description: One of the primary steps in working with your DNA match list is identifying the matches so that you can work them into your family tree. Sometimes it's easy or you can communicate with the match. But, more often, that is not the case and so a series of steps may be required in order to identify them

Wed, Feb 1, 7 pm (Private Group—contact Ken for information)
Topic: Working with DNA Matches

All library classes (highlighted blue) are free to attend and require no registration. Classes are held at the Red Mountain Mesa Public Library at 635 N Power Rd in Mesa (unless otherwise noted above).

FamilyTreeAZ.com

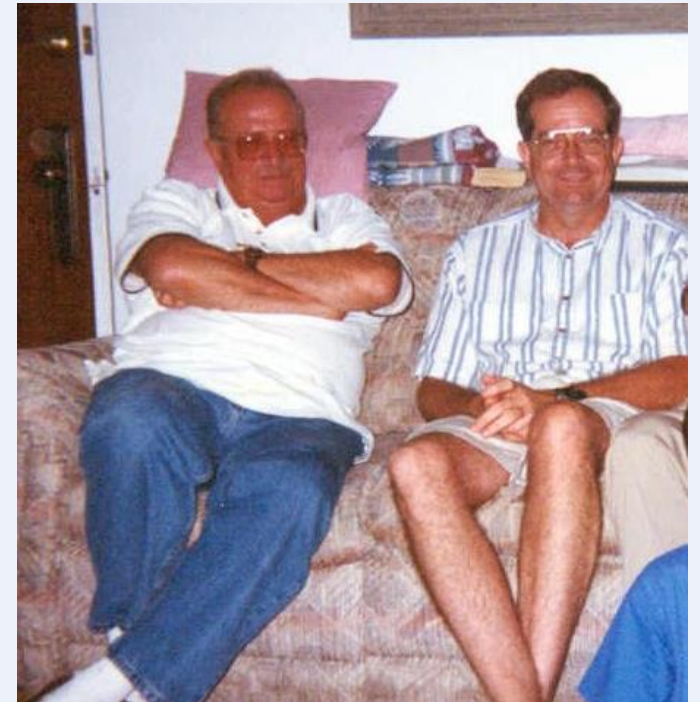Presentations:
http://familytreeaz.com/Presentations

Me with my paternal uncle,
Kenny Waters, 1929-2022

Contact:

Ken Waters

E-Mail: **satwatcher.gen@gmail.com**

Blog: familytreeaz.com

Twitter: @familytreeaz

Google Voice Phone: (480) 331-5889