

How to Evaluate an Ancestry DNA ThruLine[®] Using Documentary Research and DNA Analysis

Diana Elder, AG

Family Locket Genealogists



FamilyLocket.com

Diana@FamilyLocket.com

ThruLines can suggest ancestors that seem to include DNA evidence but are based on faulty family trees. Learn a process to evaluate any ThruLines connection.

DNA Research Process

Following a process when working within a DNA project allows for the most success. The following steps are important.

Assess Matches & Analyze Pedigree: Begin by reviewing the closest DNA matches and performing basic clustering using the Leeds Method, Ancestry's Sideview, or Ancestry colored dots. Review the pedigree to see what research question could be answered using DNA.

Organize DNA Results & Research Objective: Chart these closest matches by hand or using a digital program like Lucidchart. After choosing a research question, craft an objective with key identifiers for the ancestors involved.

Timeline & Source Citations: Gather the known information for the research objective and use it to create a timeline that will be the starting point for the project. Create source citations for each source added to the timeline.

Analyze Sources and Matches: Review each source on the timeline for the type of source, information, or evidence it provides. Determine the relevant DNA matches for the research objective and begin charting them.

Locality Research & Ethnicity: Study the location where the research will take place to discover new avenues for research. View ethnicity estimates to see connections between test-takers, DNA matches, and the research subject.

Explore DNA Tools: Explore a variety of DNA tools that could be used in the analysis. See the DNA Tools Bell Curve in figure 1 for suggestions.

Research Plan: Create a research plan for the documentary and the DNA work.

Research Log: Following the research plan, perform the research, tracking the searches in the research log.

Report: Write up the conclusions from the research.

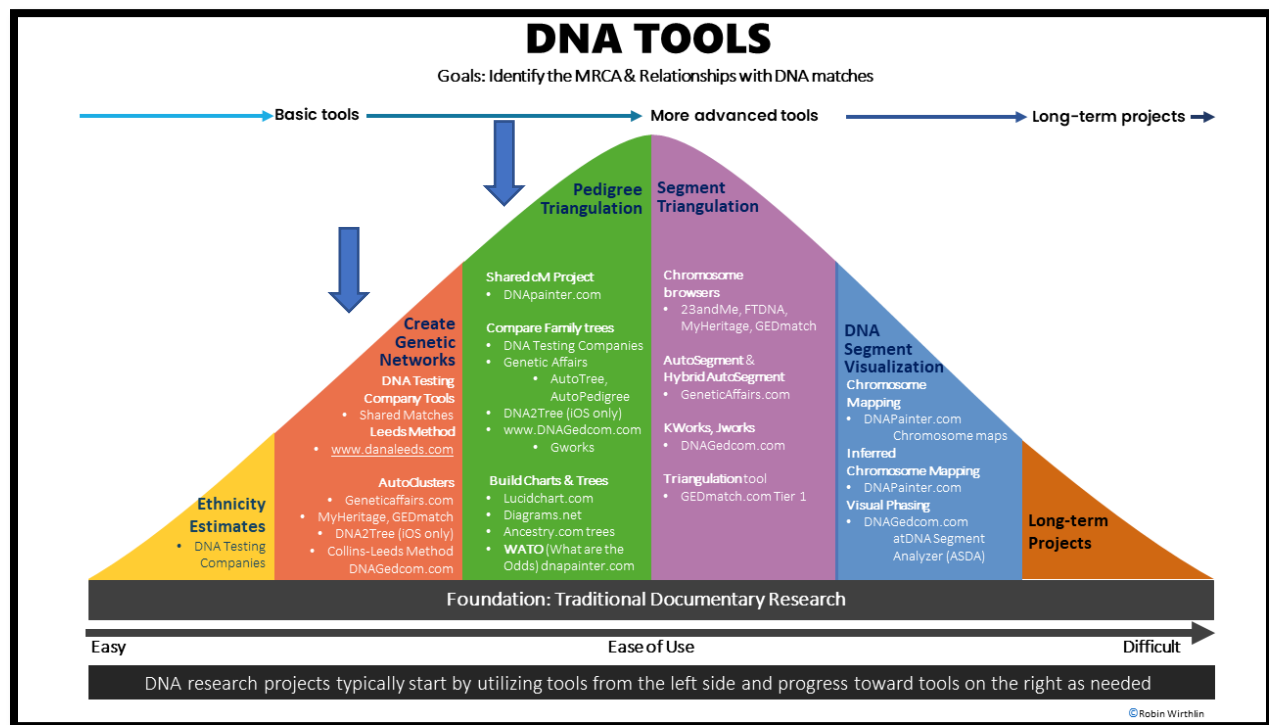
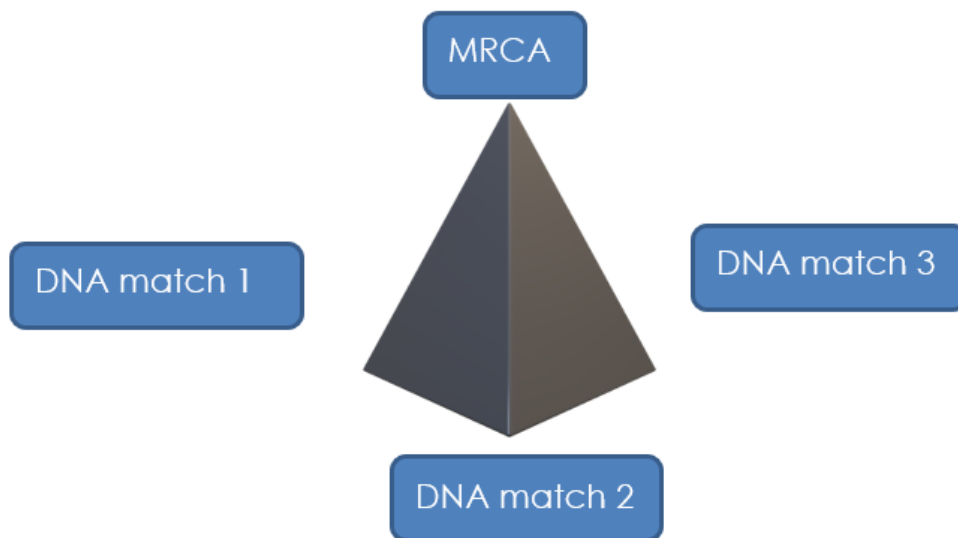


Figure 1 Robin Wirthlin, "DNA Bell Curve," revised February 2023

Using ThruLines: A Tool For Finding Relevant Matches And Achieving Pedigree Triangulation

Pedigree triangulation identifies the common ancestor among at least three shared DNA matches by comparing family trees. Picture a pyramid with a DNA match at each base point and the MRCA (most recent common ancestor or ancestral couple) at the top. ThruLines suggests possible groups of DNA matches whose trees point to descent from the same common ancestor and could provide useful evidence.



Steps To Perform Pedigree Triangulation using ThruLines

- Estimate relationships between the test-taker and DNA matches. Check the amount of DNA shared against the Shared cM project on DNA Painter.
- Build, compare, and verify family trees between the test-taker and DNA matches.
- Diagram the hypothesized genetic connection between the test-taker and proposed DNA matches.
- To evaluate a parent-child link, look for DNA matches to the ancestor's siblings, not just the ancestor.

Considerations and Limitations for Using ThruLines

- ThruLines is based on DNA and user-submitted family trees – either private or public searchable trees. Private unsearchable trees will not appear.
- The tree needs to be linked to the test-taker.

- Family trees could be incorrect.
- ThruLines are available for ancestors through 5th great-grandparents from the test-taker. To see additional family lines, test older generations.
- ThruLines proposes a path showing a possible common ancestor. We know they are biologically related because their DNA matches, but we don't know which ancestor the DNA came from . It could be a distant ancestor on another line than the ThruLines hypothesis.
- DNA matches sharing less than 10 cM could be false positives meaning they are based on false segments.¹
- Switch to the ThruLines List view to quickly find DNA matches over 10 cM.
- Use Filters to show only Ancestors with new DNA matches, Potential ancestors, Ancestors in the linked tree, Maternal Ancestors, or Paternal ancestors.

Additional Resources

Ancestry Support. AncestryDNA® ThruLines®. Viewed 9 May 2022.

support.ancestry.com/s/article/AncestryDNA-ThruLines?language=en_US.

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Dyer, Nicole, Diana Elder, and Robin Wirthlin. *Research Like a Pro with DNA: A Genealogist's Guide to Finding and Confirming Ancestors with DNA Evidence*. Highland, UT: Family Locket Books, 2021.

¹ Blaine Bettinger, "The Danger of Distant Matches," *The Genetic Genealogist* (thegeneticgenealogist.com/2017/01/06/the-danger-of-distant-matches/ : accessed 28 February 2023).