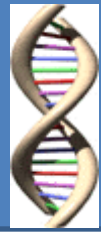DNA for Genealogy

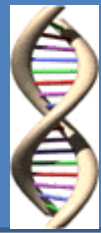# Missing, NPE, Brick Walls Learn New DNA Tools

RUG

8 Jul 2022

by Jim Bartlett

www.segmentology.org

Disclaimers

1. DNA testing may provide some unexpected results
2. I've tested at all the companies, but don't represent any of them
3. I am an Admin for surname projects at FTDNA & I provide advice/assistance to GEDmatch
4. I speak for myself (49 yrs genealogy; 21 yrs DNA)

Bottom Line Up Front

BLUF:

Our DNA Matches will point the way!
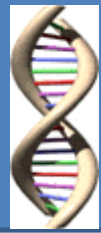
We don't know the Brick Wall (**Target**)
But, the Target has lots of Ancestors
Our Matches have those Ancestors, too
Use tools to form focused **Groups**
Matches in Groups tell us our Ancestors
No magic – still genealogy work to do!

"Brick Walls"

Brick Walls is catch all for:

   Bio-Parent

   Bio-Ancestor at any level

   NPE

   Missing/Unknown Ancestor

   Checking out an "iffy" Ancestor

Brick Wall Ancestor = **Target**

Agenda

Set the Stage
Objective
Big Picture
Methodology
  [Grouping Tools]
  [4 short Cases]
Curve Balls
Homework
References & Links
Q&A

Set the Stage

Your (bio) Ancestors are **set**
- whether you know them or not
- doubles with each gen. going back

Your DNA segments are set
- half from each parent
- all Ancestors contributed DNA
- from Ancestor to parent to you…
- Segments & Crossover points **set**.
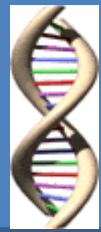
An Ancestor Tree

DNA for Genealogy

YOU
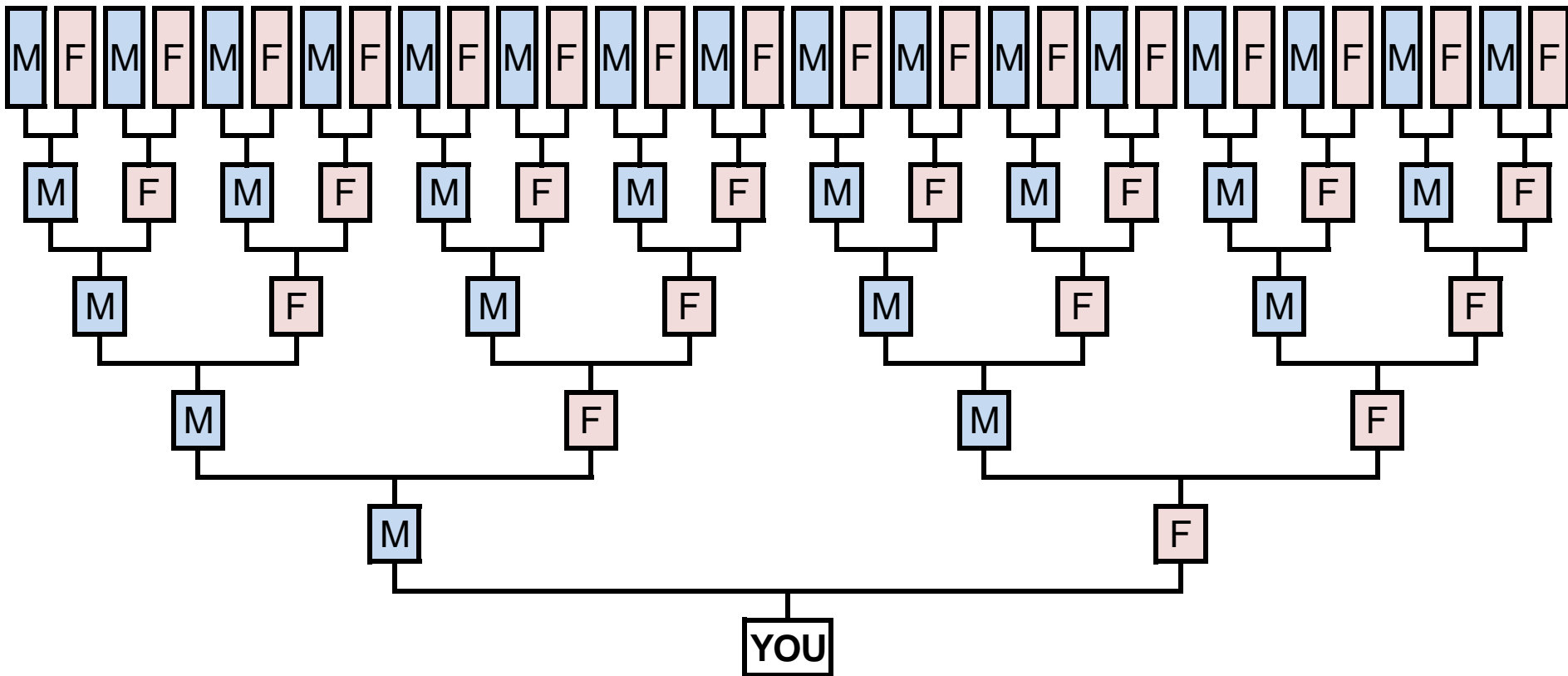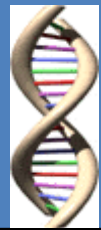
Ancestors/Segments
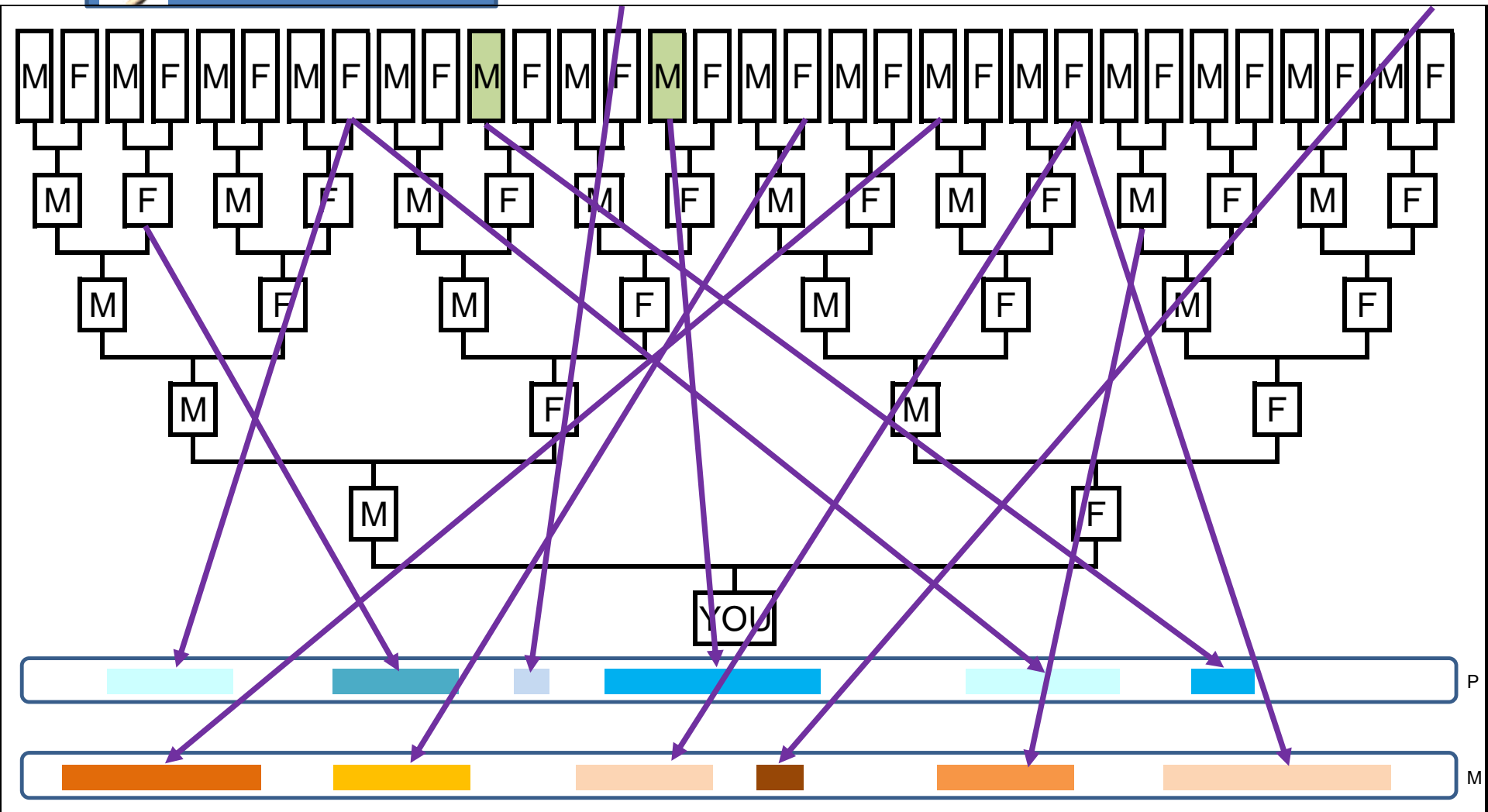
DNA Objective

Write it down!
- Who was my father? (mother?)
- Who was my paternal grandfather's father?
- Who was 1st wife of 3xGGF Thomas NEWLON c1767-1813, 3 children*; then 2m 1805?

Big Picture

Your **Target** Ancestor

Target has 2 parents, 4 grandparents…
Even if Target is an issue; his/her
Ancestors generally are not

Think – Target may be under a rock
Target's parents/grandparents are normal

The Truth Is Out There

The Target's Ancestors left records
    They had other children
        who had descendants
        who took DNA tests too
    They left records
    They led normal lives
    They are well known to Matches
        and to AncestryDNA.

DNA "Magnetism"

Our DNA tests identify Matches
   Segment Triangulation > groups
   Shared Matches > Clusters

Each group tends > one Ancestor/line

These groups can "see" through:
   - No Trees
   - Private Trees
   - Brick Walls!

DNA "Magnetism"

Our DNA tests identify Matches
    Segment Triangulation > groups
    Shared Matches > Clusters

Each group tends > one Ancestor/line

These groups can "see" through:
    - No Trees
    - Private Trees
    - Brick Walls!

Important Concept

Methodology

1. What do we know – for sure
   - set aside all other stories, theories,etc
2. Where do you fit in?
3. The CONCEPT
4. Grouping
5. Sorting/Selecting Groups
6. Genealogy => pinpoint **Target**

1. What do we know

Usually, we've struggled for years – no luck…
Carefully, note what you really, really know
Forget all the rest – for this process
The Matches are going to talk to you – listen to them
Family stories often wrong – maybe with a true tidbit

Avoid confirmation bias

Focus on this process
See what the Matches say
Then, use judgment

2. Where do you fit in?

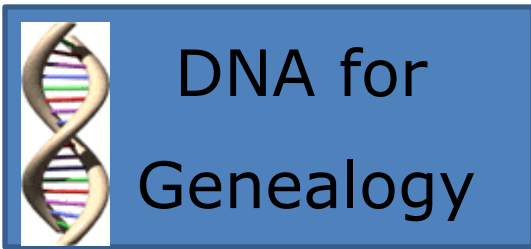How many generations back?
Think about how many groups are probable
What would your relationships be:
- to the Target
- to the Target's parents
- to the Target's grandparents
Reference Shared cM Project /DNA Painter*
- range/probabilities of shared cMs with Matches
- think about cousins removed…
See my handy Crib Sheet – adjust avg. birth years

DNAPainter/SharedcM

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

Other versions

New: with option to add a second amount
Beta with updated probabilities
With editable boxes
Shared cM 3.0 (2017) version

Enter the total number of cM for your match:

[reset]

or enter %

Then any relationships that fit will stand out below

☐ Read more about cousin relationships
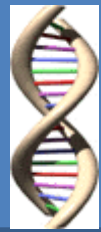
How to read this chart

Relationship
Average
Range
(low to high;
99th percentile)

								Great-Great-Great-Grandparent	GGGG Aunt / Uncle	
						Great-Great-Grandparent	GGG Aunt / Uncle			
Half GG-Aunt / Uncle 208 103 – 284				Great-Grandparent 887 485 – 1486				Great-Great-Aunt / Uncle 420 186 – 713	1C3R 117 25 – 238	2C3R 51 0 – 154	Other Relationships
Half 1C2R 125 16 – 269	Half Great-Aunt / Uncle 431 184 – 668	Grandparent 1754 984 – 2462				Great-Aunt / Uncle 850 330 – 1467	1C2R 221 33 – 471	2C2R 71 0 – 244	3C2R 36 0 – 166	6C 18 0 – 71
Half 2C1R 66 0 – 190	Half 1C1R 224 62 – 469	Half Aunt / Uncle 871 492 – 1315	Parent 3485 2376 – 3720		Aunt / Uncle 1741 1201 – 2282	1C1R 433 102 – 980	2C1R 122 14 – 353	3C1R 48 0 – 192	4C1R 28 0 – 126	6C1R 15 0 – 56
Half 3C 48 0 – 168	Half 2C 120 10 – 325	Half 1C 449 156 – 979	Half Sibling 1759 1160 – 2436	Sibling 2613 1613 – 3488	SELF	1C 866 396 – 1397	2C 229 41 – 592	3C 73 0 – 234	4C 35 0 – 139	5C 25 0 – 117	6C2R 13 0 – 45
Half 3C1R 37 0 – 139	Half 2C1R 66 0 – 190	Half 1C1R 224 62 – 469	Half Niece / Nephew 871 492 – 1315	Niece / Nephew 1740 1201 – 2282	Child 3487 2376 – 3720	1C1R 433 102 – 980	2C1R 122 14 – 353	3C1R 48 0 – 192	4C1R 28 0 – 126	5C1R 21 0 – 80	7C 14 0 – 57
Half 3C2R 27 0 – 78	Half 2C2R 48 0 – 144	Half 1C2R 125 16 – 269	Half Great-Niece / Nephew 431 184 – 668	Great-Niece / Nephew 850 330 – 1467	Grandchild 1754 984 – 2462	1C2R 221 33 – 471	2C2R 71 0 – 244	3C2R 36 0 – 166	4C2R 22 0 – 93	5C2R 18 0 – 65	7C1R 12 0 – 50
Half 3C3R	Half 2C3R	Half 1C3R 60 0 – 120	Half GG-Niece / Nephew 208 103 – 284	Great-Great-Niece / Nephew 420 186 – 713	Great-Grandchild 887 485 – 1486	1C3R 117 25 – 238	2C3R 51 0 – 154	3C3R 27 0 – 98	4C3R 19 0 – 60	5C3R 13 0 – 30	8C 11 0 – 42

Crib Sheet

Rel	Ancestor	numb	avg b yr	TGs (372)
8C	7xG gp	512	1680	1
7C	6xG gp	256	1705	1
6C	5xG gp	128	1737	3
5C	4xG gp	64	1766	6
4C	3xG gp	32	1791	12
3C	2xG gp	16	1820	23
2C	G-grpar	8	1851	47
1C	grparent	4	1883	93
A/U	parent	2	1917	186
sibs	you	n/a	1943	372

Match with CAs

Rel	Ancestor	numb	avg b yr	TGs (372)	MATCHES
8C	7xG gp	512	1680	1	
7C	6xG gp	256	1705	1	~1000
6C	5xG gp	128	1737	3	~1800
5C	4xG gp	64	1766	6	~900
4C	3xG gp	32	1791	12	516
3C	2xG gp	16	1820	23	250
2C	G-grpar	8	1851	47	20
1C	grparent	4	1883	93	0
A/U	parent	2	1917	186	1
sibs	**	n/a	1943	372	me

Matches per Ancestry

DNA for Genealogy

Rel	Ancestor	numb	avg b yr	TGs (372)	MATCHES	Ancestry sez
8C	**7xG gp**	512	1680	1		
7C	**6xG gp**	256	1705	1	~1000	
6C	**5xG gp**	128	1737	3	~1800	
5C	**4xG gp**	64	1766	6	~900	78,000
4C	**3xG gp**	32	1791	12	516	5756
3C	**2xG gp**	16	1820	23	250	
2C	**G-grpar**	8	1851	47	20	
1C	**grparent**	4	1883	93	0	
A/U	**parent**	2	1917	186	1	
sibs	**	n/a	1943	372	me	

Takeaway

We have a LOT of Match/cousins at Ancestry
    - Some will have Trees
    - We will need to build some Trees back for them

May find the right mix at other companies, too.

3. The CONCEPT

Place you and the TARGET on the Crib Sheet
Note/Draw the parent and grandparent boxes
Find groups which probably "fit" this area

DNA for Genealogy

DNA Test Taker (DTT)

Rel	Ancestor	#	birth yr	TGs											
8C	**7xG gp**	512	1680	1											
7C	**6xG gp**	256	1705	1											
6C	**5xG gp**	128	1737	3											
5C	**4xG gp**	64	1766	6											
4C	**3xG gp**	32	1791	12											
3C	**2xG gp**	16	1820	23											
2C	**G-grpar**	8	1851	47											
1C	**grparent**	4	1883	93											
A/U	**parent**	2	1917	186											
sibs	******	n/a	1943	372				DTT							

Target Bio-Ancestor (TBA)

DNA for Genealogy

Rel	Ancestor	#	birth yr	TGs												
8C	**7xG gp**	512	1680	1												
7C	**6xG gp**	256	1705	1												
6C	**5xG gp**	128	1737	3												
5C	**4xG gp**	64	1766	6												
4C	**3xG gp**	32	1791	12												
3C	**2xG gp**	16	1820	23												
2C	**G-grpar**	8	1851	47						TBA						
1C	**grparent**	4	1883	93												
A/U	**parent**	2	1917	186												
sibs	******	n/a	1943	372			DTT									

Ancestry of TBA

DNA for Genealogy

Rel	Ancestor	#	birth yr	TGs									
8C	7xG gp	512	1680	1									
7C	6xG gp	256	1705	1									
6C	5xG gp	128	1737	3									
5C	4xG gp	64	1766	6									
4C	3xG gp	32	1791	12		PGF		PGM		MGF		MGM	
3C	2xG gp	16	1820	23			F				M		
2C	G-grpar	8	1851	47				TBA					
1C	grparent	4	1883	93									
A/U	parent	2	1917	186									
sibs	**	n/a	1943	372			DTT						

Many Ancestors

Rel	Ancestor	#	birth yr	TGs
8C	7xG gp	512	1680	1
7C	6xG gp	256	1705	1
6C	5xG gp	128	1737	3
5C	4xG gp	64	1766	6
4C	3xG gp	32	1791	12
3C	2xG gp	16	1820	23
2C	G-grpar	8	1851	47
1C	grparent	4	1883	93
A/U	parent	2	1917	186
sibs	**	n/a	1943	372

PGF   PGM   MGF   MGM

F   M

TBA

DTT

DNA for Genealogy

Rel	Ancestor	#	birth yr	TGs
8C	7xG gp	512	1680	1
7C	6xG gp	256	1705	1
6C	5xG gp	128	1737	3
5C	4xG gp	64	1766	6
4C	3xG gp	32	1791	12
3C	2xG gp	16	1820	23
2C	G-grpar	8	1851	47
1C	grparent	4	1883	93
A/U	parent	2	1917	186
sibs	**	n/a	1943	372

You don't know these Ancestors, but some of your Matches do!!

F   M

TBA

DTT

Takeaway

The Target Bio-Ancestor has many Ancestors

Most, if not all, Ancestors married & left records
Most, if not all, Ancestors had multiple children
    - and descendants
    - some are our Matches

Each case is different….
    - no one-size-fits-all

IMO: DNA/Matches "work" out to 8C/7xGgp level; 1680

4. Grouping

Two basic kinds of Groups:
1. Use Shared Matches => **Cluster**
   - *tend* to form on **one Ancestor**
   - all companies
2. Use DNA Segments => Triangulated Group (**TG**)
   - from on an **Ancestral line** (you to an Ancestor)
   - all, but Ancestry

Grouping Tools/Methods

1. Leeds Method* – Closest Matches > 4 grandparents
2. Auto-Clustering*
   - Genetic Affairs (FTDNA, 23andMe, MyHeritage) $
   - DNAGedcom Client (all companies) $
   - GEDmatch Tier 1 $
   - MyHeritage $
3. Manual Clustering [compare Shared Match lists]*
4. Segment Triangulation (GEDmatch & Segmentology*)
5. DNA Painter* (paint segments)
6. What Are The Odds (WATO)* – where a Match fits
7. Walk The Clusters Back (WTCB)* – start with Leeds
   -links Ancestry Clusters to TGs
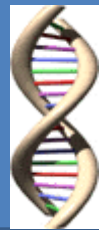* See URLs/hyperlinks > last slide and in handout

5. Sorting/Selecting

Sorting/Selecting Groups (Clusters or TGs)
Pick Groups that focus on the **Target**
-Best done by **eliminating known** Ancestor Groups.
>Diahan Southard RootsTech 2023 Talk*
-Walk groups back* from parent > grparent > Target
-Use TGs with close cousins "below" Target*

Adjust cM in Clusters to aim focus on a generation
-Leeds uses 90cM for 4 grandparents
-Lower slightly (say 75-80cM) for 8 G-grandparents
-Keep lowering to get 16+/- Clusters, etc.

6. Genealogy

Pick a Group – easiest is a Cluster at Ancestry
-view available Trees of Matches
-review/record surnames for generation beyond Target
-**determine Common Ancestor for the Cluster**
-may need to build Quick & Dirty Trees for some

This is the heart & soul of this process
1. Determine Group(s) through **Target** to Ancestors
2. Determine Common Ancestors in each Group
3. Use genealogy to find marriages between Groups
4. **BINGO** – these will be the Test Taker's Ancestors

Case - 1

Bio-father:

Simple Clusters with closest Matches (Leeds*)
- spreadsheet or scratch paper
4 groups – discard two on maternal side
Remaining two: find Common family in each
One person in one, mated with one person in other
These are your bio-grandparents
Their child is Bio-father
Tester: Catholic-Italian-parents: DNA = 1/2 Jewish
top Jewish Matches > 2 surnames/families
intermarriage => BINGO [grandparents!]
5 sons to WWII – then 4 to PA; 1 to NY
NY son lived blocks away from Tester's fam.

Case - 2

Bio-Great grandfather:
Big-Y exact Matches (with me) > BARLETT surname
  His <u>grandfather</u> was orphan or foster child

Clusters and TGs through Target = BARTLETT + others
161 WV/MD BARTLETT Matches
Exhaustive effort > conclusion:
  Target was tic-mark in 1840 census
  No further records; possibly mated and died
Analysis of 161 Match-cousins >> G-grandparents +.
Tree now known – except for Target!

DNA for Genealogy

<u>Bio-Father or Grandfather</u>
Father left when Test Taker (b 1977) was an infant
DNA Matches: Maternal side: good; Paternal side: nada
Took **top Ancestry Matches – down to 30cM** or so…
Cast out maternal side (manually – before "Sides")
Built spreadsheet of every surname in Trees [built some]
About 7 clear Surname "winners"
Developed Trees (one on my BARTLETTs)
Found some cross-marriages; some not
<u>Finally</u>: bio-father was infant "grandson" in 1950 family;
dau (mother) away, but just grad from high school;
father was teacher at same school;
Other NPEs in ancestry – we used up all the Surnames.
It worked!

Case - 4

3xG Grandmother:
Thomas NEWLON c1770-1813; 3 children; then m 1805
Who was his first wife (my Ancestor)? 4C level*
One **TG** [01S24], included several 2C & 3C Matches;
    but despite many Matches in TG, none at 4C level
Other TGs went back on Thomas NEWLON's side
This TG probably back on his wife's side: **the Target**

Tracked surnames of Matches in TG
"Winner" was CUMMINGS – a new surname for me
Found over 30 CUMMINGS in TG (all 3 sites)
Messaged other Shared Matches at Ancestry, who
acknowledged CUMMINGS back to 7xG grandfather!

Case Summary 1

The **TAKEAWAY**:

In each of the examples:
  - Matches in Groups from unknown Tree areas
  - Studied to find **their** Common Ancestor/family
  -These became Ancestors to the DNA Test Taker

Let your Matches speak from behind Brick Walls.

Try it on a Group with no distant Ancestor – see what your Matches tell you – maybe a new surname.

Bio-Parents are relatively easy to determine
- -Closest Matches on proper side
- -Build two trees – find intermarriage/mating => child

Bio-Grandparent: Leeds minus 3 => one group;
- -Add a few more high-cM Matches => 2 families
- -Build two trees – find intermarriage/mating => child

Each generation back gets harder and harder
- -**Key** is culling out Groups; pick likely Group
  - -known cousins in Group => keep/cull decisions
- -Review Trees to find Common Surname(s)
- -Matches' Common Ancestors are **yours too**.
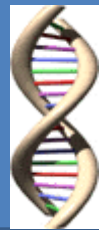
Guaranteed?

No – of course not!
Very little in genetic genealogy is guaranteed

Very helpful – **youbetcha**!

The concept is sound – your Target had Ancestors
Almost certainly, some of your Matches had them, too.
   -Use the tools to learn from your Matches

But each case is unique
   - and there may be "curve balls"

Some Curve Balls

Known: Target mated; child (your Ancestor) born, lived...
Unknowns:

    Maybe no marriage…

    Target left few/no records (or records destroyed)

    Target and/or Ancestors were immigrants

    Chance encounter/fling?

    Target was a fugitive – trying to hide?

    Name change?

    Target's parent(s) died young

    Sperm/egg donation?

Something caused him/her to remain hidden…

Homework

Use Notes at AncestryDNA (and other companies)
    -Type in Common Ancestors; other key info
        [I type in path from CA to Match]
    -Type in TG segment(s) summary
    -Type in any Shared Match consensus (group)
Use Dots at Ancestry (and MyHeritage)
    -At the least: 4 grandparent Dots
        (use a review of Shared Matches)
I try to visit and Note/Dot all Matches > 20cM

Invaluable when reviewing Shared Matches & Clusters

Genealogy follow-up

Critical thinking from genealogy viewpoint
   -Right time and place
   -Develop the "story"
   -Does the "story" look logical
   -Look for more records

DNA follow-up

You have a "hypothesis" new Tree branch
   -How can you test this hypothesis with DNA
   -Do Matches share appropriate amounts of DNA?

Build this new branch back several more generations
   -More Matches should share across this ancestry!
   -ThruLines & Theories of Family Relativity??

Summary

Your unknown bio-Ancestor (brick wall) = **Target**:

    -had a full set of Ancestors (like every other human)

    -those Ancestors had children/descendants

      - and they probably left records

    -**some descendants are your Matches!**

Grouping (TGs and/or Clusters)

    -help target the bio-Ancestor's ancestry

Matches in a Group tell you their Common Ancestor

    - **this is your Ancestor**, too.

Not guaranteed… several Curve Balls possible.

Works most of the time! Try it!

*References/Links

Segmentology blog: https://segmentology.org/ by Jim Bartlett jim4bartletts@verizon.net
Outline/Table of Contents: https://segmentology.org/outline-of-segmentology/
Triangulating Your Genome: https://segmentology.org/2020/12/29/triangulating-your-genome/
Manual Clustering to Find Ancestors: https://segmentology.org/2022/02/26/manual-clustering-to-find-ancestors/
Walking the Clusters Back: https://segmentology.org/2022/08/09/wlaking-the-clusters-back-wtcb-2022/
Clustering Programs: https://segmentology.org/2019/04/04/clustering-programs/
D I Y Clustering: https://segmentology.org/2019/02/18/d-i-y-clustering/
Breaking Through a Brick Wall (with a TG):
https://segmentology.org/2019/08/05/ahnentafel-37p-breaking-through-a-brick-wall/
Finding Bio-Ancestors: https://segmentology.org/2022/06/02/finding-bio-ancestors-2/
 Diahan Southard's RootsTech2023 Talk on Shared DNA Matches
https://www.familysearch.org/rootstech/session/shared-dna-matches-the-only-dna-tool-you-will-ever-need?lang=eng
DNA Painter/Shared cM: https://dnapainter.com/tools/sharedcmv4 cf: WATO
The LEEDS Method: https://www.danaleeds.com/the-leeds-method/

QUESTIONS

DNA for Genealogy

Rel	Ancestor	numb	avg b yr	TGs	~cM
8C	7xG gp	512	1680	1	11
7C	6xG gp	256	1705	1	14
6C	5xG gp	128	1737	3	18
5C	4xG gp	64	1766	6	25
4C	3xG gp	32	1791	12	35
3C	2xG gp	16	1820	23	73
2C	G-grpar	8	1851	47	229
1C	grparent	4	1883	93	866
A/U	parent	2	1917	186	
sibs	you	n/a	1943	372	

Remember: Change <u>avg b yr</u> dates for yourself

DNA for Genealogy

Tree & Match Group

Rel	Ancestor	#	birth yr	TGs
8C	**7xG gp**	512	1680	1
7C	**6xG gp**	256	1705	1
6C	**5xG gp**	128	1737	3
5C	**4xG gp**	64	1766	6
4C	**3xG gp**	32	1791	12
3C	**2xG gp**	16	1820	23
2C	**G-grpar**	8	1851	47
1C	**grparent**	4	1883	93
A/U	**parent**	2	1917	186
sibs	**	n/a	1943	372

166

83

41

20

8   9   10   11   12   13   14   15

Gpar   Gpar   Gpar   Gpar

Father   Mother

M1   M2   M3   M4   M5   M6   YOU   M7   M8   M9   M10 M11

Normally

Rel	Ancestor	#	birth yr	TGs
8C	7xG gp	512	1680	1
7C	6xG gp	256	1705	1
6C	5xG gp	128	1737	3
5C	4xG gp	64	1766	6
4C	3xG gp	32	1791	12
3C	2xG gp	16	1820	23
2C	G-grpar	8	1851	47
1C	grparent	4	1883	93
A/U	parent	2	1917	186
sibs	**	n/a	1943	372

166

83

41

20

8   9   10   11   12   13   14   15

Gpar   Gpar   Gpar   Gpar

Father   Mother

M1 M2 M3 M4 M5 M6 YOU M7 M8 M9 M10 M11

49
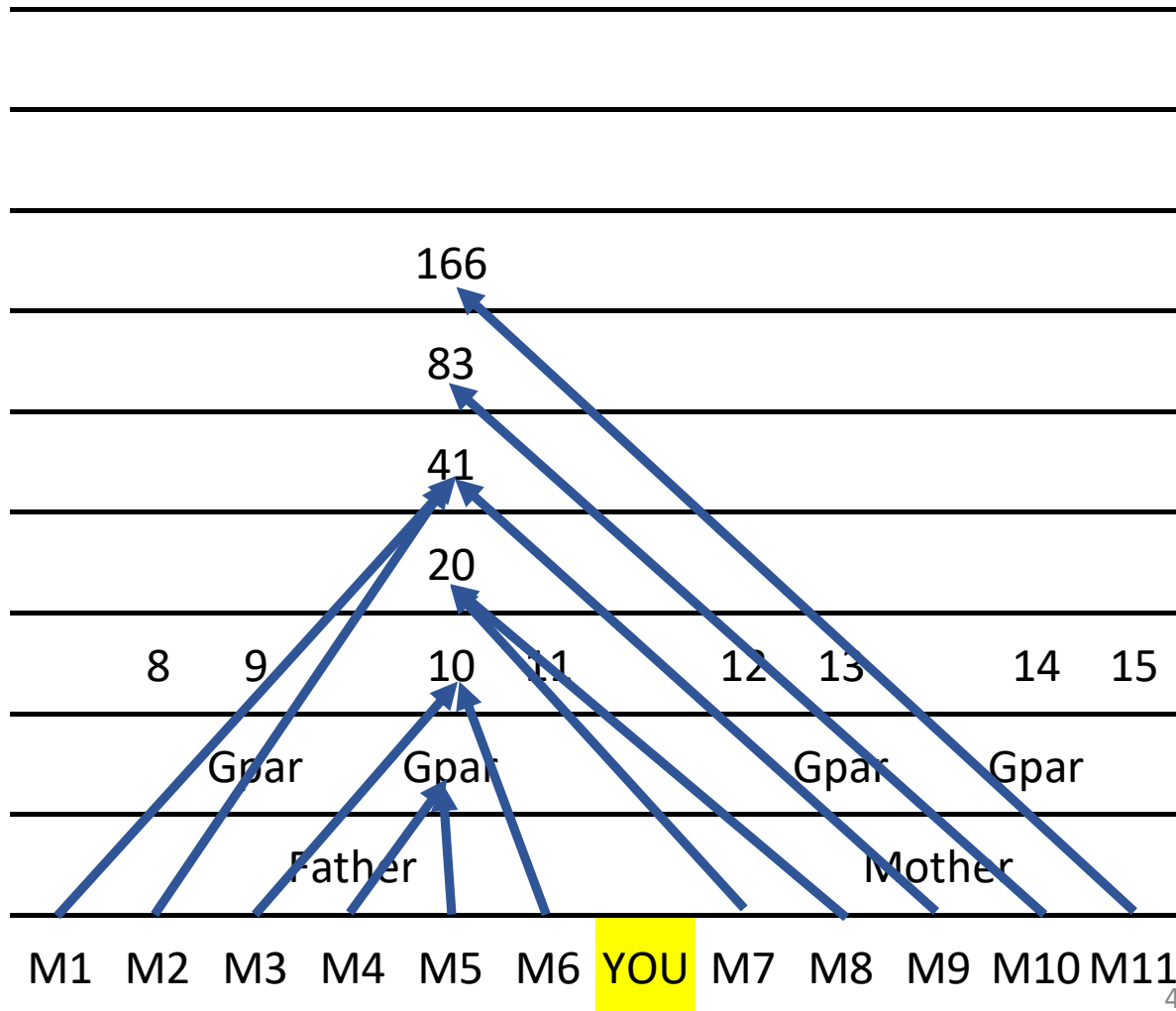
DNA for Genealogy

"Stunted" Group
[lots of Matches, few MRCAs]

Rel	Ancestor	#	birth yr	TGs
8C	7xG gp	512	1680	1
7C	6xG gp	256	1705	1
6C	5xG gp	128	1737	3
5C	4xG gp	64	1766	6
4C	3xG gp	32	1791	12
3C	2xG gp	16	1820	23
2C	G-grpar	8	1851	47
1C	grparent	4	1883	93
A/U	parent	2	1917	186
sibs	**	n/a	1943	372

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8   9   10   11   12   13   14   15

Gpar   Gpar   Gpar   Gpar

Father   Mother

M1 M2 M3 M4 M5 M6 YOU M7 M8 M9 M10 M11

50

The Truth Is Out There

DNA for Genealogy

Rel	Ancestor	#	birth yr	TGs
8C	7xG gp	512	1680	1
7C	6xG gp	256	1705	1
6C	5xG gp	128	1737	3
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8   9   10   11   12   13   14   15

Gpar   Gpar   Gpar   Gpar

Father   Mother

M1   M2   YOU   M9 M10 M11