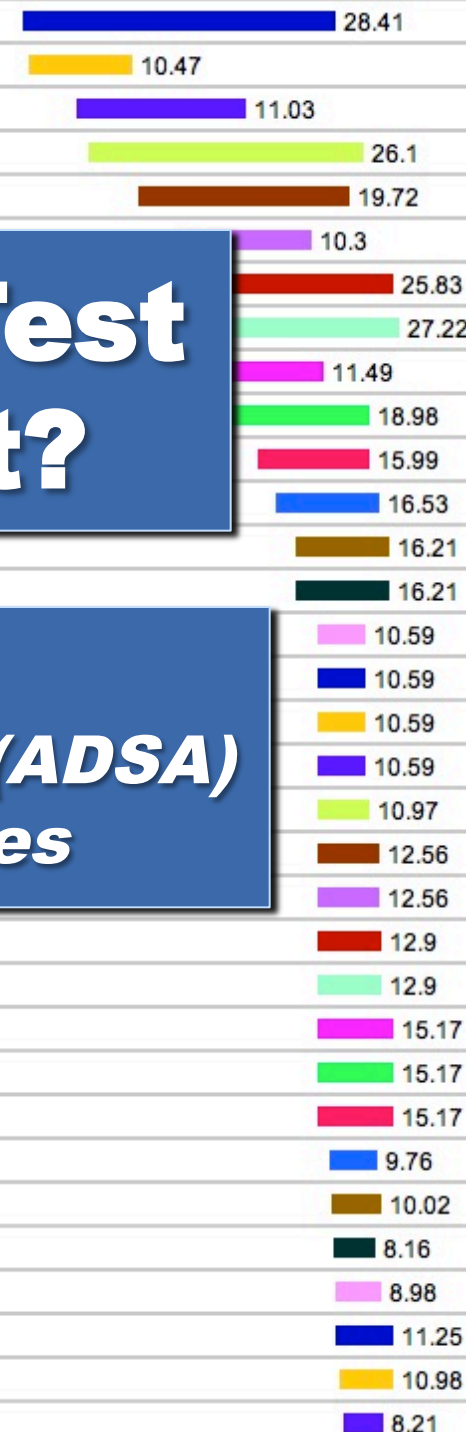


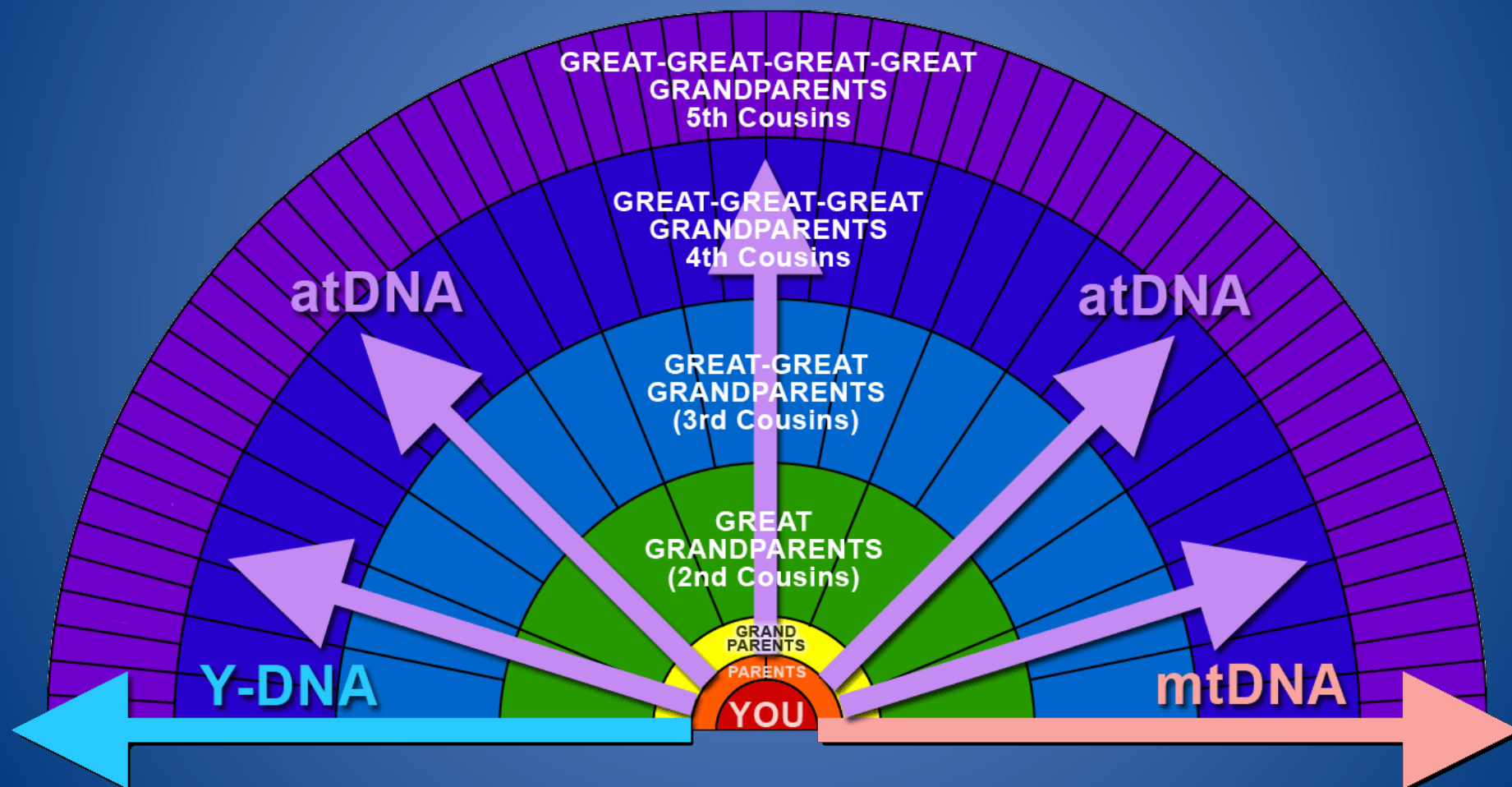
I Got My Autosomal Test Results... Now What?

*Using the
Autosomal DNA Segment Analyzer (ADSA)
to Visualize Your atDNA Matches*

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Genealogical Scope of DNA Tests



I just got my autosomal DNA test results back...

The screenshot shows the myFTDNA website interface. At the top, there is a navigation bar with links: Home, My Account, Projects, Family Finder, Y-DNA, mtDNA, Other Results, Resources, and an orange button labeled "Order An Upgrade". The user is logged in as "Living Bisher" with kit number "299497". Below the navigation bar, there is a "Welcome to myFTDNA" message and links for "Interactive Tour", "Feedback", "Refer Friends & Family", and accessibility icons. The main content area is divided into three columns. The left column, titled "Your Account", includes sections for "Order History" (showing a "Family Finder Kit" ordered on 7/18/2013), "Projects" (showing "Bishir/Bisher"), and "Profile" (with links for "Manage Personal Information", "Manage Personal Profile", and "Change Password"). The middle column has three boxes: "Refer A Friend" with a link "Click Here For More Info!", "Interpret Your Results" with a link "Download Your eBook!", and "Share Experience" with a link "Click Here To Share!". The right column features a Facebook "f" logo. Below these columns, there is a "Family Finder" section with a question mark icon, showing "Results Completed: 7/18/2013" and "Last Close Match: 9/25/2013". Below this are four buttons: "Matches", "Chromosome Browser", "Known Relationships", and "Population Finder". At the bottom right, there are links for "Matrix", "Advanced Matches", "Download Raw Data", and "Learn More".

...But it's too complicated! I'm confused.



You could just email every match

The screenshot shows the FamilyTreeDNA website interface. At the top, there's a search bar with the text "Enter a name or place to begin searching" and a magnifying glass icon. To the right of the search bar are links for "Upgrade" and "My Cart". Below the search bar, there's a navigation menu with "myFTDNA", "DNA Tests", "Projects", and "Resources". A banner message states: "The Bishir/Bisher project is participating in the myGroups Beta! [Click here](#) to see your new myGroups page."

The main section is titled "FAMILY FINDER - MATCHES". It includes links for "Feedback", "Refer Friends & Family", and "Page Tour". Below this, it shows "Most Common Surnames: 13 Thomas, 8 Johnson, 8 Wright". A large red text overlay says "1,190 MATCHES!". Below this, there are filters for "Relations: Show All Matches" and "Sort By: Relationship Range". A red arrow points from the "1,190 MATCHES!" text to the "119" in the pagination controls. The pagination controls show "Show Full View" and a series of numbers "1 2 3 4 5" with "119" highlighted in a red circle. Below the pagination, there's a table of matches with columns: "Match Date", "Relationship", "Known Relationship", "Shared cM", and "Ancestral Surnames". The table lists three matches: Adrienne Woodruff (Sister, 2774.00 cM), Living Bisher (Sister, 2693.01 cM), and Ms. Betty Bisher (Aunt, 1621.40 cM). Each match entry includes a profile picture, a name, a match date, a relationship, a shared cM value, and a list of ancestral surnames. A red circle highlights the "119" in the pagination controls.

Match	Match Date	Relationship	Known Relationship	Shared cM	Ancestral Surnames
Adrienne Woodruff	8/30/2013	Sister		2774.00	Barr / Beam / Bisher / Bishir / Bitzer / Bowman...
Living Bisher	9/25/2013	Sister		2693.01	Barr / Beam / Bisher (PA1790, OH1820-1920)...
Ms. Betty Bisher	11/1/2013	Aunt		1621.40	Barr / Beam / Bisher / Bishir / Bitzer / Bowman...

But There's a Smarter Way...

Triangulate!

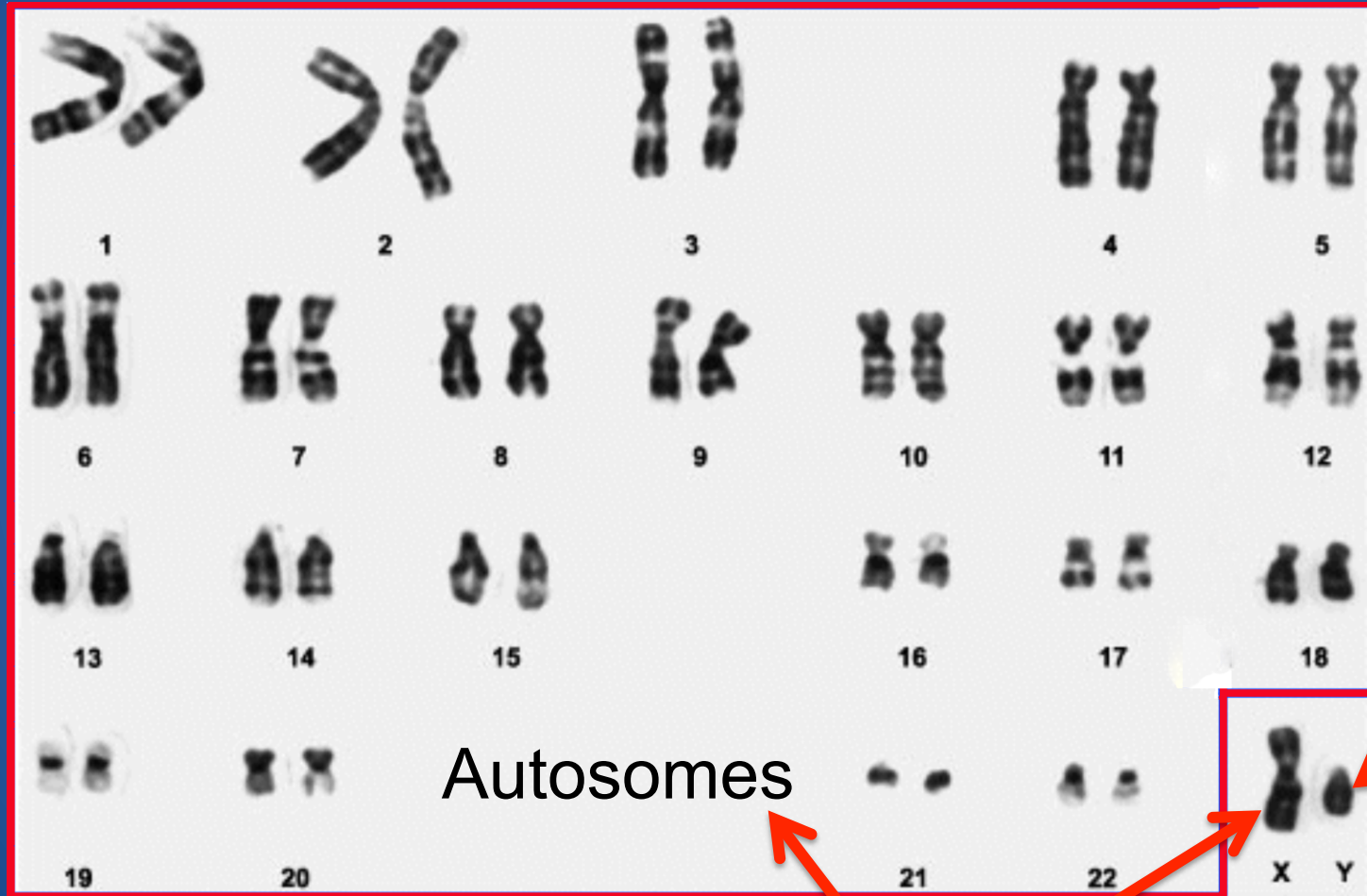
Use Triangulated Groups (TG) to identify groups of distant cousins who share a common ancestor



- A TG is three or more people who share the same sequence of DNA at the same location on the same chromosome
 - Analyze your matches in batches (not one at a time)
 - Increase the likelihood that matches are valid
 - Separate maternal from paternal matches
 - Improve the odds of finding the common ancestor & get it done faster by collaborating with a group

23 Chromosome Pairs

46 Chromosomes in all



Autosomes

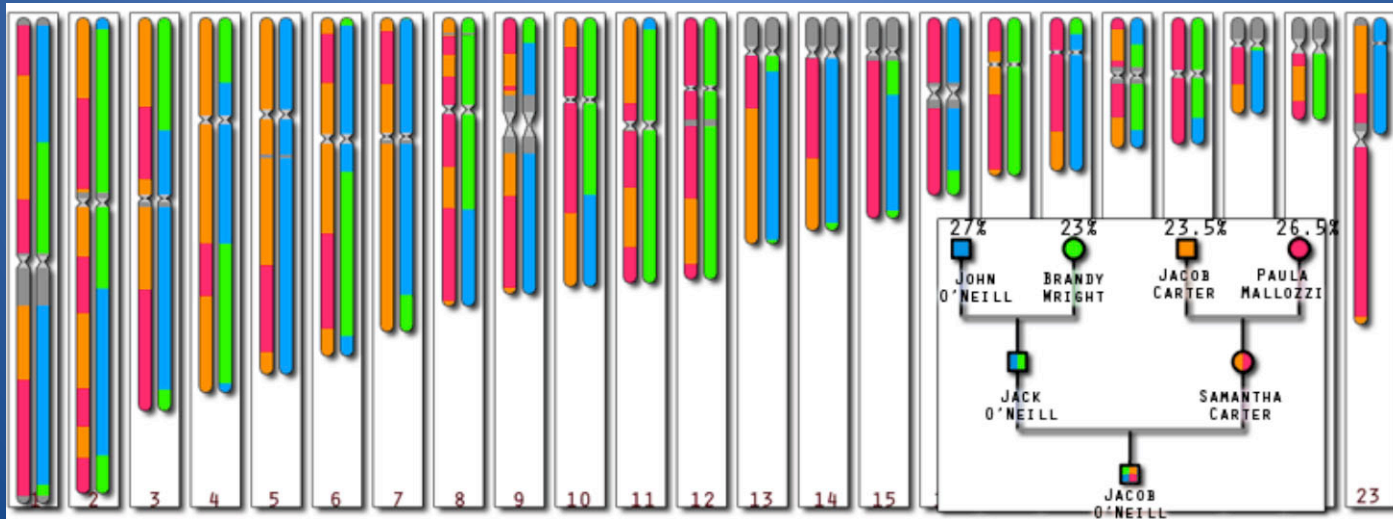
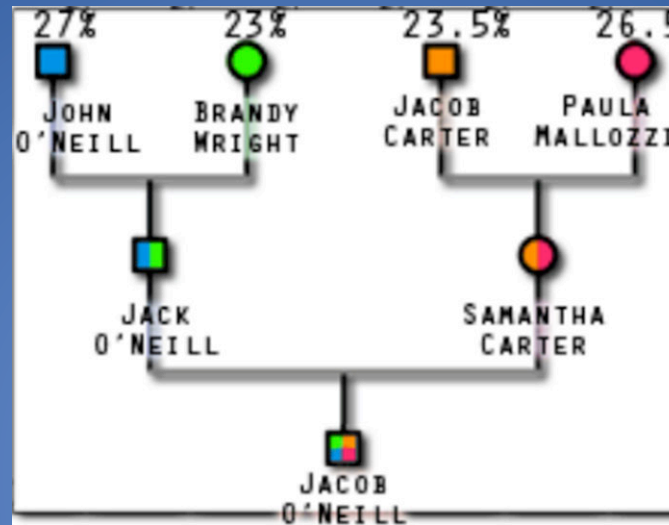
Y-DNA

mtDNA

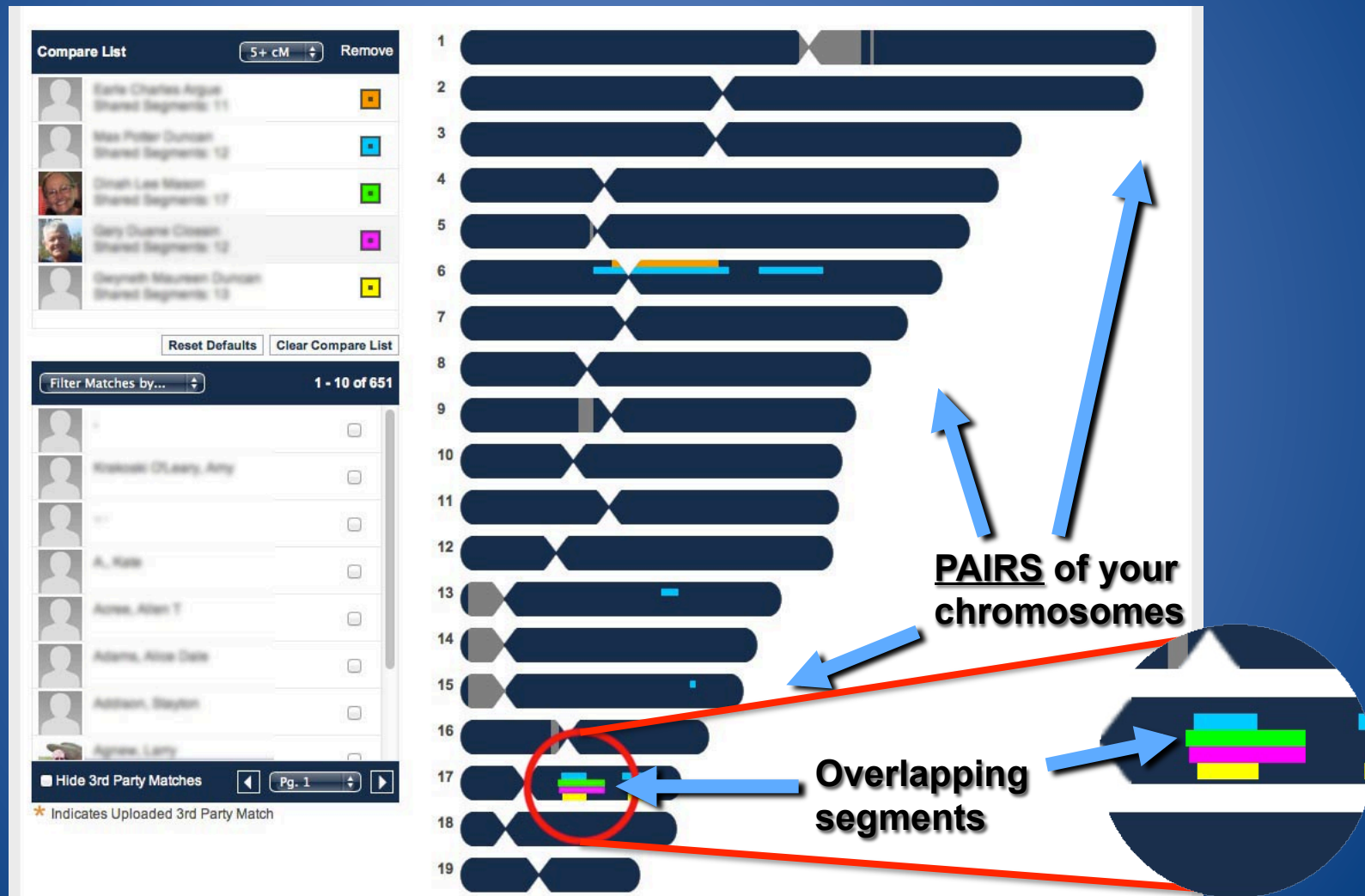
atDNA

DNA Chopped Salad

<http://www.dnainheritance.kahikatea.net/autosomal.html>



Chromosome Browser

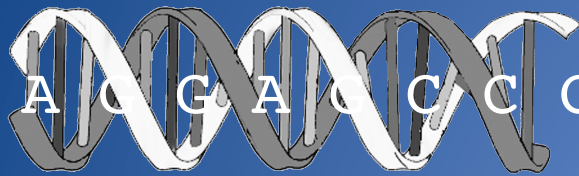


FamilyTreeDNA's Chromosome Browser

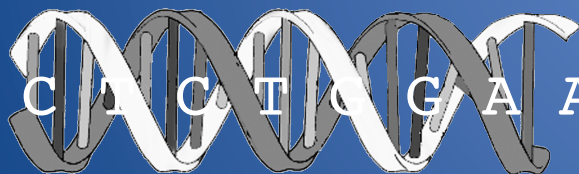
What is a Matching Segment?



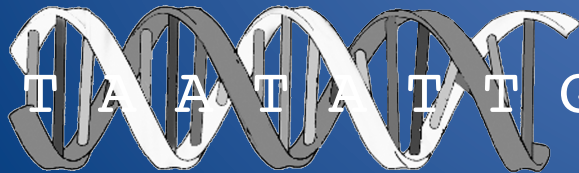
G = Guanine C = Cytosine A = Adenine T = Thymine



YOUR CHROMOSOME PAIR



COUSIN'S CHROMOSOME PAIR



A C G A C C C A G **G G T G** **G G T C** G G A G →


A C G G C C C A G **G A C G A G T C** G G T G →

MATCHING SEGMENT

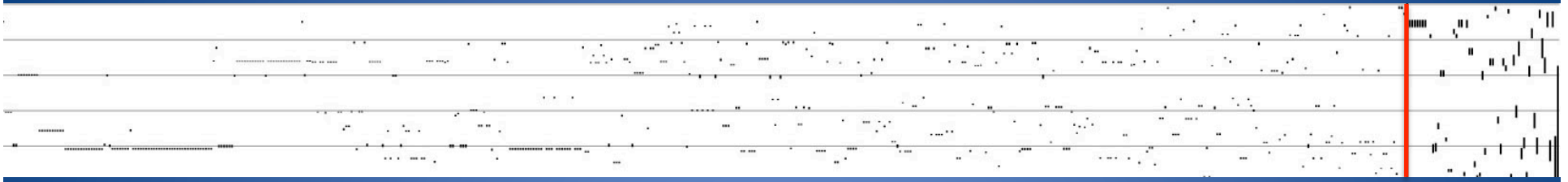
C C C T C G A A G C **G A T A** **G G T C** T C C A →

T A A T A T T G T C A **A T G G A C T** T A G C →

Triangulation Step by Step

1. Pick out a nice, long matching segment
 2. Find all the matching segments that overlap it
 3. Compare In-Common-With (ICW) matches
To ensure everyone in the group is related to everyone else
 4. You've found a Triangulated Group (TG)!
You & the group members probably share a common ancestor
 5. Compare ancestral surnames for clues
 6. Contact everyone in the group by email
To help you find the common ancestry
 7. Find the next Triangulated Group and repeat...
- 

Picking Segments



1 cM

Don's segments on chromosome 1

8 cM

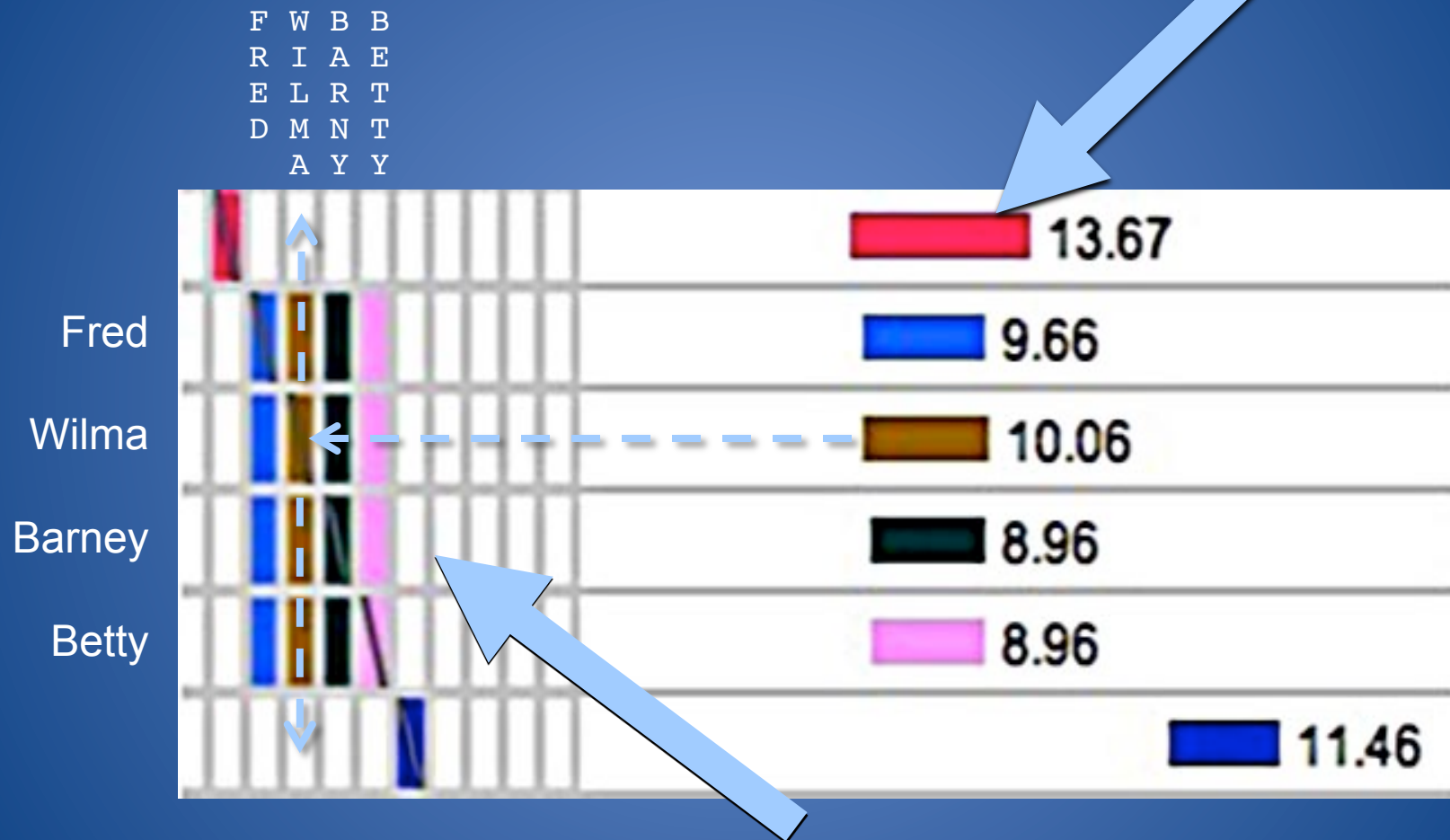
- cM (centiMorgans) is a measure of segment “length”
- Closer relatives have more & longer segments of matching DNA with you
- Identical By State (IBS) vs Identical By Descent (IBD)
- Most segments under 7 cM are IBS

Matching Segment	% IBD	% IBS
15 cM	>99%	<1%
13 cM	99%	1%
12 cM	97%	3%
11 cM	90%	10%
10 cM	86%	14%
9 cM	80%	20%
8 cM	62%	38%
7 cM	42%	58%
6 cM	26%	74%
5 cM	14%	86%
4 cM	5%	95%
3 cM	1%	99%

I Suggest...

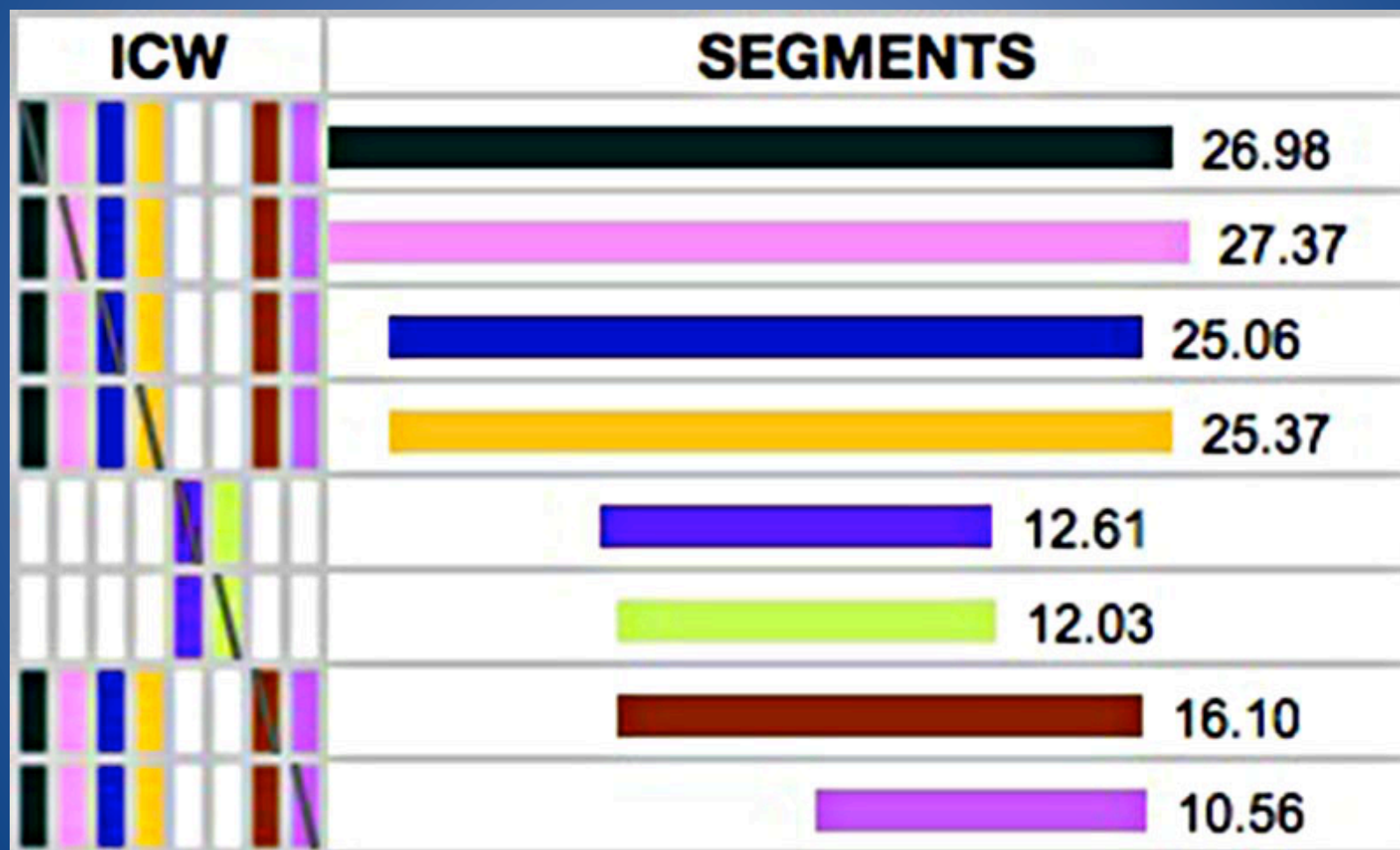
- Start with your longest segment
 - or a segment for your closest predicted relationship
 - or a longish segment with a surname of interest
- Examine short segments (< 10 cM) last, or as they appear in triangulated groups
 - Short segments are more likely to be IBS (non-IBD), but a short segment that is part of a TG is more likely IBD
 - Even if a short segment is IBD, it may be very hard to find the common ancestor
- Check out segments that are not in any TG too

Look For Overlapping Segments



And In-Common-With (ICW) Matches

Matches on Both Mom's & Dad's Chromosomes



Check Surnames For Clues

Karlton Leslie Shattlerick - shattlerick@comcast.net

Matched 7/6/2012, Relationship: 4th Cousin - Remote Cousin
U4a2

Evans (Wales) / Sowden (England) / Rundle (England) / Leslie/Lassley/Lassly (Ireland/Scotland) / McKane (Ireland/Scotland) / Tyler (England) / Calkins (England) / Smith (England) / Johnson (England) / Bartholomew (England) / Parmalee (England) / Miszler (Alsace Lorraine) / Rickard (Germany) / Brannan/Branning (Ireland) / Quick (Holland) / Decker (Holland) / Felker (Germany) / Transue (Palmdale area) / Bateman (Chester, England?) / Cocklin (Marblehead, MA) / Wood (Ashford, CT) / Chapman (Ashford, CT) / Jennings/Ginnings (Ashford, CT) / Mitchell (England) / Ross (Boundbrook, NJ)

- Look for surnames you have in your tree
- Find surnames TG members have in common
- Check locations too (if given)

Contact TG Members

- Send one standardized email to TG members:
 - Ask them to REPLY-ALL
 - Summarize the names, locations and dates in your tree (7 or 8 generations)
 - Attach a list of your surnames
 - Link to your public tree (eg. Ancestry, WikiTree, etc.)
 - Attach a saved copy of your ADSA report
- Stay organized:
 - A folder for each TG with the emails and files you've exchanged with group members



01 TRI Daniel Powell -
Michael Hoyle

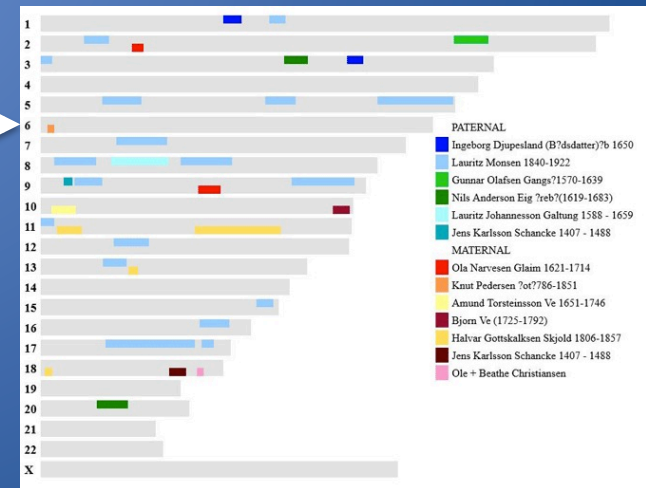
Stack The Deck

Test close relatives you know...

- Older Relatives First! (Parents, Aunts, Uncles)
 - Older generations give you more “reach”
 - Great for phasing, triangulation & to find more matches you don’t have
- 1st or 2nd cousins
 - Can narrow search for common ancestors
- Siblings
 - Find matches you don’t have & phasing

Stack The Deck

- Post your tree and ancestral surnames!!!
- Fish in more ponds: test with more than one company to get into more match data bases
- Put your data on GEDMATCH.com so even more people will find you
- Map your genome



<http://blog.kittycooper.com>

A Quick Word About Privacy...

Demonstration

www.dnagedcom.com

Questions?

ADSA:

www.DNAgedcom.com/adsa

“How To” Manual (for new ADSA):

tinyurl.com/adsamannual

Kelly Wheaton’s Intro to Genetic Genealogy:

tinyurl.com/dnabeginner

worth@ucla.edu



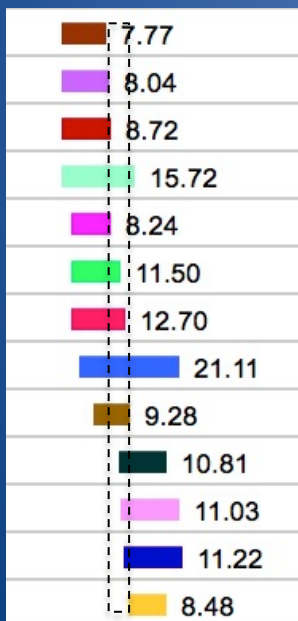
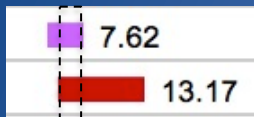
Stack The Deck

A lesson I learned the hard way...

It's probably not worth investing in testing known 4th or 5th cousins

Relationship	Match Probability
2nd cousins or closer	> 99%
3rd cousin	> 90%
4th cousin	> 50%
5th cousin	> 10%
6th cousin and more distant	Remote (typically less than 2%)

How Much Overlap?



- You need enough overlap so that the overlap could be the reason for the ICW match between your matches
- If a segment belongs to two separate TGs, then they may actually form one big TG – even if earlier segments don't overlap later ones.

Genetic Genealogy Testing

Four kinds of tests

- **Y-DNA**

Dad's-dad's-dad... going way, way back (can test males only) & SNP tests to zero in on haplogroup

- **mtDNA**

Mom's-mom's-mom... going way, way back

- **Autosomal DNA**

Any line but best up to 5 or 6 generations

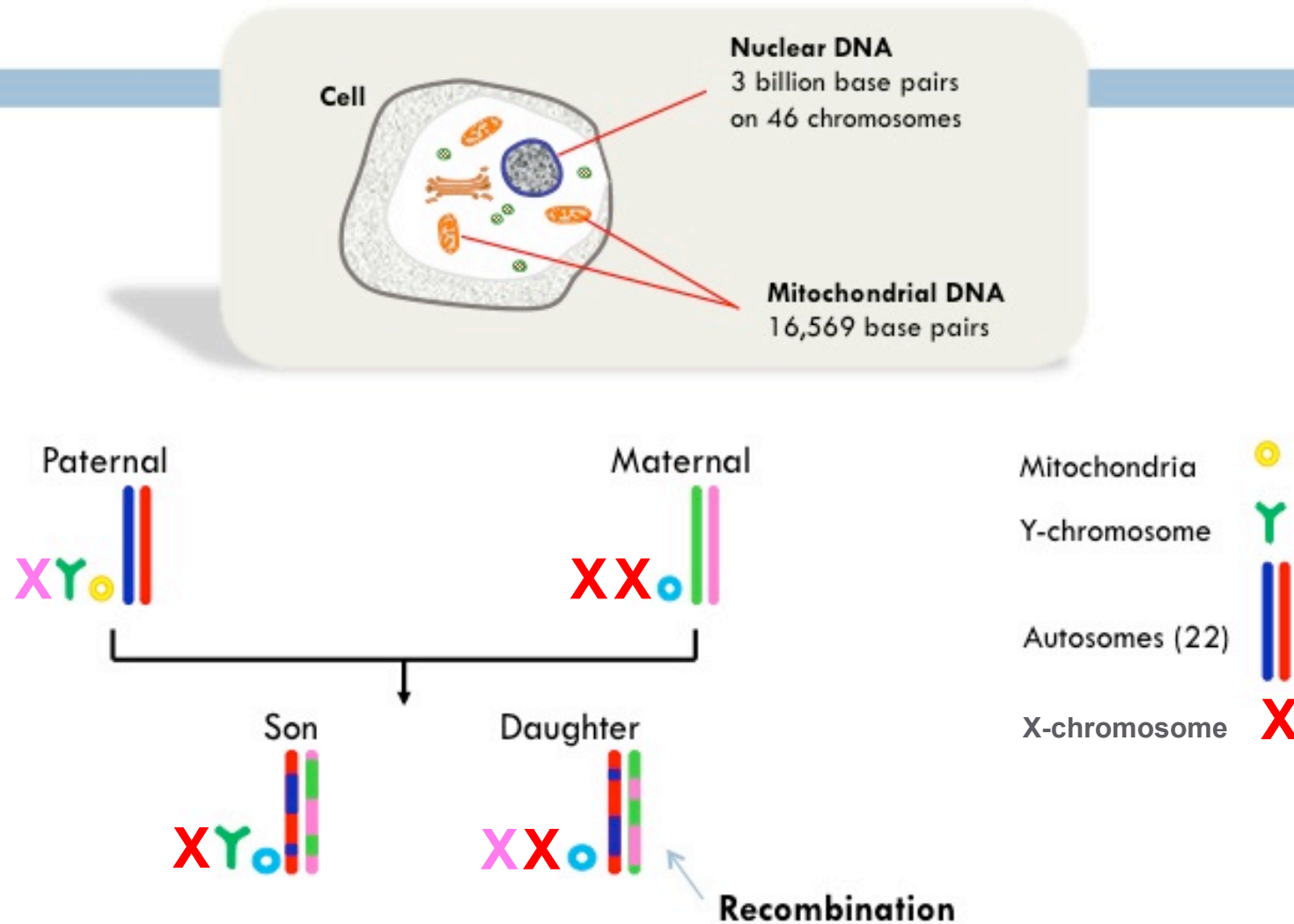
May include admixture (deep ancestry) & medical

- **X-DNA**

Many lines but males don't get an X from dad

Often included in Autosomal DNA test results

Location & inheritance of human DNA



Adapted from: Simon's DNA Musings, simonsoutherton.blogspot.com