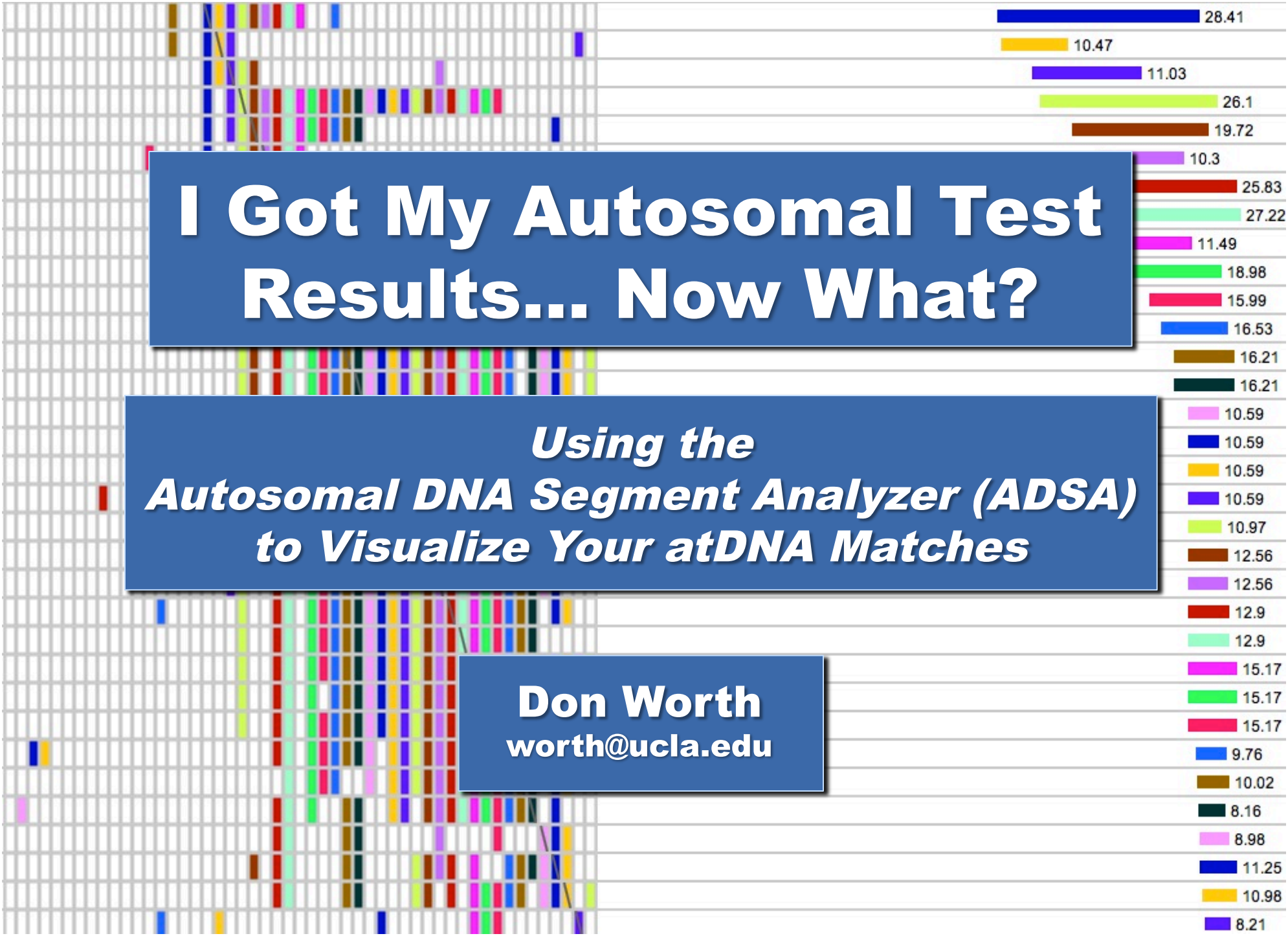
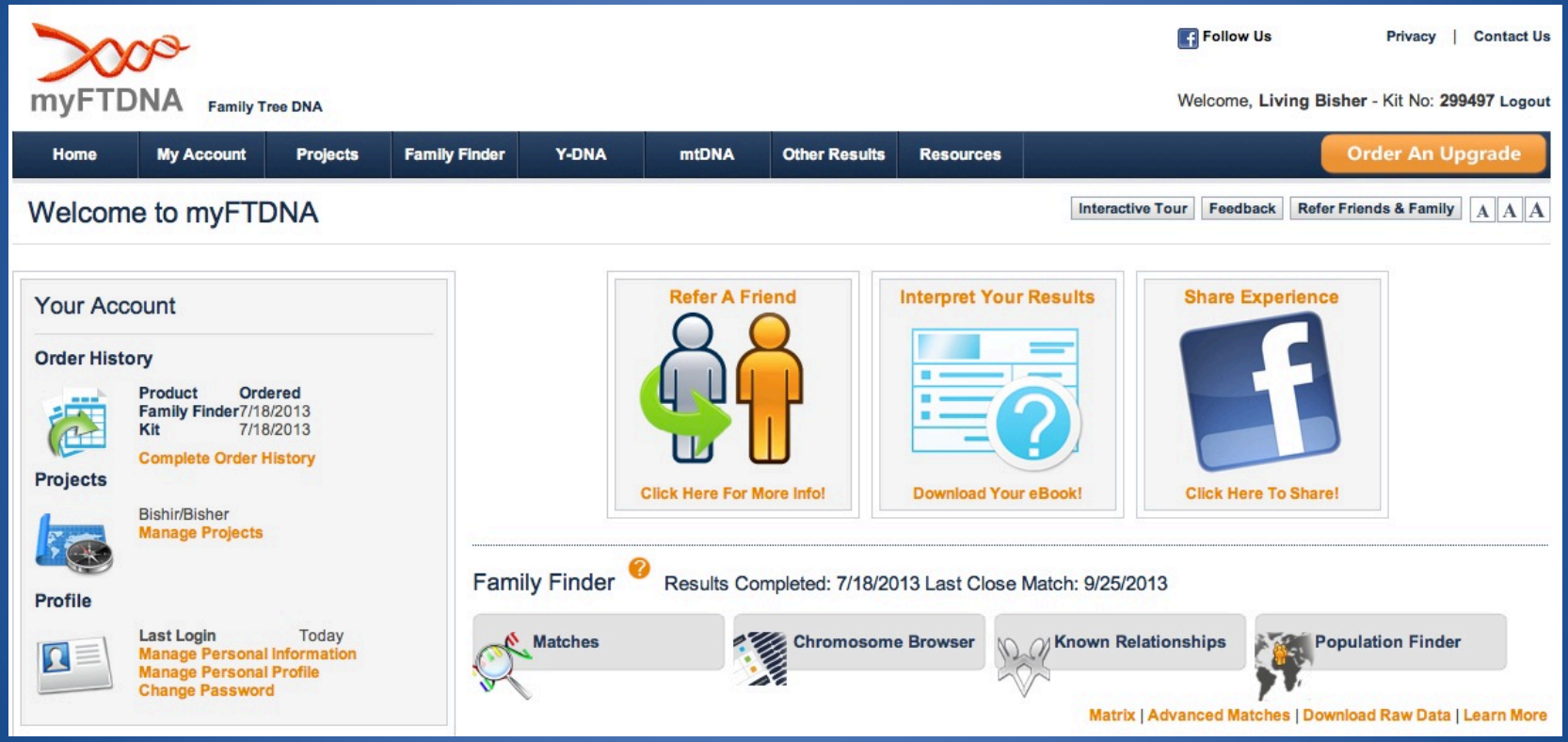


I Got My Autosomal Test Results... Now What?

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

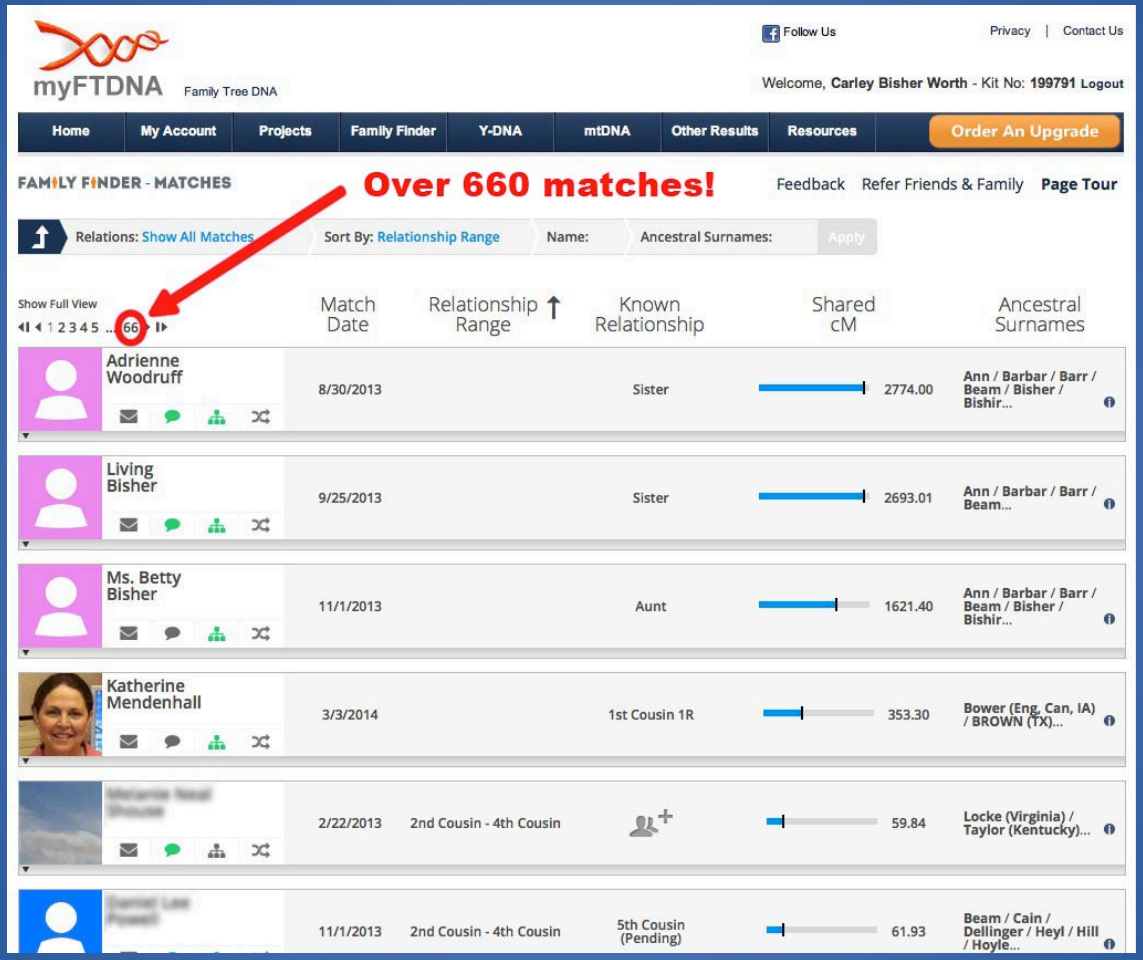
Don Worth
worth@ucla.edu

I just got my Family Finder results back…



…But it's so complicated! I'm confused.

You could just email every match



But There's a Smarter Way…

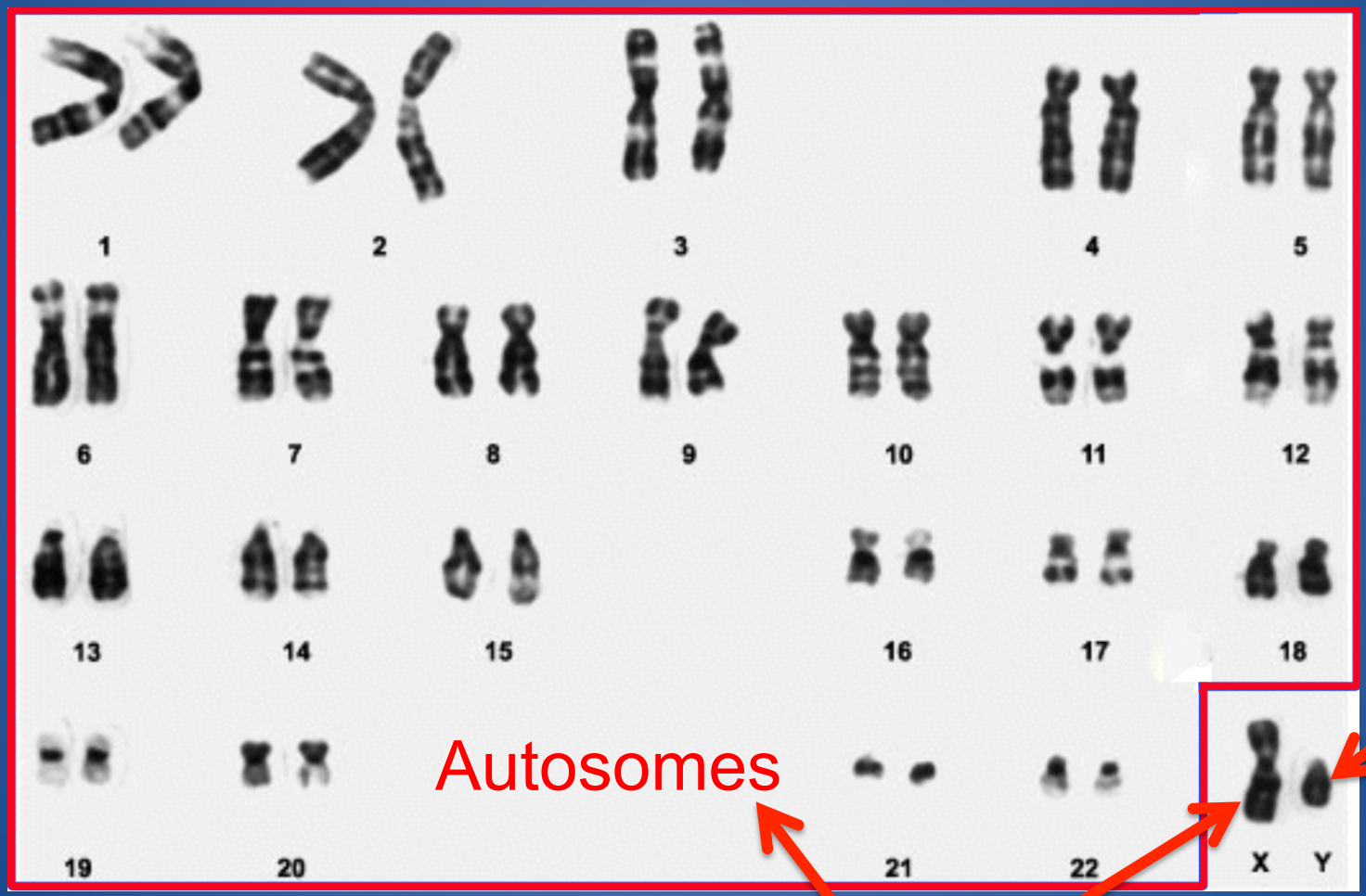
Triangulate!

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

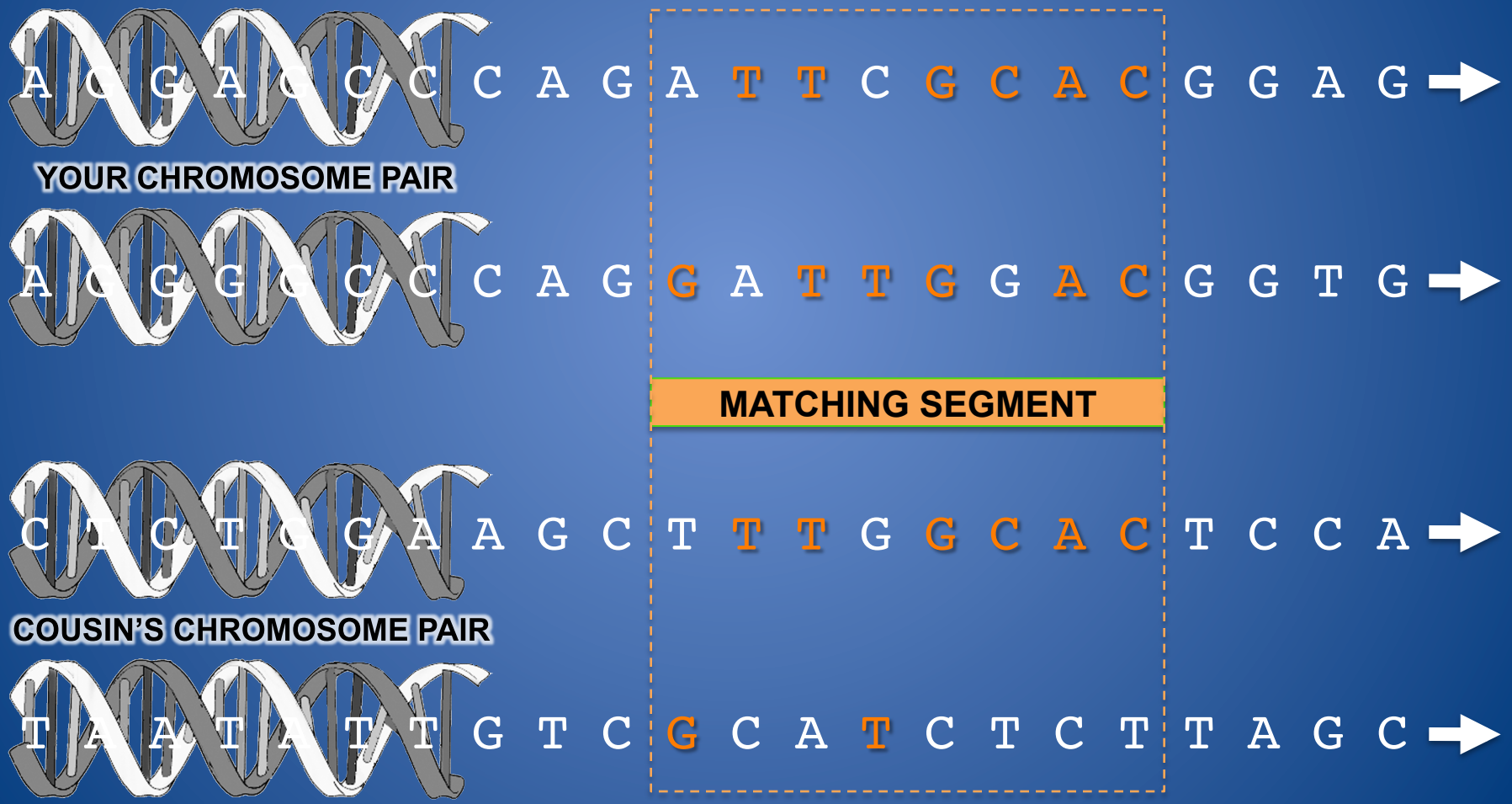
- A TG is two or more overlapping DNA segments where everyone matches everyone else
  - Process your matches in batches (not one at a time)
  - Increase the probability that matches are valid
  - Separate maternal from paternal matches
  - Improve the odds of finding the common ancestor & get it done faster by collaborating with a group

23 Chromosome Pairs

46 Chromosomes in all

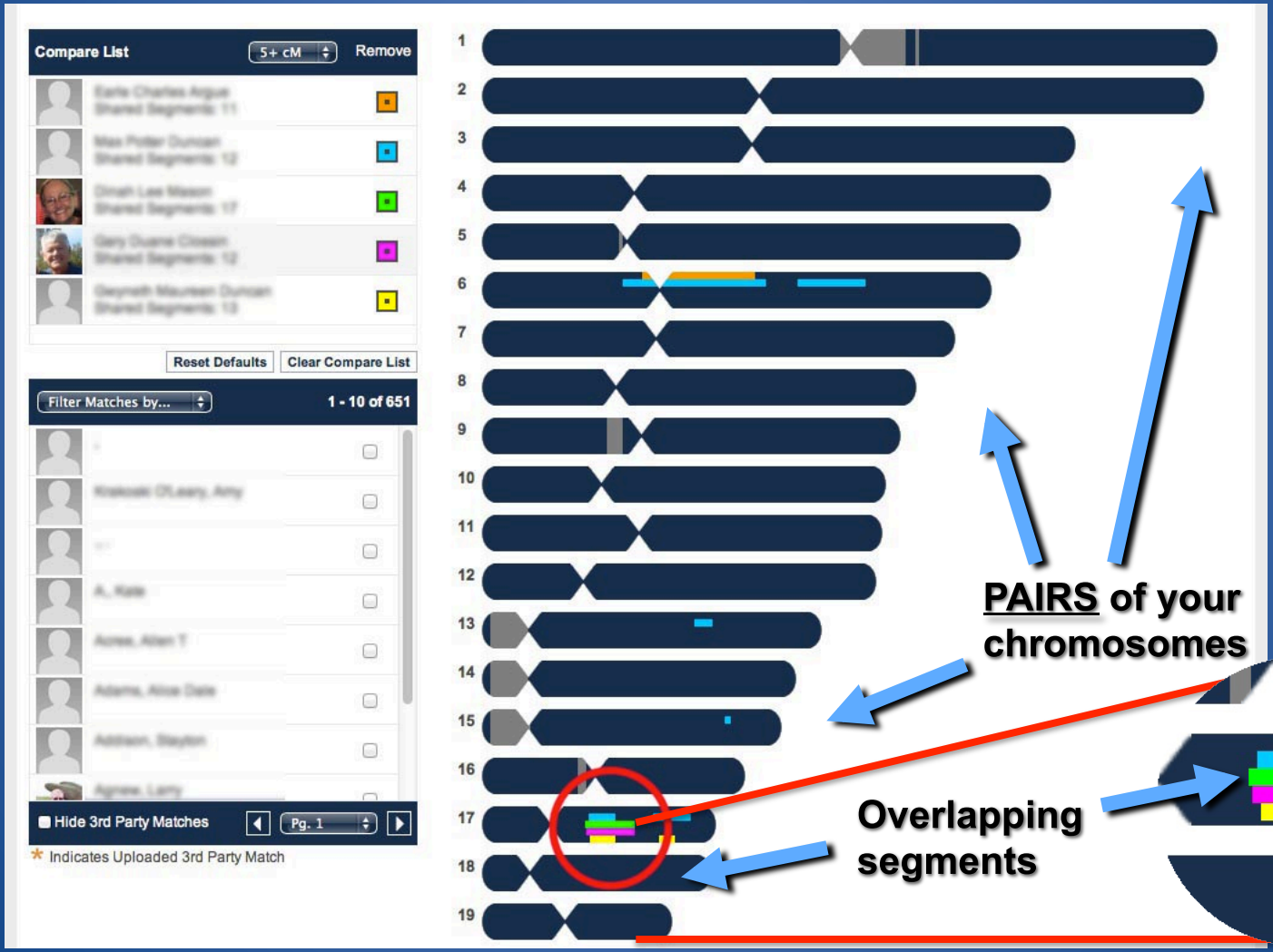


What is a Segment?



(http://belgiancatsnews.wordpress.com)

Here's What We Want To Find

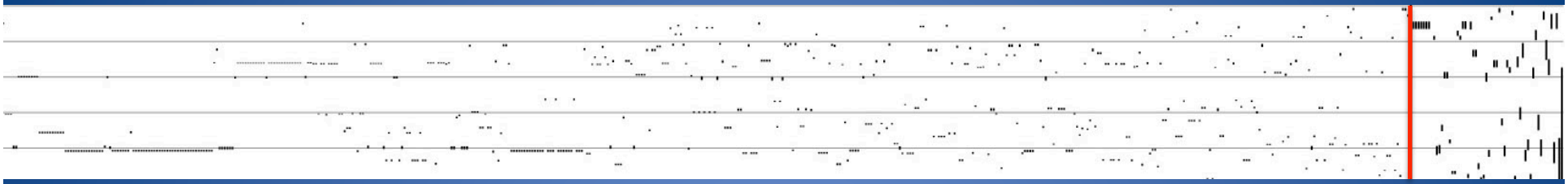


FamilyTreeDNA's Chromosome Browser

Triangulation Step by Step

1. Pick out a nice, long segment
2. Find all the segments that overlap it
3. Compare In-Common-With (ICW) matches
   To ensure everyone in the group matches 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…

Not All Segments are Useful



1 cM

Don's segments on chromosome 1

8 cM

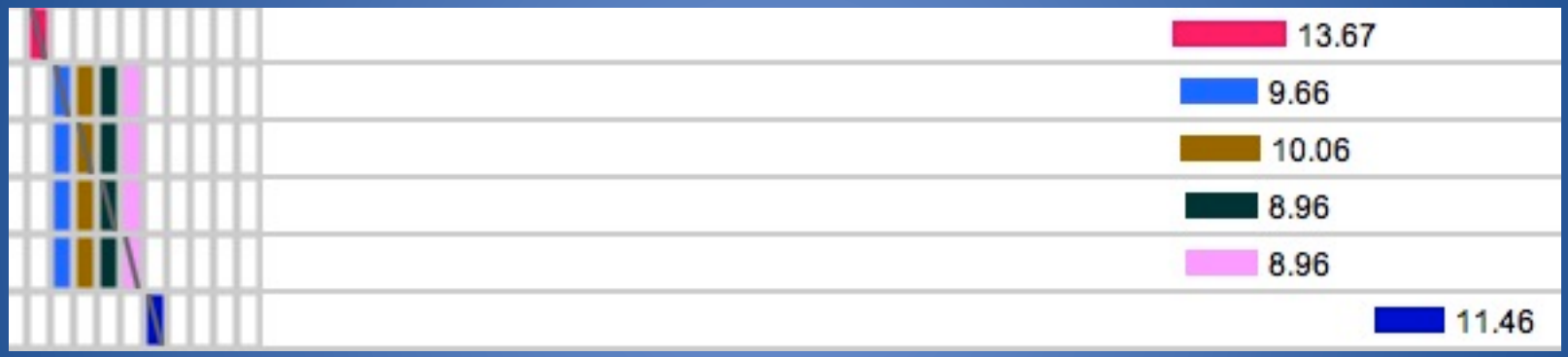
- cM (centiMorgans) measures segment "length"
- Closer relatives have more & longer segments
- Identical By Descent (IBD) vs Identical By State (IBS)
- Most segments < 8 cM are IBS

Matching Segment	% IBD	% IBS
11 cM	>99%	<1%
10 cM	99%	1%
9 cM	80%	20%
8 cM	50%	50%
7 cM	30%	70%
6 cM	20%	80%
5 cM	5%	95%
4 cM	1%	99%

I Suggest…

- Start with your longest segment
  - or a segment for your closest predicted relationship
  - or a 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 triangulated group is more likely IBD
  - Even if a short segment is IBD, it may be very hard to find the common ancestor

Look For Overlapping Segments



And In-Common-With (ICW) Matches

Check Surnames For Clues

[redacted]

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 [illegible] / Bateman (Chester, England?) / Cocklin (Marblehead, MA) / Wood (Ashford, CT) / Chapman (Ashford, CT) / [illegible]ennings/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 on the web
  - Attach a saved copy of your ADSA report
- Stay organized:
  - A folder for each group with the emails and files you've exchanged with group members

Stack The Deck

Test close relatives you know…

- Older Relatives First! (Parents, Aunts, Uncles)
  - Older generations give you more "reach"
  - Best 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

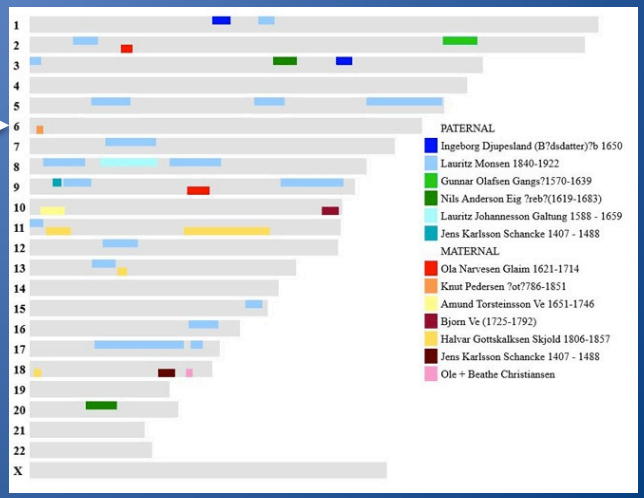
A lesson I learned the hard way…

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%)

Stack The Deck

- Post your GED 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/adsa

ADSA "2.0"

- Relational Database with slicing, dicing and sorting using all fields
- More reports - and you can build your own
- Can handle very large data sets (Ashkenazi)
- *(Soon)* Access to 23andMe data (ICW too)

ADSA "2.0+"

- *(Soon)* User editable fields
  - Saved in the data base
  - e.g. paternal/maternal, segment group names, common ancestor, notes, correspondence
- *(Soon)* Automatic grouping of overlapping segments
- *(Later*) Merged kits/profiles from multiple testing companies
- (Later) GEDMATCH support
- *(Later)* GED support
- *(Later)* Share your data with others

Beta Testers Wanted
For the New ADSA!

test.DNAgedcom.com/adsa

Contact me to get access: worth@ucla.edu

Questions?

Current Version of ADSA:

www.DNAgedcom.com/adsa

"How To" Manual (for new ADSA):

tinyurl.com/adsamanual